
This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

<https://books.google.com>





c

**HISTORY OF
THE SECOND WORLD WAR
UNITED KINGDOM MEDICAL SERIES**

Editor-in-Chief :

SIR ARTHUR S. MACNALT, K.C.B., M.A., M.D., F.R.C.P., F.R.C.S.

THE ARMY MEDICAL SERVICES

BY

F. A. E. CREW, F.R.S.
//

Campaigns

VOLUME III

SICILY ITALY
GREECE (1944-45)



LONDON
HER MAJESTY'S STATIONERY OFFICE

1959

W

D807
G7C73
V. 3

First Published 1959

© *Crown Copyright 1959*

Published by

HER MAJESTY'S STATIONERY OFFICE

To be purchased from

York House, Kingsway, London W.C.2

423 Oxford Street, London W.1

13a Castle Street, Edinburgh 2

109 St. Mary Street, Cardiff

39 King Street, Manchester 2

Tower Lane, Bristol 1

2 Edmund Street, Birmingham 3

80 Chichester Street, Belfast

or through any bookseller

Price £5 os. od. net

*Printed in Great Britain under the authority of Her Majesty's Stationery Office
by William Clowes and Sons, Limited, London and Beccles*

PREFATORY NOTE

BY THE EDITOR-IN-CHIEF

IN THIS THIRD VOLUME of the Army Medical Services Campaigns series, Professor Crew deals in six chapters with the medical aspects of the campaign which began with the invasion of Sicily in July 1943 and went on to the invasion of Italy in September of that year. The campaign in Italy endured throughout 1944 and only ended in May 1945. The seventh chapter is devoted to the medical history of the Return to Greece which began in October 1944.

In a review of the Italian campaign Field Marshal Sir Harold (now Lord) Alexander, Commander-in-Chief of the Allied Armies in Italy, said that when history came to be written the campaign would be judged as one of the most brilliant and successful fought in the Second World War. The country was one of considerable difficulty, and the defence by the Germans skilful, stubborn and determined.

Italy, the scene of warfare for centuries, underwent one of the most tragic ordeals in her chequered history and became the battleground of some of the fiercest fighting in the war.

It is shown in this volume how alike in the Italian Campaign and in the Return to Greece unprecedented demands were made upon the Army Medical Services which, under the able direction of Lieutenant General Sir Alexander Hood, Director General, had reached a high level of efficiency. They had not only to deal with the maintenance of health among the troops and the treatment of battle casualties, but they also had to safeguard the health of civilians, ravaged by disease and often destitute and half-starved through the exactions of the enemy. This civilian relief was afforded not only on grounds of humanity, but in order to prevent malaria and other diseases spreading among the Allied troops.

Professor Crew indicates how well and ably the Army Medical Services responded to the calls made upon them throughout these arduous campaigns, points out how thoroughly the quality of the Army Medical Services was tested in Italy, and draws the lesson that had it been otherwise, had there been gross medical inefficiency, the campaign might have ended in disaster instead of victory. This, indeed, is not too high a claim, for, as he observes, the antagonists were, on the whole, evenly matched and any considerable unilateral man-power wastage through uncontrolled disease or through mismanagement of

the facilities for treatment and repair could have turned the scale. History records many examples of how epidemic disease and consequent man-power wastage have affected the results of a campaign.

Malaria, and typhus in Italy, and venereal disease in Greece presented special problems. Fortunately, the resources of modern medicine were available and were utilised to control these diseases.

This volume has been prepared under the direction of an Editorial Board appointed by H.M. Government, but the Editor alone is responsible for the presentation of the facts and the opinions expressed.

ARTHUR S. MACNALTY

July 1957

EDITORIAL BOARD

Sir CYRIL FLOWER, C.B., F.S.A. (*Chairman*)

<p>Sir WELDON DALRYMPLE-CHAMPNEYS, Bart., C.B., M.A., D.M., B.Ch., F.R.C.P.</p>	}	<i>Ministry of Health</i>
<p>Sir FRANCIS R. FRASER, M.D., F.R.C.P.</p>		
<p>Sir ANDREW DAVIDSON, M.D., F.R.C.P. Ed., F.R.C.S. Ed.</p>	}	<i>Department of Health for Scotland</i>
<p>A. K. BOWMAN, M.B., Ch.B., F.R.F.P.S.</p>		
<p>J. BOYD, C.B.E., M.D., F.R.C.P.I.</p>	}	<i>Government of Northern Ireland</i>
<p>Sir HAROLD HIMSWORTH, K.C.B., M.D., F.R.C.P., F.R.S.</p>		
<p>Dame JANET VAUGHAN, D.B.E., D.M., F.R.C.P.</p>	}	<i>Medical Research Council</i>
<p>Surgeon Vice Admiral Sir CYRIL MAY, K.B.E., C.B., M.C., F.R.C.S., Q.H.S.</p>		
<p>Lt. General Sir ALEXANDER DRUMMOND, K.B.E., C.B., F.R.C.S., D.L.O., Q.H.S.</p>	}	<i>Admiralty</i>
<p>Major General A. SACHS, C.B., C.B.E., M.Sc., M.D., M.R.C.P., Q.H.P.</p>		
<p>Air Marshal Sir PATRICK B. LEE POTTER, K.B.E., M.D., D.T.M. & H., Q.H.S.</p>	}	<i>War Office</i>
<p>Brigadier H. B. LATHAM</p>		
<p>A. B. ACHESON, ESQ., C.M.G. C.B.E.,</p>	}	<i>Air Ministry</i>
<p><i>Editor-in-Chief</i>: Sir ARTHUR S. MACNALT, K.C.B., M.A., M.D., F.R.C.P., F.R.C.S.</p>		
		<i>Cabinet Office</i>
<p><i>Secretary</i>: W. FRANKLIN MELLOR</p>		

The following persons served on the Editorial Board for varying periods:

The Rt. Hon. R. A. Butler, P.C., M.A., F.R.G.S., M.P. (*Chairman*);
Brigadier General Sir James E. Edmonds, C.B., C.M.G., D.Litt. (*Committee
of Imperial Defence*); Surgeon Vice Admiral Sir Sheldon F. Dudley,
K.C.B., O.B.E., M.D., F.R.C.P., F.R.C.S. Ed., F.R.S.; Surgeon Vice Admiral
Sir Henry St. Clair Colson, K.C.B., C.B.E., F.R.C.P.; Surgeon Vice Admiral
Sir Edward Greeson, K.B.E., C.B., M.D., Ch.B.; Surgeon Vice Admiral Sir
Alexander Ingleby-MacKenzie, K.B.E., C.B., B.M., B.Ch., Q.H.P.
(*Admiralty*); Lt. General Sir William P. MacArthur, K.C.B., D.S.O.,
O.B.E., M.D., B.Ch., D.Sc., F.R.C.P.; Lt. General Sir Alexander Hood,
G.B.E., K.C.B., M.D., F.R.C.P., LL.D.; Lt. General Sir Neil Cantlie, K.C.B.,
K.B.E., C.B., M.C., M.B., F.R.C.S.; Lt. General Sir Frederick Harris, K.B.E.,
C.B., M.C., M.B., LL.D., Q.H.S.; Major General H. M. J. Perry, C.B.,
O.B.E., F.R.C.P.; Major General L. T. Poole, C.B., D.S.O., M.C., M.B.,
Ch.B.; Brigadier J. S. K. Boyd, O.B.E., M.D., F.R.S.; Brigadier

EDITORIAL BOARD

H. T. Findlay, M.B., Ch.B. (*War Office*); Air Marshal Sir Harold E. Whittingham, K.C.B., K.B.E., M.B., Ch.B., F.R.C.P., F.R.C.S., LL.D.; Air Marshal Sir Andrew Grant, K.B.E., C.B., M.B., Ch.B.; Air Marshal Sir Philip C. Livingston, K.B.E., C.B., A.F.C., F.R.C.S.; Air Marshal Sir James M. Kilpatrick, K.B.E., C.B., M.B., B.Ch., Q.H.P. (*Air Ministry*); Sir Edward Mellanby, G.B.E., K.C.B., M.D., F.R.C.P., F.R.S. (*Medical Research Council*); Professor J. M. Mackintosh, M.A., M.D., F.R.C.P. (*Department of Health for Scotland*); Lt. Colonel J. S. Yule, O.B.E., Philip Allen, Esq., G. Godfrey Phillips, Esq., M. T. Flett, Esq., A. M. R. Topham, Esq., D. F. Hubback, Esq. (*Cabinet Office*).

EDITORIAL COMMITTEE

Sir ARTHUR S. MACNALTY, K.C.B., M.A., M.D., F.R.C.P., F.R.C.S.
(*Chairman*)

Surgeon Captain J. L. S. COULTER, D.S.C., M.R.C.S., L.R.C.P. (Barrister-at-Law)	}	<i>Admiralty</i>
Professor F. A. E. CREW, D.Sc., M.D., F.R.C.P. Ed., F.R.S.	}	<i>War Office</i>
Squadron Leader S. C. REXFORD-WELCH, M.A., M.R.C.S., L.R.C.P.	}	<i>Air Ministry</i>
A. K. BOWMAN, M.B., Ch.B., F.R.F.P.S.	}	<i>Department of Health for Scotland</i>
J. BOYD, C.B.E., M.D., F.R.C.P.I.	}	<i>Government of Northern Ireland</i>
F. H. K. GREEN, C.B.E., M.D., F.R.C.P.		<i>Medical Research Council</i>
J. ALISON GLOVER, C.B.E., M.D., F.R.C.P.		<i>Ministry of Education</i>
A. SANDISON, O.B.E., M.D.		<i>Ministry of Pensions</i>
Sir ZACHARY COPE, B.A., M.D., M.S., F.R.C.S.		<i>Ministry of Health</i>

Secretary: W. FRANKLIN MELLOR

The following persons served on the Editorial Committee for varying periods:

Surgeon Commander J. J. Keevil, D.S.O., M.D.; Surgeon Lieutenant L. D. de Launay, M.B., B.S.; Surgeon Lieutenant Commander N. M. McArthur, M.D.; Surgeon Commander A. D. Sinclair, M.B., Ch.B. (*Admiralty*); Colonel S. Lyle Cummins, C.B., C.M.G., LL.D., M.D. (*War Office*); Wing Commander R. Oddie, M.B., B.Ch.; Wing Commander E. B. Davies, M.B., B.Ch.; Squadron Leader R. Mortimer, M.B., B.S.; Squadron Leader H. N. H. Genese, M.R.C.S., L.R.C.P. (*Air Ministry*); Charles E. Newman, M.D., F.R.C.P.; N. G. Horner, M.D., F.R.C.P., F.R.C.S.; Lt. Colonel C. L. Dunn, C.I.E., I.M.S. (*Ministry of Health*).

CONTENTS

	<i>Page</i>
PREFATORY NOTE BY THE EDITOR-IN-CHIEF	v
PREFACE	xxxv
CHAPTER I : THE CAMPAIGN IN SICILY—	
July 9–August 17, 1943	I
<i>Précis</i>	

I

Preparation

Strategic and Other Considerations	2
The Terrain	3
Medical Intelligence	4
Force '141'	4
The Tactical Plan—Operation 'Husky'	5
The Beach Brick	6
Canadian 1st Division Preparations	8
A.F.H.Q. Medical Planning in connexion with the Eastern Task Force	9
Preparations in Malta	14
The Capture of Pantellaria and Lampedusa—Operation 'Corkscrew'	16
Medical Cover	16

II

The Invasion of Sicily—Operation 'Husky'

<i>The Invasion of Sicily—Operation 'Husky'</i>	17
Medical Cover	26
The Health of the Troops	47
The Specialist Services	55
Administrative Lessons Learnt	59
Reflections on the Campaign by the D.D.M.S., XXX Corps	62
Sample Statistics	72
<i>Appendices.</i>	86
1. 15 Army Group. Order of Battle. July 9, 1943. (abbreviated)	86
2. Eighth Army. Medical Order of Battle. July 9, 1943	87
3. The Mobile Naval Base Defence Organisation (2) .	89

CHAPTER 2 : THE CAMPAIGN IN ITALY

Page

September 3, 1943–May 2, 1945

A. September 1943–January 1944 91

Précis

I

Preparation

Strategic and Other Considerations	92
Preparatory Planning	93
Operation 'Baytown'. The Tactical Plan	94
Operation 'Avalanche'. The Tactical Plan	94
Operation 'Baytown'. The Medical Tactical Plan	96
The Medical Tactical Plan for the Assault Landing of 231st Infantry Brigade Group	98
Medical Planning at A.F.H.Q. in connexion with the Invasion of the Italian Mainland	99
Operation 'Slapstick'. Medical Planning	104

II

The Invasion of Italy

108

Operation 'Baytown' and the Northward Advance of Eighth Army. Medical Cover	116
Operation 'Avalanche'. Medical Cover (British Com- ponent)	119

III

The Advance to the Winter Line

Eighth Army	123
Medical Cover	130
U.S. Fifth Army	136
Medical Cover (British Component)	142

IV

The Assault on the Winter Line

Eighth Army	144
The Tactical Plan	146
The Assault	146
Medical Cover	150
U.S. Fifth Army	164
Medical Cover (British Component)	167
Eighth Army Medical Arrangements. October–December 1943	170

CONTENTS

xiii

Page

Notes on certain difficulties encountered by the Army Medical Services	182
<i>Appendices</i>	185
4. XIII Corps. Order of Battle. September 3, 1943 X Corps u/c U.S. Fifth Army. Order of Battle. October 30, 1943	185
5. Eighth Army. Medical Units. September 3, 1943 .	186
6. XIII Corps. Medical Order of Battle for Operation 'Baytown'	186
7. X Corps. Medical Order of Battle for Operation 'Avalanche'	187
8. XIII Corps. Medical Order of Battle and Location Statement as at September 30, 1943	188
9. V Corps. Medical Order of Battle. September 23, 1943	189
10. X Corps. Medical Arrangements and Location Statement as at November 13, 1943	189
11. X Corps. Medical Order of Battle and Location Statement as at December 31, 1943	190
12. Eighth Army. Medical Order of Battle and Location Statement as at the end of November 1943	191

CHAPTER 3 : THE CAMPAIGN IN ITALY (continued)

B. January–June 1944	194
--------------------------------	-----

Précis

I

The Assault on the Gustav Line

Preparations for the Assault	195
The Tactical Plan	196
The Terrain	196
The Assault	197
Medical Arrangements. X Corps. January 16, 1944	207
Medical Cover	208

II

Operation 'Shingle'

Medical Cover (British Component)	231
Eighth Army. Medical Arrangements—December 1943– March 1944	237
X Corps. Summary of Psychiatric Work—December 1943– March 1944	241

III

Page

The Renewed Assault upon the Gustav and Hitler Lines and the Capture of Rome

Operation 'Honker'	246
Eighth Army Medical Arrangements	261
Medical Cover	267
<i>Appendices</i>	294
13. Allied Armies in Italy. Order of Battle. January 22, 1944	294
14. Allied Central Mediterranean Force. Medical Units. December 1943-March 1944	295
15. X Corps. Medical Order of Battle and Location Statement as at March 18, 1944	299
16. Allied Armies in Italy. Order of Battle as at May 11, 1944	299

CHAPTER 4: THE CAMPAIGN IN ITALY (continued)

C. June-December 1944	301
---------------------------------	-----

Précis

I

The Pursuit to the Arno

Eighth Army	301
U.S. Fifth Army	317
Medical Arrangements A.A.I.	322
Eighth Army	326
XIII Corps	332
X Corps	333
V Corps	334
Canadian I Corps	334
Medical Cover	336

II

The Assault and Breach of the Gothic Line

Operation 'Olive'	355
The Tactical Plan	356
The Terrain	357
The Weather	358
The Assault	358
Eighth Army	358
U.S. Fifth Army	375

CONTENTS

xv

	<i>Page</i>
Eighth Army. The General Medical Administrative Plan	382
The Medical Tactical Plan	383
Eighth Army Medical Arrangements	386
Corps Medical Arrangements	394
V Corps	394
Canadian I Corps	397
The Medical Branch, British Increment, U.S. Fifth Army	410
XIII Corps	413
X Corps	416
Medical Cover	416
<i>Appendices</i>	446
17. Location Statement. General Hospitals as at July 1, 1944	446
18. Allied Armies in Italy. Order of Battle as at August 25, 1944	447
19. Allied Armies in Italy. Location Statement. General Hospitals September 30, 1944	448
20. 15 Army Group. Medical Order of Battle as at December 31, 1944	450
21. Location Statement. General Hospitals December 31, 1944	454

CHAPTER 5 : THE CAMPAIGN IN ITALY (continued)

D. January–May 1945	456
-------------------------------	-----

Précis

<i>Operation 'Buckland'</i>	456
Eighth Army	457
U.S. Fifth Army	465
Eighth Army. Medical Appreciation	470
Eighth Army Medical Arrangements	473
Medical Cover	486
<i>Appendices</i>	501
22. Eighth Army Order of Battle as at April 9, 1945 (abbreviated)	501
23. Eighth Army Medical Units. April 1945	502

CHAPTER 6 : THE CAMPAIGN IN ITALY (continued)

E. Medical Aspects	504
------------------------------	-----

CONTENTS

I		<i>Page</i>
<i>The Health of the Troops</i>		
Sample Statistics		504
Principal Diseases affecting the Troops—Eighth Army		523
X Corps—September 1943—March 1944		546
II		
<i>Conditions affecting the Health of the Troops</i>		
Sanitary Conditions		548
Water Supplies		552
Diseases Prevalent among the Civilian Population		554
Civilian Refugees		563
Yugoslav Refugees		565
III		
<i>Medical Supplies</i>		
Medical Stores and Equipment		565
Rations and Medical Comforts		568
Clothing		572
IV		
<i>Lessons learnt from the Italian Campaign</i>		
Administrative		574
Professional		582
Hygiene		584
Summary		586
<i>Appendices</i>		586
24. Malaria Control in Mobile Warfare. Italian Campaign. 1943-45		586
25. The Employment of a Field Dressing Station (865 F.D.S.) July 1944-June 1945		592
CHAPTER 7 : THE RETURN TO GREECE		594
I		
<i>The Seizure and Loss of Cos and Leros—</i>		
<i>September and October 1943</i>		594
II		
<i>The Return to Greece—Operation 'Manna', October 1944—May 1945</i>		
Events prior to the Return		597
The Outbreak of Hostilities		600

CONTENTS

xvii

	<i>Page</i>
The Athens Area	600
Medical Cover	601
Salonika	604
Medical Cover for H.Q. Indian 4th Division and Indian 7th Infantry Brigade	604
The Peloponnesus	604
Medical Cover for Indian 11th Infantry Brigade	605
Events subsequent to the Cessation of Hostilities	606
Medical Arrangements	607
The Health of the Troops	613
Casualties	617
Reflections upon the Return to Greece [Operation 'Manna'] by D.D.M.S.	618
<i>Appendix</i>	619
26. The Changing Composition of Land Forces, Greece. 1944-46	619
INDEX	625

ILLUSTRATIONS

SKETCH MAPS AND DIAGRAMS

Chapter 1: Sicily

<i>Fig.</i>		<i>Page</i>
1.	The Layout of a Beach Brick	8
2.	Sicily	17
3.	South-east Sicily	18
4.	The Path of the Canadian Division	20
5.	North-east Sicily	24
6.	The Movements of the Medical Units of 50th Division from the Beachhead to Sortino	27
7.	The Movements of the Medical Units of 50th Division from Sortino to Lentini	29
8.	The Movements of the Medical Units of 50th Division from Lentini to the River Simeto	31
9.	Canadian 1st Division and 231st Infantry Brigade. Monterosso-Regalbuto. Medical Cover	35
10.	The Evacuation Chain. July 27, 1943	37
11.	The Distribution of the Medical Units of XIII Corps. July 27	38
12.	The Evacuation Chain. July 31	40
13.	The Distribution of the Medical Units of XIII Corps. August 8	42
14.	The Distribution of the Medical Units of XIII Corps. August 15	43
15.	The Distribution of the Medical Units of XIII Corps. August 22	44
16.	The Movements of the Medical Units of XXX Corps. August 8-15	45
17.	The Movements of the Medical Units of XXX Corps. August 15-September 2	46
18.	The Malarious Areas of Eastern Sicily.	48

Chapter 2: Italy (A)

19.	The Assault Landings on the Calabrian Shore	95
20.	Southern Italy	109
21.	Salerno	111
22.	The Advance to Naples	115
23.	X Corps. The Distribution of Medical Units. September 12, 1943	120
24.	Naples-Ortona	124
25.	The Advance to the River Trigno	126
26.	Campobasso-Isernia	129
27.	5th Division. Isernia-Castel di Sangro. November 1943	132
28.	The Passage of the Volturno	137

ILLUSTRATIONS

xix

<i>Fig.</i>		<i>Page</i>
29.	The Volturno to Camino	140
30.	X Corps. The Distribution of Medical Units. Early November 1943	145
31.	The Sangro	147
32.	U.S. Fifth Army Front. Mid-November 1943	163
33.	U.S. Fifth Army Operations. Mid-November 1943-mid- January 1944. Centre Sector	165
34.	U.S. Fifth Army Operations. Mid-November 1943-mid- January 1944. Right Sector	168
35.	X Corps Medical Units. November 30, 1943	169
36.	Eighth Army Medical Units. October 10, 1943	172
37.	XIII Corps Medical Units. October 28, 1943	173
38.	Eighth Army Medical Units. November 7, 1943	175
39.	XIII Corps Medical Units. November 24, 1943	177
40.	The Locations of Eighth Army Medical Units. November 30, 1943	179
41.	Eighth Army Medical Units. The Crossing of the Sangro	180
42.	XIII Corps Medical Units. December 31, 1943	182

Chapter 3: Italy (B)

43.	U.S. Fifth Army Operations. Mid-November 1943-mid- January 1944. Left (Coastal) Sector	199
44.	The Cassino Front	202
45.	Cassino	204
46.	46th Division. The Attack on Colle Cedro. Medical Cover	211
47.	46th Division. The Attack on Monte Iuga. Evacuation Chain	213
48.	46th Division. Medical Cover. February 10-11, 1944	214
49.	Indian 4th Division. The Battle of Cassino. Medical Cover	216
50.	Anzio-Rome	224
51.	The Anzio Bridgehead. Allied Position. January 23, 1944	225
52.	The Anzio Bridgehead. Allied Positions. February-March 1944	230
53.	The Anzio Bridgehead. 56th Division. Evacuation Chain	233
54.	The Anzio Bridgehead. 5th Division. Evacuation Chain	235
55.	The Approaches to Rome	245
56.	Cassino-River Liri	248
57.	The Advance from the Garigliano. May 1944	250
58.	The Advance from the Garigliano (<i>continued</i>)	253
59.	The Advance on Frosinone	255
60.	The Capture of Pico	257
61.	The Capture of Rome	260
62.	The Distribution of the Canadian Forward Medical Units. May 17, 1944	268
63.	The Distribution of the Canadian Forward Medical Units. May 20, 1944	269
64.	The Distribution of the Canadian Forward Medical Units. May 23, 1944	270

<i>Fig.</i>		<i>Page</i>
65.	The Distribution of the Canadian Forward Medical Units. May 25, 1944	270
66.	The Distribution of the Canadian Forward Medical Units. May 27, 1944	271
67.	The Distribution of the Canadian Forward Medical Units. May 29, 1944	272
68.	4th Division. Medical Cover west of the Garigliano. March 1944	280
69.	4th Division. Medical Cover east of the Garigliano. March 1944	282
70.	4th Division. Operation 'Honker'. The Crossing of the Rapido. May 11-15, 1944. Medical Cover	284

Chapter 4: Italy (C)

71.	The Pursuit from Rome	303
72.	The Pursuit from Rome (<i>continued</i>)	305
73.	Eighth Army. The Approach to the Arno	307
74.	Eighth Army. Arezzo-Bibbiena	309
75.	The Capture of Florence	312
76.	The Adriatic Flank. April-August 1944	316
77.	U.S. Fifth Army. The Approach to the Arno	319
78.	The Capture of Leghorn and Pisa	321
79.	Eighth Army Evacuation Chain. June 9, 1944	326
80.	X and XIII Corps Evacuation Chains. June 23, 1944	327
81.	X and XIII Corps Evacuation Chains. June 30, 1944	328
82.	Eighth Army Medical Units. August 11, 1944	331
83.	The Distribution of the Canadian Medical Units. July 1, 1944	335
84.	X Corps. Medical Cover. June 18-July 7, 1944	351
85.	X Corps. Medical Cover. July 7-18, 1944	353
86.	The Adriatic Coast. The Cesano to the Conca	359
87.	The Adriatic Coast. Pesaro-Rimini	361
88.	The Capture of Rimini	363
89.	Eighth Army. Area of Operations. September-December 1944	366
90.	The Advance from Rimini	368
91.	Forli-Faenza	371
92.	The Advance to the Senio	373
93.	The Advance from Florence	376
94.	The Road to Bologna	378
95.	The Advance west of Florence	380
96.	Eighth Army Medical Units. August 25, 1944	387
97.	Eighth Army Medical Units. September 30, 1944	388
98.	Eighth Army Medical Units. December 31, 1944	392
99.	Eighth Army Medical Units. April 1, 1945	393
100.	The Distribution of the Canadian Forward Medical Units. August 24, 1944	398
101.	The Distribution of the Canadian Forward Medical Units. August 25, 1944	399

ILLUSTRATIONS

xxi

<i>Fig.</i>		<i>Page</i>
102.	The Distribution of the Canadian Forward Medical Units. September 1, 1944	400
103.	The Distribution of the Canadian Forward Medical Units. September 13, 1944	402
104.	XIII Corps Medical Units. July–September 1944	414
105.	XIII Corps Medical Units. September–November 1944.	415
106.	XIII Corps Medical Units. January–March 1945	417
107.	1st Armoured Division. The Attack on the San Savino–Passano–Coriano Feature. Medical Cover	418
108.	1st Armoured Division. Ripabianca. Medical Cover	419
109.	1st Armoured Division. The Crossing of the Marecchia and the Attack on Sant Arcangelo. Medical Cover	420
110.	46th Division. Medical Cover. August 30, 1944	425
111.	46th Division. Medical Cover. September 17, 1944	426
112.	Indian 10th Division. Medical Cover. October 3–November 2, 1944	439
113.	Indian 10th Division. Medical Cover. November 19–December 17, 1944	442
114.	The Locations of the General Hospitals (excluding U.S. units) of 15 Army Group. December 31, 1944 (Appendix XXI)	455

Chapter 5: Italy (D)

115.	Eighth Army. The Advance to the Po	462
116.	The Last Phase	464
117.	U.S. Fifth Army. The Coastal Attack	466
118.	U.S. Fifth Army. The Advance to the Po	467
119.	Eighth Army. The Crossing of the Senio. April 9, 1945. The Surgical Plan and Evacuation Routes	473
120.	Eighth Army. The Battle of the Argenta Gap. April 16–18, 1945. The Surgical Plan and Evacuation Routes.	474
121.	V Corps. The Forward Movements of Medical Units during the Advance to the Adige	476
122.	Eighth Army. The Crossing of the Po. April 26–27, 1945. The Surgical Plan and Evacuation Routes	478
123.	XIII Corps. The Forward Movements of Medical Units during the Final Battle (1)	479
124.	XIII Corps. The Forward Movements of Medical Units during the Final Battle (2)	480
125.	Eighth Army. The Surgical Plan and Evacuation Route as at May 2	481
126.	XIII Corps. The Forward Movements of Medical Units during the Final Battle (3)	481
127.	XIII Corps. The Forward Movements of Medical Units during the Final Battle (4)	482

<i>Fig.</i>		<i>Page</i>
128.	Eighth Army. The Surgical Plan and Evacuation Route as at May 5	483
129.	XIII Corps. The Forward Movements of Medical Units during the Final Battle (5)	484
130.	Eighth Army Medical Units as at June 30, 1945	485
131.	New Zealand 2nd Division. The Movements of the Divisional Medical Units during the Final Battle	493

Chapter 6: Italy (E)

132.	The Typhus Epidemic. Naples. November 1943–February 1944	562
------	--	-----

Chapter 7: Greece

133.	Southern Greece	602
134.	Northern Greece	603
135.	4th Division Medical Units. January–April 1945	609
136.	46th Division Medical Units	611

PLATES

*Chapter 1**Between pages*

I.	Stretcher-bearers moving forward through a Sicilian Village	} 66–67
II.	The Durham Light Infantry enter Catania. Italian Nurses tend the Lightly Wounded	
III.	Carriers being prepared for the Evacuation of Wounded	
IV.	A Main Dressing Station in a Sicilian Church. Casualties being evacuated therefrom to a nearby Air Evacuation Centre	
V.	Forward Surgery in a Sicilian Monastery	
VI.	Casualties being received at an Air Evacuation Centre in Sicily	
VII.	Casualties being loaded into a Douglas D.C.3 Transport Plane at an Air Evacuation Centre, Sicily	
VIII.	<i>En route</i> from Catania to Tunis	
IX.	Casualties evacuated from Sicily by Air reach 99 General Hospital, Algiers	
X.	An <i>ad hoc</i> Infant Welfare Centre, Sicily	

Chapter 2

XI.	A Day on Capri for Convalescing Patients of 92 British General Hospital, Naples	} 178–9
XII.	At a Convalescent Depot	
XIII.	No. 1 Mobile Ophthalmic Unit	

TABLES

xxiii

	<i>Between pages</i>
XIV. A Ward in a General Hospital at Caserta	} 178-9
XV. V.A.Ds. in a General Hospital	
XVI. The Physiotherapy Section of a General Hospital	
XVII. D.U.K.Ws. used for the Evacuation of Casualties across the Sangro	

Chapter 3

XVIII. Stretcher-bearers in Cassino Town	} 290-291
XIX. A Mule Litter	
XX. Evacuation from the Regimental Aid Post by Jeep with Stretcher Gear	
XXI. A $\frac{3}{4}$ -ton Weapons Carrier fitted for Casualty Evacuation	
XXII. A Regimental Aid Post. Anzio Beachhead	
XXIII. A Main Dressing Station. Anzio Beachhead	
XXIV. Forward Surgery	} 290-291
XXV. Forward Dentistry	

Chapter 4

XXVI. Regimental Stretcher-bearers moving forward under fire	} 440-441
XXVII. A Casualty being brought back to the Regimental Aid Post on an Improvised Sledge. The Santerno Valley	
XXVIII. A Stretcher-bearer Squad rests while the Regimental Medical Officer dresses the Wounds of a Casualty	

The photographs are Crown copyright. Three of them are Official War Office photographs obtained through Major-General Sir Ernest Cowell who served as Surgeon, A.F.H.Q. The rest are the property of the Imperial War Museum. To Sir Ernest Cowell and to Mr. A. J. Charge, Keeper of Photographs in the Imperial War Museum, grateful acknowledgement is made.

TABLES

Chapter 1: Sicily

1. Eighth Army casualties. July 10-17	72
2. Eighth Army casualties. July 18-24	72
3. Eighth Army casualties. July 25-31	73
4. Eighth Army casualties. August 1-7	73
5. Eighth Army casualties. August 8-14	74
6. Eighth Army casualties. August 15-21	74
7. Eighth Army. Total casualties	75
8. The hospital situation in the whole theatre. August 7	75
9. Evacuation state. Week ending August 7	75

	<i>Page</i>
10. Casualties evacuated to Medical Units in Malta	76
11. Casualties evacuated from Medical Units in Malta	76
12. Casualties passing through Luqa Airfield from Sicily and Italy	76
13. Bedstate. British North Africa. August 12	77
14. Tentative analysis of approximate total British casualties. July 10– August 17	77
15. Morbidity and mortality. Eighth Army. June 25–July 30, 1943	77
16. Battle casualties and sick admitted to Medical Units of XXX Corps. July 17–August 28	78
17. Air Evacuation	79
18. 51st Division casualties	79
19. XIII Corps casualties. July 11–31	79
20. 50th Division casualties	80
21. 50th Division casualties. Classified by missile and by anatomical region	81
22. 50th Division casualties. Miscellaneous	85
<i>Chapter 2: Italy (A)</i>	
23. 865 Field Dressing Station, Salerno. September 15–30, 1943	122
24. 866 Field Dressing Station, Salerno. September–November 1943	123
25. X Corps casualties treated in the Salerno Beachhead by Medical Units. September 9–18, 1943	123
25. Salerno. Numbers evacuated through the Medical Sections of the Beach Groups. September 1943	123
<i>Chapter 3: Italy (B)</i>	
26. New Zealand Corps casualties. Cassino. March 15–24, 1944	222
27. Anzio. British component. Casualties. January–March 1944	237
28. Canadian casualties. April–June 1944	272
<i>Chapter 4: Italy (C)</i>	
29. South African 6th Armoured Division casualties. June 1944	343
30. Admissions to Canadian Hospitals. August–December 1944	409
31. South African 6th Armoured Division. Strength and casualties. July 1–September 30, 1944	444
<i>Chapter 5: Italy (D)</i>	
32. Sick and wounded admitted to Eighth Army Medical Units, April 9–18, and evacuated out of Eighth Army area, April 7–20, 1944	477
33. South African 6th Armoured Division. Admissions to Medical Units during the final offensive	489
<i>Chapter 6: Italy (E)</i>	
34. Principal causes of admission to all Medical Units. B.N.A.F. and C.M.F. 1943, 1944 and 1945	504
35. Eighth Army. Relative morbidity and casualty rates. Italy, 1944	506
36. Eighth Army. Breakdown of certain diseases and disease groups shown in Table 35	507

TABLES

xxv

Page

37.	Eighth Army. Relative wastage and morbidity rates and over-all mean duration of stay. B.O.Rs. Italy, 1944	508
38.	Wastage and duration of stay in Hospital and Convalescent Depot separately. B.O.Rs. Italy, 1944	510
39.	Eighth Army. Seasonal variation in respect of certain diseases. Relative monthly rates. B.O.Rs. Italy, 1944	511
40.	Eighth Army. Seasonal fluctuation of hospital cases. Quarterly relative morbidity rates with respect to certain diseases. B.O.Rs. Italy, 1944	511
41.	Eighth Army. Ratio of sick by Formations weekly. October–November 1943	512
42.	Eighth Army. Ratio of sick weekly. December 1943–June 1945	512
43.	Sick admitted to Eighth Army Medical Units. September–November 1943	513
44.	Ratio of battle casualties to sick. September–November 1943	513
45.	Numbers and ratio of battle casualties by Formation. October–November 1943	513
46.	Battle casualties during the assault landings and initial advance. September–November 1943	514
47.	Battle casualties. September 1943–May 1945	514
48.	XIII Corps. Admissions to Medical Units. September 3–December 31, 1943	514
49.	XIII Corps. Admissions on account of certain diseases. September 3–December 31, 1943	515
50.	XIII Corps. Battle casualties and sick. January–March 1944	515
51.	XIII Corps. Battle casualties and sick. April–June 1944	515
52.	XIII Corps. Battle casualties and sick. May 11–July 1, 1944	516
53.	XIII Corps. Psychiatric casualties as a percentage of total battle casualties	516
54.	XIII Corps. The distribution of wounds by anatomical region	516
55.	V Corps. Principal diseases. Sick rate and battle casualties. July 1944–June 1945	516
56.	V Corps. Casualties passing through Medical Units. April 9–May 2, 1945 and type of wound by missile	518
57.	X Corps. Admissions to Medical Units. Casualties. October 1943–March 1944	519
58.	New Zealand 2nd Division. Casualties. November 1943–November 1944. Daily hospital admission rate. January–May 1945. Patients in hospital as a percentage of the total Expeditionary Force. January–May 1945. Battle casualties and accidental injuries. January–May 1945	522
59.	New Zealand 2nd Division. Infective Hepatitis. 1941–1944	532
60.	New Zealand 2nd Division. Venereal diseases. January–June 1944	542

Chapter 7: Greece

61.	The principal diseases affecting the troops. October–December 1944	613
62.	The principal diseases affecting the troops. January–March 1945	615
63.	46th Division. Principal diseases affecting the troops. January–March 1945	616

ABBREVIATIONS

A.	The Adjutant General's Department	
A.A.	Anti-aircraft	
A.A.I.	Allied Armies in Italy	
A.A.M.C.	Australian Army Medical Corps	
A.A.P.C.	Army Auxiliary Pioneer Corps	
A.B.	Airborne	
A.B.S.D.	The Army Blood Supply Depot (Bristol)	
A.C.C.	Ambulance Car Company, R.A.S.C.	
A.C.M.F.	Allied Central Mediterranean Force	
A.D.H.	Assistant Director of Hygiene	
A.D.M.S.	Assistant Director of Medical Services	
A.D.S.	Advanced Dressing Station	
Adv. Adm. Ech.	Advanced Administrative Echelon (A.F.H.Q.)	
Adv. Surg. Centre	Advanced Surgical Centre	
Adv. Depot Med. Stores	Advanced Depot of Medical Stores	
A.E.C. or Air Evac. Centre	Air Evacuation Centre	
A.F.H.Q.	Allied Force Headquarters	
A.F.S.	American Friends Service	
A.G.R.A.	Army Group Royal Artillery	
A.L. or A/L	Air-landing or Anti-louse	
Amb. Train	Ambulance train	
A.M.C.U.	Anti-malaria Control Unit	
A.M.G.O.T. or A.M.G.	Allied Military Government of Occupied Territories	
A.M.P.C.	Auxiliary Military Pioneer Corps	
A.M.S.	The Army Medical Services	
Armd.	Armoured	
A.R.O.	Army Routine Order	
A.S.C.	Advanced Surgical Centre	
A.S.H.	Army School of Hygiene	
A. & S.H.	The Argyll and Sutherland Highlanders	
A/T	Anti-tank	
A.T.S.O.	Anti-Typhus Soluble Oil	
B.C.	Battle casualties	
Bde.	Brigade	
B.D.S.	Beach Dressing Station	
Bedfs. & Herts.	The Bedfordshire and Hertfordshire Regiment	
B.G.H.	British General Hospital	
B.M.M.G.	British Military Mission, Greece	
Bn.	Battalion	
B.N.A.F.	British North African Force	
Br.	British	
Br.S.S. or B.S.S.	British Staging Section	
B.S.A.	Base Sub-Area	

ABBREVIATIONS

xxvii

B.T.	.	.	Benign Tertian (Malaria)
B.T.U.	.	.	Base Transfusion Unit
Bty.	.	.	Battery
Bufs	.	.	The Royal East Kent Regiment
C.A.O.	.	.	Chief Administrative Officer (U.S.)
C.C.	.	.	Cape Corps (Medical) (U.D.F.)
C.C.P.	.	.	Casualty Collecting Post
C.C.S.	.	.	Casualty Clearing Station
Cdn.	.	.	Canadian
Cdo.	.	.	Commando
C.G.H.	.	.	Combined General Hospital (Indian Army)
Cheshire	.	.	The Cheshire Regiment
Clin.	.	.	Clinical (Malaria)
C. in C.	.	.	Commander-in-Chief
C.I.L.	.	.	The Italian Liberation Corps
C.M.F.	.	.	Central Mediterranean Force
C.M.P.	.	.	The Corps of Military Police
C.O.	.	.	Commanding Officer
Coldm. Gds.	.	.	The Coldstream Guards
Con. Depot	.	.	Convalescent Depot
Coy.	.	.	Company
C.P.	.	.	Car Post
C.P.T.	.	.	Corps Psychiatric Team
C.R.A.	.	.	Commander Royal Artillery
C.R.A.S.C.	.	.	Commander Royal Army Service Corps
C.R.E.	.	.	Commander Royal Engineers
C.R.Sigs.	.	.	Commander Royal Signals
C.R.S.	.	.	Camp Reception Station
D.A.D.G.	.	.	Deputy Assistant Director-General
D.A.D.M.S.	.	.	Deputy Assistant Director of Medical Services
D.C.L.I.	.	.	The Duke of Cornwall's Light Infantry
D.D.H.	.	.	Deputy Director of Hygiene
D.D.M.S.	.	.	Deputy Director of Medical Services
D.D.S.T.	.	.	Deputy Director Supplies and Transport
D.D.T.	.	.	Dichloro-diphenyl-trichlorethane
Detach.	.	.	Detachment
D.I.A.	.	.	Division d'Infanterie Alpine
D.I.D.	.	.	Detail Issue Depot
Div.	.	.	Division
D.L.I.	.	.	The Durham Light Infantry
D.M.M.	.	.	Division Marocaine de Montagne
D.M.S.	.	.	Director of Medical Services
D.P.	.	.	Displaced Personnel
D.Q.M.G.	.	.	Deputy Quartermaster-General
D.R.	.	.	Despatch Rider
D.S.T.O.	.	.	Deputy Sea Transport Officer
D.U.K.W.	.	.	An amphibious 3-ton vehicle
E.A.M.	.	.	The National Liberation Front (Greece)
E.B.S.	.	.	Eastern Base Section (U.S.)

E.D.E.S.	The Republican Wing of the Greek Guerrilla Forces
E.L.A.S.	The People's National Army (Greece)
Ent. Fd. Unit	Entomological Field Unit
E.N.S.A.	Entertainments National Services Association
E.N.T.	Ear, Nose and Throat
E.P.I.P.	European Privates Indian Pattern (tent)
E.T.	Early Treatment (V.D.)
Evac.	Evacuation
Fac. Max.	Maxillo-facial (specialist surgical team)
Fd. Amb.	Field Ambulance
F.D.C. or Fd. Dent. Centre	Field Dental Centre
F.D.L.	Forward Defended Locality
Fd. Dent. Lab.	Field Dental Laboratory
F.D.S.	Field Dressing Station
Fd. Hyg. Sec.	Field Hygiene Section
Fd. San. Sec.	Field Sanitary Section
Foresters	The Nottingham and Derbyshire Regiment
F.S.R.	Field Service Ration
F.S.U.	Field Surgical Unit
F.T.U.	Field Transfusion Unit
G.1098	Mobilisation Equipment Scale
G.D.O.	General Duty Officer or Orderly
Gds.	Guards
G.H.Q.	General Headquarters
Gk.	Greek
Gordons	The Gordon Highlanders
Gp.	Group
Gren. Gds.	The Grenadier Guards
G.S.	General Service (pattern)
G.S.W.	Gunshot Wound
Hamps.	The Hampshire Regiment
H.C.	Hospital Carrier
H.C.R.	The Household Cavalry Regiment
H.S. or H.M.H.S.	Hospital Ship
Hosp.	Hospital
H.Q.	Headquarters
Hy. Sec.	Heavy Section
I.A.M.C.	The Indian Army Medical Corps
I.A.T.	Inflammation of the Areolar Tissue
i/c	in command
I.G.H.	Indian General Hospital
Ind.	Indian
Indep.	Independent
Inf.	Infantry
Inniskillings	The Royal Inniskilling Fusiliers
I.S.S.	Indian Staging Section

ABBREVIATIONS

xxix

K.D.G.	1st King's Dragoon Guards
King's	The King's Regiment (Liverpool)
King's Own	The King's Own Royal Regiment (Lancaster)
K.O.Y.L.I.	The King's Own Yorkshire Light Infantry
K.R.R.C.	The King's Royal Rifle Corps
K.S.L.I.	The King's Shropshire Light Infantry
L.	Lancers
L.C.A.	Landing Craft Assault
L.C.I.	" " Infantry
L.C.M.	" " Mechanised
L.C.T.	" " Tank
Leicesters	The Leicestershire Regiment
L.F.G.	Land Forces Greece
L.F.M.L.G.	Land Forces and Military Liaison Greece
L.G.	Landing Ground
Lincolns	The Lincolnshire Regiment
L.I.R.	The London Irish Rifles (T.A.)
L.O.B.	Left out of Battle
L. of C.	Lines of Communication
Lond. Scot.	The London Scottish (T.A.)
Lovat Scouts	The Lovat Scouts (T.A.)
Loyals	The Loyal Regiment (North Lancashire)
L.S.I.	Landing ship Infantry
L.S.T.	" " Tank
Lt.	Light
M.	Medical
M.A.A.F.	Mediterranean Allied Air Forces
M.A.C.	Motor Ambulance Convoy
Mal. Fd. Lab.	Malaria Field Laboratory
M.A.S.	Motor Ambulance Section (Indian Army)
Max.-Fac. Surg. Unit	Maxillo-facial Surgical Unit
M.B.U.	Mobile Bath Unit
M.C.U.	Malaria Control Unit
M.D.S.	Main Dressing Station
M.D.U.	Mobile Dental Unit
M.E.	The Middle East
M.E.C.	Middle East Command
Med.	Medical
Med. Res. Lab.	Medical Research Laboratory
M.E.F.	Middle East Force
M.E.F.S.	Middle East Field Scale
M.E.S.H.	Middle East School of Hygiene
Mil. Fam. Hosp.	Military Family Hospital
M.F.S.U.	Maxillo-facial Surgical Unit
M.I. Room	Medical Inspection Room
M.L.G.	Military Liaison Greece
M.N.B.D.O.	Mobile Naval Base Defence Organisation
M.N.S.U.	Mobile Neuro-surgical Unit
M.O.	Medical Officer
Mob.	Mobile

ABBREVIATIONS

Mob. Bact. Lab.	.	.	Mobile Bacteriological Laboratory
Mob. Fd. Lab.	.	.	Mobile Field Laboratory
Mob. Ophthal. Unit or M.O.U.	.	.	Mobile Ophthalmic Unit
Mob. Surg. Unit	.	.	Mobile Surgical Unit
Mov. & Tn.	.	.	Movement and Transportation
M.T.	.	.	Mechanical Transport or Malignant Tertian (Malaria)
M. and V.	.	.	Meat and Vegetable
N.A.	.	.	North African
N.C.O.	.	.	Non-commissioned Officer
N.O.	.	.	Nursing Orderly
Northampton	.	.	The Northamptonshire Regiment
N.Y.D.	.	.	Not Yet Diagnosed
" Fever	.	.	" " Fever
" N.	.	.	" " Nervous, Neuropsychiatric
" P.	.	.	" " Psychiatric
" V.S.	.	.	" " Venereal Sore
N.Z.	.	.	New Zealand
N.Z.A.N.S.	.	.	The New Zealand Army Nursing Service
N.Z.E.F.	.	.	The New Zealand Expeditionary Force
N.Z.M.C.	.	.	The New Zealand Medical Corps
O.C.	.	.	Officer Commanding
Ofrs.	.	.	Officers
O.R.	.	.	Other Ranks
O.R.A.	.	.	Operating Room Assistant
O.S.	.	.	Ordnance Services
Oxf. Bucks.	.	.	The Oxfordshire and Buckinghamshire Light Infantry
P.A.C.	.	.	Prophylactic Ablution Centre
Para.	.	.	Parachute
Pln.	.	.	Platoon
P.M.L.O.	.	.	Principal Medical Liaison Officer
P.M.O.	.	.	Principal Medical Officer
Pol.	.	.	Polish
P.O.L.	.	.	Petrol, Oil, Lubricants
P.o.W.	.	.	Prisoner(s)-of-War
Q.	.	.	Quartan Malaria
Q.A.I.M.N.S.	.	.	Queen Alexandra's Imperial Military Nursing Service
Q.M.	.	.	Quartermaster
Q.M.S.	.	.	Quartermaster Sergeant
Queens	.	.	The Queen's Royal Regiment (West Surrey)
R.A.	.	.	The Royal Regiment of Artillery
R.A.A.C.	.	.	Rome Allied Area Command
R.A.F.	.	.	The Royal Air Force
R.A.M.C.	.	.	The Royal Army Medical Corps

R.A.O.C.	The Royal Army Ordnance Corps
R.A.P.	Regimental Aid Post
R.A.S.C.	The Royal Army Service Corps
R.B.	The Rifle Brigade
R. Berks.	The Royal Berkshire Regiment
R.C.A.M.C.	The Royal Canadian Army Medical Corps
R.C.T.	Regimental Combat Team (U.S.)
R.E.	The Corps of Royal Engineers
Recce.	Reconnaissance
R.E.M.E.	The Royal Electrical and Mechanical Engineers
R.F.	The Royal Fusiliers (City of London Regiment)
R.F.F.R.	The Royal Frontier Force Regiment (Indian Army)
R.H.	Railhead
R.I.F. or R.Ir.F.	The Royal Irish Fusiliers
R.M.	Royal Marine
R.M.O.	Regimental Medical Officer
R.N.	The Royal Navy
R.S.	Reception Station
R.S.F.	The Royal Scots Fusiliers
R.Tks.	The Royal Tank Regiment
R.T.U.	Returned to Unit
R.W.K.	The Queen's Own Royal West Kent Regiment
S.A.	South African or Sub-Area
S. and C.	Syphilis and Chancroid
S.A.A.M.C.	South African Army Medical Corps
*S.A.S.	Special Air Service
S.B.	Stretcher-bearer
Seaforth	The Seaforth Highlanders
Sec.	Section
S.E.P.	Surrendered Enemy Personnel
S.G.	The Scots Guards
Sharpshooters	The County of London Yeomanry
S.M.O.	Senior Medical Officer
S.N.O.L.	Senior Naval Officer Liaison
Somersets or Som.L.I.	The Somerset Light Infantry
S.P.	Staging Post or Surrendered Personnel
S.R.Sqn.	Special Raiding Squadrons. (S.A.S.)
Sqn.	Squadron
S.S.	Special Service
S.T.O.	Special Treatment Orderly
T.A.	The Territorial Army
T.A.F.	Toxoid antitoxin floccules

* On the paper strength of Middle East Command in 1941 there was an imaginary force known as the Special Air Service. Its purpose was to persuade General Rommel that his opponents possessed an airborne brigade. When the commandos that comprised 'Layforce' in Crete returned to Egypt, 7 of their officers and 60 men were permitted to take over the title. Their task was that of destroying the Axis Desert Air Force, using commando methods. In 1942 the S.A.S. was expanded to become 1st S.A.S. Regt., 300 and later 500 strong. Special Boat Sections, Small Raiding Squadrons and troops and squadrons consisting of Allied personnel were brought into being. During the course of the Italian campaign 2nd S.A.S. Regt. was formed.

T.B.	Tuberculosis
T.C.U.	Troop-carrying Units
Tk.	Tank
Tps.	Troops
u/c	under command of
U.D.F.	The Union (of South Africa) Defence Force
U.K.	The United Kingdom
U.N.R.R.A.	The United Nations Relief and Rehabilitation Administration
U.S. or U.S.A.	The United States of America
U.S.A.A.C.	The United States Army Air Corps
U.S.A.A.F.	The United States Army Air Force
V.D.	Venereal Diseases
V.D.T.C.	„ „ Treatment Centre
V.D.T.T.	„ „ Treatment Team
W.3118	Field Medical Card
W.A.	West African
W.E.	War Establishment
W.S.P.	Water Sterilising Powder
Y. & L.	The York and Lancaster Regiment

GLOSSARY RELATING TO THE CAMPAIGNS IN SICILY
AND ON THE MAINLAND OF ITALY

Borgo	Borough, Suburb	Ospedale	Hospital
Campo	Field	Piana	Plain
Canale (C. Can.)	Canal, Channel	Ponte	Bridge
Colle (Cle.)	Hills	Porto	Port
Fiume	River	Punta (P.)	Peak
Fosso	Ditch	Rio (R.)	River
Golfe	Gulf	Rocca	Rock
Isola	Island	Stazione	Station
Lago	Lake	Stretto	Street
Marina	Sea coast	Torrente	Stream
Montagna	Mountain	Via	Road, Way
Monte (M.)	Mountain		

BIBLIOGRAPHY

PUBLISHED SOURCES

Despatches

- ALEXANDER, Field Marshal the Viscount. *The Conquest of Sicily from 10th July, 1943 to 17th August, 1943.* 1948. H.M.S.O.
- *The Allied Armies in Italy from 3rd September, 1943 to 12th December, 1944.* 1950. H.M.S.O.
- CUNNINGHAM, Admiral Sir ANDREW B. *Operations in connexion with the Landings in the Gulf of Salerno on 9th September, 1943.* 1950. H.M.S.O.
- MAITLAND WILSON, General Sir H. *Operations in the Middle East from 16th February, 1943 to 8th January, 1944.* 1946. H.M.S.O.

Books

- BRADLEY, General OMAR N. *A Soldier's Story of the Allied Campaigns.* 1951. Eyre & Spottiswoode.
- BUCKLEY, CHRISTOPHER. *Road to Rome.* 1945. Hodder & Stoughton.
- *Five Ventures.* 1954. H.M.S.O.
- CHURCHILL, WINSTON S. *The Second World War.* Vol. V. 1952. Cassell.
- CLARK, General MARK. *Calculated Risk.* 1951. Harrap.
- COPE, Sir ZACHARY. *Official History of the Second World War. Medicine and Pathology.* 1952. H.M.S.O.
- *Surgery.* 1953. H.M.S.O.
- DE GUINGAND, Major General Sir FRANCIS. *Operation Victory.* 1947. Hodder & Stoughton.
- EISENHOWER, General DWIGHT D. *Crusade in Europe.* 1948. Heinemann.
- FERGUSON, B. *The Black Watch and the King's Enemies.* 1950. Collins.
- FOLEY, C. *Commando Extraordinary.* 1954. Longmans.
- GREEN, F. H. K. and COVELL, Major General Sir GORDON. *Official Medical History of the Second World War. Medical Research.* 1953. H.M.S.O.
- KIPPENBERGER, Major General Sir HOWARD. *Infantry Brigadier.* 1949. O.U.P.
- LINKLATER, ERIC. *The Campaign in Italy.* 1951. H.M.S.O.
- LOCKHART, B. *The Marines were there.* 1950. Putnam.
- MACLEAN, FITZROY. *Eastern Approaches.* 1949. Jonathan Cape.
- McKINNEY, J. B. *Medical Units of 2 N.Z.E.F. in Middle East and Italy.* 1952. War History Branch, Department of Internal Affairs, Wellington.
- MONTGOMERY, Field Marshal the Viscount. *El Alamein to the river Sangro.* Hutchinson.
- MORE, JASPER. *The Land of Italy.* 1949. Batsford.
- PENIAKOFF, Vladimir. *Private Army.* 1950. Jonathan Cape.

- RICHARDS, W. and SAUNDERS, H. ST. G. *Royal Air Force 1939-45*. Vol. 2. 1954. H.M.S.O.
- ROSS, J. A. *Memoirs of an Army Surgeon*. 1948. Blackwood.
- SALMOND, J. B. *The History of the 51st Highland Division*. 1953. Blackwood.
- SAUNDERS, HILARY ST. G. *The Green Beret. The Story of the Commandos*. 1940-45. 1949. Michael Joseph.
- *The Red Beret. The Story of the Parachute Regiment*. 1940-45. 1950. Michael Joseph.
- WILSON, Field Marshal Lord. *Eight Years Overseas, 1939-45*. 1948. Hutchinson.

Papers published in the Journal of the Royal Army Medical Corps and other medical journals.

UNPUBLISHED SOURCES

War Diaries, Quarterly Reports and other official documents.

Letters from officers of the Army Medical Services.

Provisional narratives prepared by the Historical Section of the Cabinet Office.

*Provisional narratives prepared by the Canadian, Indian and New Zealand official medical historians.**

*In the interval between the writing and the publication of this volume there appeared:

Feasby, W. R. *Official History of the Canadian Medical Services. Organization and Campaigns*, 1956.

Stout, T. D. M. *Official History of the New Zealand Medical Services in the Middle East and Italy*. 1956.

PREFACE

DURING the period bridged by this volume the development of the Army Medical Services reached its highest point, and on their performance during the campaign in Italy their efficiency can fairly, and perhaps best, be judged. In Italy practically all the factors of major importance in disease causation in an army were encountered. There was the mingling of many large groups of men from widely separated parts of the world and from widely different social structures, each with its own peculiar strains of pathogenic micro-organisms, its own immunities and susceptibilities. Each was a potential source of danger to the rest. The army moved amid a teeming population, the social and economic life of which had been disrupted by war. The Italian people, living in their war-damaged villages and hill-towns, were suffering from the diseases of privation, overcrowding and insanitation. Among them malaria, venereal diseases, dysentery and enteric were rife and typhus not unknown. They thus constituted a reservoir of grave danger to the troops. In large areas of the country through which the army moved the dreaded mosquito flourished. The range of temperature was wide, from the bitter cold of winter to the torrid heat of the southern summer. The troops were exposed to long spells of snow and torrential rain and their endurance was thoroughly tested as they fought their way across swollen river and mountain top. Italy was so far away from the countries of their origin and the situation so critical that they could not, during their infrequent leave, return thereto and refresh themselves in the company of their own people. Far too many of them had been overseas too long and so had become prone to those diseases in the causation of which weariness of spirit and nostalgia play their parts to give rise to a growing disregard of self-care and of active self-protection against disease.

There were critical periods but no disasters. The campaign took the form of a series of bitterly contested battles which yielded large numbers of casualties. The terrain and the weather combined to make the evacuation of these frequently very difficult and on occasion temporarily impossible. Those from the Western Desert rediscovered the value of the stretcher-bearer.

So it was that in Italy the quality of the Army Medical Services was thoroughly tested. It is safe to say that had there been any serious inefficiency the underlying fault would have been clearly revealed. Indeed, gross inefficiency on their part could have changed the course

of the campaign, for the antagonists were, on the whole, fairly evenly matched and any considerable unilateral man-power wastage through uncontrolled disease or through the mismanagement of the facilities for treatment and repair could have turned the scale.

By this time the Army Medical Directorate of the War Office had become thoroughly practised in the control of the large and complex administrative machinery that had been created. Sir Alexander Hood, the Director General, had amply justified his selection and had shown that the heavy burden of responsibility that he was called upon to shoulder was well within his exceptional capacity. He had earned and retained the complete confidence of his military superiors, of his immediate colleagues and of the medical profession at large. Around him he had gathered, as heads of directorates and branches, a band of men and women who had abundantly displayed their worth. The large consultant group, on whom he so greatly depended and to whom the civilian past and future seemed equally remote, now thought and acted in accord with the peculiar responsibilities of an army medical service in war-time. The Director General had built up a team and, leading it, had endowed it with his own qualities.

The task that had been accomplished was that of creating and directing an organisation that would ensure that to the individual soldier and auxiliary, wherever he or she might be, the very best possible medical, dental and nursing care could be and would be provided. In the field there were large numbers of men and women, commissioned and otherwise, who had seen much and varied service from which they had greatly profited. The whole machinery was now working in top gear and smoothly.

By 1944 the Army Medical Services had become such that it could be stated without fear of contradiction that never before, either in war or in peace, had everything that medicine had to contribute to the promotion of health, to the prevention of disease and to the treatment of disease and of injury, been as easily and as readily available to the individual member of a community as was the case in Italy (and other theatres of war not too dissimilar thereto).

The stimulus exerted by the urgent needs of a nation at war had evoked much development and much exploitation. Significant developments had occurred in most of the branches of medicine and knowledge concerning the newer techniques, methods of treatment, drugs and insecticides had become widely disseminated through the Army Medical Services. These new and potent drugs and insecticides were now available in quantity and had endowed the Army Medical Services with greatly enlarged powers. The power to control infection, to keep the mosquito at bay, to mitigate the effects of dysentery and venereal diseases and to shorten the periods of disability due to these diseases

was now possessed. For the most advantageous exploitation of this power new medical units were required. These had been designed and were available in adequate numbers. Improvements in the education of the soldier in matters relating to his health and to its preservation had done much to secure his essential co-operation.

These were all factors which brought many innovations into medical tactical planning. In the Italian narrative it can be seen that D.Ds.M.S. corps and A.Ds.M.S. divisions had attained a high degree of competence in the utilisation of the instruments placed in their hands, of aircraft, of stretcher-carrying jeeps, D.U.K.Ws., 'fantails' and the like for the evacuation of casualties, of specialist teams, field dressing stations, field surgical and field transfusion units and of psychiatric teams for the treatment of battle casualties, and in the most advantageous employment of mobile dental units, venereal disease treatment centres and teams and malaria control units. Most of that which was routine and commonplace in Italy had had its beginnings elsewhere and long before. Its slow development had taken place during the course of every campaign from France and Belgium 1939-40 onwards. To this development many and much had contributed. The war was to end in 1945. Since between the time when first a need is recognised and the time when it is adequately satisfied there inevitably is a long interval, it was to be expected that by mid-1944 all developments of a major kind affecting the Army Medical Services during the war had already been exploited.

In the construction of the Sicilian and Italian narratives very extensive use has been made of Eric Linklater's *The Campaign in Italy*. Indeed, very many of the sketch maps in this volume are the very ones that first appeared in that book. To Dr. Linklater acknowledgment is made and thanks offered for the permission given to make use of them. It is hoped that in reading this book the author of this volume did not at the same time become so enamoured of the beauty of the prose with which this information was clothed that he now stands in danger of the charge of plagiarism. Should he be found guilty he can only plead that his enjoyment of the book was too great.

In connexion with the narrative dealing with the seizure and loss of Cos and Leros the author gladly acknowledges his indebtedness to Colonel P. J. May, T.D., O.B.E., who commanded 161 Field Ambulance, was taken prisoner, sailed on the *Gradisca* and was rescued by the Royal Navy. A copy of the report that he compiled at the time formed the basis of this narrative.

The Sicilian and Italian narratives, in so far as their medical aspects are concerned, owe much to Major General Sir Ernest Cowell who served as D.M.S., A.F.H.Q. It was he who supplied the information relating to the A.F.H.Q. contributions to the medical planning.

To Major General Sir Treffry O. Thomson the author is indebted for much guidance and help in the preparation of this volume. It is hoped that with its final form he will not be dissatisfied.

To Dr. Feasby, Colonel Stout and Lieutenant Colonel Raina, the authors of the official Canadian, New Zealand and Indian Medical Histories, the author is once more greatly indebted, for it is from their volumes, published or unpublished, that all that in this volume relates to the affairs of the Canadian, New Zealand and Indian Army Medical Services derives. To Brigadier du Plessis of the Union Defence Force the author is indebted for a copy of the quarterly reports of the A.D.M.S. of South African 6th Armoured Division in Italy. Without this the narrative would have remained most incomplete.

Again the author wishes to express his sincere gratitude to the members of the staffs of the Historical Section of the Cabinet Office and of the office of the Editor-in-Chief of the Official Medical History. Without their constant help this volume could not possibly have been written and made ready for the press. They made the writing of it enjoyable and even the proof-reading tolerable.

It is necessary to repeat the warning given in the preface to the first of these campaign volumes. Too much reliance should not be placed upon the accuracy, in respect of detail, of the condensed accounts that are given herein of the operational aspects of the campaigns. The only sure source of information concerning these is the Official Military History. The volumes of this that deal with the campaigns in Sicily and Italy are not yet available.

F. A. E. C.

Edinburgh.

1954.

CHAPTER 1

THE CAMPAIGN IN SICILY

July 9–August 17, 1943

PRÉCIS

AT the Casablanca conference in January 1943, it was decided by the President of the United States, the Prime Minister of Great Britain and the Combined Chiefs of Staff that, following upon the successful termination of the North African campaign, the Allied forces should next be employed in the conquest of Sicily (Operation 'Husky'). The forces to be involved were U.S. Seventh and British Eighth Armies.

As a preliminary step to the invasion of Sicily, the fortified island of Pantellaria was subdued by prolonged air bombardment and occupied by 1st Division on June 11.

On July 9, airborne troops were dropped south of Syracuse (British) and on the high ground above Gela (U.S.). Early on the 10th the seaborne divisions landed, the Americans between Scoglitti and Licata, Eighth Army on both sides and on the tip of the Pachino peninsula. No serious resistance was encountered and Pachino, Syracuse, Gela and Licata were quickly entered.

Resistance then stiffened but was overcome and the advance continued. Aided by further airborne and seaborne landings of parachute troops and commandos, Eighth Army soon reached the line of the River Simeto near the coast and further inland pressed northwards through Vizzini, Piazza Armerina, Valguarnera towards Leonforte. The Americans advanced rapidly in two directions, inland northward towards Enna and along the south coast to Porto Empedocle and Agrigento. Soon the whole of the western third of the island, including the capital, Palermo, was in American hands.

The Axis forces withdrew into the north-east corner of the island to stand on the general line, the coast about half-way between Cefalu and Messina—Mistretta—Adrano—Regalbuto—Catenanuova, at the foot of the strong natural fortress, the hill town of Centuripe—along the river Dittaino—the Gerbini airfields—along the River Simeto—the coast about three miles south of Catania.

Enna fell to the Americans on July 20, Leonforte to the Canadians on the 22nd. U.S. Seventh Army then began to move to the east along two axes, along the north coast road, Palermo—Cefalu—Messina, and along the highway further inland from Petralia through Nicosia, Troina and

Randazzo. Nicosia was entered on the 28th, Cerami on the 31st, as was also S. Stefano on the coast road. Agira fell to the Canadians on the 27th.

78th Division, which had had experience of fighting in similar hilly country, was brought across from Tunisia to enter the line in front of Catenanuova, which was captured on July 30. The division then stormed Centuripe, which was finally secured on August 2. Meanwhile the Canadians had entered Regalbuto and the Americans were engaged in bitter fighting at Troina. It was not until the 6th that Troina was finally captured. Along the coast road the Americans entered S. Fratello and S. Agata on the 8th and reached Cape Orlando on the 12th.

Thus the Axis defensive line was broken. The withdrawal towards Messina and thence across the Strait to the Italian mainland was proceeding. Pressing hard upon the heels of the withdrawing Axis forces, U.S. Seventh and British Eighth Armies moved on Messina, which was entered on August 17. The task assigned to them had been completed in the brief space of thirty-eight days.

(i)

Preparation

STRATEGIC AND OTHER CONSIDERATIONS

It was decided at the Casablanca conference in January 1943 that after the successful conclusion of the fighting in North Africa, a composite American and British force should invade Sicily. A planning staff, which included representatives of the medical section of A.F.H.Q., was immediately brought into being at Algiers.

It was considered to be impracticable for the Allies to mount an invasion of North-West Europe from England in 1943 and it was the opinion of the Chiefs of Staff that the campaign in Africa would be concluded by the end of April. Then large numbers of men and a considerable quantity of shipping would become available in the Mediterranean area. By using them during the good campaigning weeks of summer against the Axis southern flank, Germany would be forced to divert troops from the Russian front and thus Russia would be aided.

Sicily was well within the reach of the Allies in North Africa. Malta was but fifty-five miles to the south, while the Tunisian coast was less than a hundred miles away. Operation 'Husky' would not impede the maturation of Operation 'Overlord' (the invasion of North-West Europe) since it would not demand large forces and would not consume much time.

The expulsion of the Axis forces from the southern shore of the Mediterranean would go far to re-open this sea to Allied shipping. The occupation of Sicily would be a further step towards gaining the com-

plete mastery of this vital sea-passage. Sicily, being occupied, would provide a spring-board from which subsequent operations against the mainland of Italy could be launched.

The events in North Africa were having profound effects in Italy. It seemed probable that under the impact of a further military defeat the Fascist régime would crumble. Should this happen great encouragement would be given to all those who in the Balkans were opposed to German domination.

THE TERRAIN

Sicily is the largest of the Mediterranean islands (9,935 square miles). Its greatest length is 145 miles and the greatest breadth 110 miles. Its coastline consists of a series of wide sweeping bays with sandy or shingle beaches separated one from the other by prominent capes. The narrow coastal belt in most parts sweeps upward to the interior with a gentle gradient. The western half of the island consists of rolling plains. In the eastern part, under the shadow of the majestic snow-capped Mount Etna (10,742 ft.), lies the Catania plain with its lemon yards, orange groves and silvery plantations of olive trees, twelve miles wide and eighteen miles long from west to east. In the centre hinterland the landscape is rugged and mountainous. There are many rivers, most of them, however, becoming mere trickles during the summer which is hot, dry and dusty. The sirocco can yield shade temperatures of around 110° F.

Road and rail communications encircled the island. Branches ran therefrom to the main towns of the interior. A ferry service linked Messina with the mainland two miles away across the Strait of Messina. The main ports are Palermo, Syracuse, Messina, Trapani, Augusta and Catania. Many groups of airfields had been developed, the chief ones being at Catania in the east, at Pachino in the south-east and at Sciacca in the west.

The population, numbering about 4,000,000, is mainly engaged in agriculture. The island's chief industries are sulphur and asphalt mining, fishing and the manufacture of agriculture products. The typical town or village, densely crowded, is perched high on the side or crest of a hill and is the dormitory of the peasants who till the soil of the valleys. The narrow road, usually of the secondary class, twists its tortuous way up the hill, through the town and down to the valley again. In the early morning and again as dusk gathers, it is thronged with cavalcades of donkeys, mules, horses and gaily carved and painted carts, heavily laden with loads of humanity and in the evening with the products of the soil as well. In the main street of the town and village, the considerable numbers of animals of economic importance provide an abundance of excrement and dust.

MEDICAL INTELLIGENCE

In February, C.A.O., A.F.H.Q., asked D.M.S., A.F.H.Q. for a medical appreciation in connexion with the projected operation, to be furnished within two hours and without reference to any of his staff. D.M.S. offered suggestions concerning the order of battle for medical units and notes upon matters likely to affect the health of the troops. He made the following observations:

Water. The supply is scanty. No rain may be expected from May to October. In the initial stages (of Operation 'Husky') all water should be hand-carried in 2-gallon containers (British) or 5-gallon containers (U.S.). The British containers should be rendered rust-proof by spraying. All assault troops should be issued with tablets for individual water sterilising in addition to the normal provision of bulk water-sterilising apparatus. An allowance of two gallons per head per diem should be made for the assault phase. Strict water discipline should be enforced.

Prevalent Diseases. Intestinal diseases. Diarrhoea, typhoid and paratyphoid are of primary importance. All troops should be protected by T.A.B. inoculation. Diarrhoea and dysentery, due to water and food contamination, can be prevented by good discipline and strict field hygiene.

Insect-borne diseases may be expected, including malaria (B.T. April till autumn, M.T. till November), sandfly fever (May to October), leishmaniasis (summer). Typhus is not expected but precautions should be taken. Atebrin (mepacrine) is recommended to be given (0.1 gramme tablet to all troops six days a week, to be commenced one week before landing). Sandfly fever may be minimised by avoiding ruins as troop quarters. A.L. 63 Powder should be issued to all troops until bathing facilities are established. Leishmaniasis: the troops should keep away from children and dogs should be destroyed.

Venereal diseases. Precautions will be required at a later date.

Clothing. Tropical clothing: retention of cardigan and overcoat for nightwear; sunglasses; no topees.

Sick Rate. A daily sick rate of 2 per 1,000 should not be exceeded if the above recommendations are carried out.

FORCE '141'

The force to be used would be Force '141' (later to be known as 15 Army Group)*. Its commander (land forces) would be General Alexander, deputy to General Eisenhower. Force '141' would be a composite one consisting of U.S. Seventh Army (Force '343') under

* 141 happened to be the number of the room in the St. George Hotel, Algiers, in which the planning staff first met. Fifteen is the sum of the numbers of the two armies that were involved, U.S. Seventh and British Eighth.

the command of General Patton (Western Task Force) and the British Eighth Army (Force '545') with two new divisions, Canadian 1st and British 5th, under General Montgomery (Eastern Task Force). (The Order of Battle of Eighth Army is given in Appendix I and the Medical Order of Battle in Appendix II.)

It was understood that at this time there were in Sicily some four Italian field divisions, five Italian coastal defence divisions (some 275,000 Italian troops in all) and two German divisions, 15th Panzer Grenadier and the Hermann Goering (some 75,000 in all and concentrated at Castelvetro, Canicatti, Niscemi and Misterbianco).

THE TACTICAL PLAN—OPERATION 'HUSKY'

- Phase 1. The establishment of superiority on the sea and in the air.
- Phase 2. The capture of the airfields at Pachino, Comiso, Biscari, Gela and Licata and the ports of Syracuse and Licata by a seaborne assault aided by airborne landings.
- Phase 3. The establishment of a base from which to conduct further operations for the capture of the ports of Augusta and Catania and the Gerbini group of airfields.
- Phase 4. The capture of the ports and airfields mentioned in Phase 3.
- Phase 5. The reduction of the rest of the island.

EASTERN TASK FORCE

Phase 1 of the Assault

- (a) 1st Airlanding Bde. Gp. would land to the west of Syracuse during the late evening of D-day—1, capture the Ponte Grande over the River Anapo, the railway station and the seaplane base and secure the approaches to Syracuse.
- (b) In the early hours of D-day, S.R. Sqn., coming by sea, would land in the same area and destroy the coastal batteries.
- (c) 5th Division, landing on beaches Acid North and Acid South (at the level of Cassibile), would assault with two brigades plus 3rd Comando and capture Cassibile and Syracuse.
- (d) 50th Division, landing on beach Acid South (at the level of Avola), would assault with one brigade and capture Avola.

XXX Corps

- (a) Canadian 1st Division would land on beach Bark West, on the western side of the base of the Pachino peninsula, and capture Pachino airfield. The Special Service Bde. (40th and 41st Cdos.) would land on the left of the Canadians.
- (b) 51st Division would land on beaches Bark East and Bark West, south and south-west of Pachino, and move on Pachino.
- (c) 231st Inf. Bde. would land on beach Bark East, north and south of Marzamemi, and move inland.

Phase 2

XIII Corps

- (a) 5th Division would seize Augusta.
- (b) 1st Para. Bde. would seize the Primosole Bridge over the River Simeto (12 km. south of Catania).
- (c) 5th and 50th Divisions would occupy Catania.

XXX Corps

- (a) Canadian 1st Division and 51st Division would move northwards and secure the Noto-Rosolini-Ispica road.

Phase 3

XXX Corps

- (a) 51st Division would occupy Palazzolo and Canadian 1st Division Ragusa.

THE BEACH BRICK

The beach brick or group was an organisation specially designed for the purpose of administering the affairs of a landing beach during the assault stage of an operation until the arrival, about D-day+6, of the personnel of the sub-area who would then replace those of the brick. A brick consisted of some 2,000 officers and O.Rs. and included a brick battalion and an A.A. Bty. together with representatives of the different services. The brick, landing on the heels of the assaulting troops, made arrangements for the siting of dumps, dressing stations, casualty embarking points, etc., and facilitated in all possible ways the disembarkation and onward passage of troops, equipment and stores. The composition of the medical section of a brick (M.E. establishment) was as follows :

- (a) S.M.O. (Major, R.A.M.C.), clerk and D.R. with m/c.
- (b) Brick medical section. 2 medical officers and 40 O.Rs. (including in the case of Operation 'Husky', since Eighth Army contained both Indian and African personnel, one I.A.M.C. officer and 16 Indian O.Rs.); 2 sergts., sanitary, and 3 drivers. The equipment of a medical section consisted of two medical officers' outfits and that of a section of a light field ambulance, much augmented in respect of G.1098 equipment, drugs and tentage.
- (c) Brick battalion medical officer, medical orderly and 21 regimental S.Bs.
- (d) Brick Lt. A.A. component, medical officer and 5 O.Rs.
- (e) Two four-wheel-drive ambulance cars.

The North African establishment for a brick medical section was one field ambulance less one company, the commanding officer to serve as S.M.O.

3rd Baluch. Regt. and 3rd Royal F. F. Regt., in Egypt, received

orders in April 1943 to form a number of independent companies for employment in beach bricks. The Baluchis formed 60th, 61st, 62nd, 63rd and 64th Companies and the Frontier Force Regt. 65th, 66th, 67th, 68th, 69th, 73rd and 74th. These companies were attached as follows :

60th, 61st & 62nd Indep. Coys.	to 31st	Brick at Kabrit
65th, 66th & 67th	„ „ „ 32nd	„ in Palestine
68th, 69th & 74th	„ „ „ 33rd	„ in Palestine
63rd, 64th & 73rd	„ „ „ 34th	„ at Kabrit

After intensive training :

31st Brick was attached to 231st Inf. Bde.
 32nd and 33rd Bricks were attached to 5th Division
 34th Brick was attached to 50th Division

Following the landings, and when areas and sub-areas had been established, the beach bricks ceased to function and the independent companies joined H.Q. 3rd Baluch. Regt. which reached Sicily from Egypt on August 27.

The medical services of the Army were responsible for the care of all casualties of whatever Service occurring on land. The S.M.O. beach brick, landing with the officer commanding the brick, administered all brick medical units, acted as medical adviser to the officer commanding the brick, helped all medical units passing through, organised the collection and distribution of medical stores and supervised the evacuation of casualties from the beach.

The brick battalion medical officer established his R.A.P. in the dump area. The A.A. medical officer formed a second R.A.P. in this area or else was held in reserve by the S.M.O. The brick medical section established one or more dressing stations on the maintenance beach, near to but outside the target area. The field ambulance which accompanied the assault troops established a M.D.S. on the beach on a site selected by the S.M.O. This light field ambulance landed at full strength, at scale B (personnel 126, vehicles 15) or at scale C (personnel 154, vehicles 38), according to the circumstances. Attached to the field ambulance was one or more F.S.U.s. (1 surgeon, 1 anaesthetist and 2 operating-room assistants). Casualties were evacuated from R.A.P. and beach dressing station to M.D.S. or C.C.S.

A light section of a C.C.S. landed, if possible, on D-day+1 and relieved the field ambulance which, being so freed, became available for further forward movement. By D-day+3 a field hygiene section came ashore to assume responsibility for the sanitary arrangements of the beach. During the first week a detachment of a M.A.C. and an advanced depot of medical stores disembarked. The organisation and deployment of a typical beach brick are illustrated in Fig. 1.

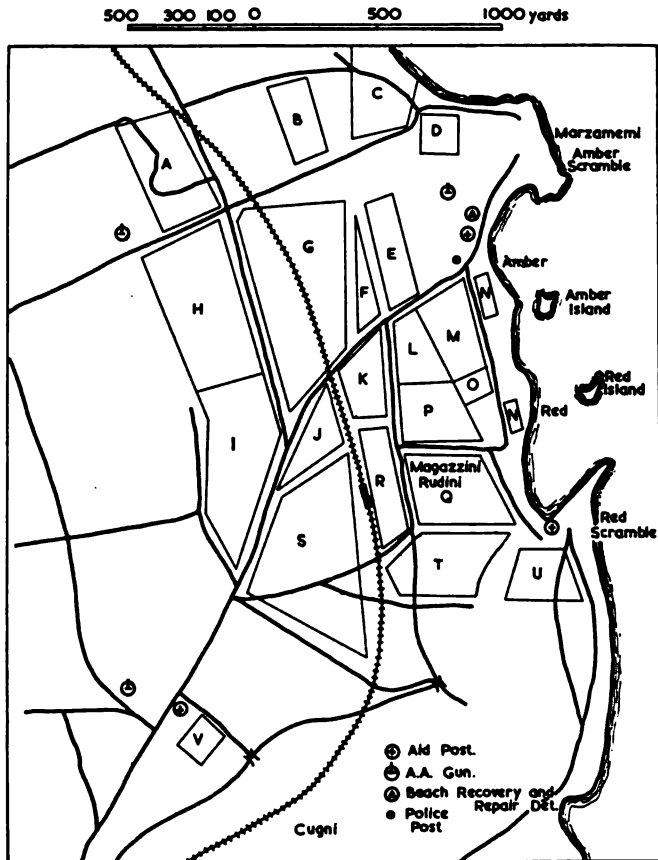
31 Beach Brick with 231 Infantry Brigade at Marzamemi

FIG. 1. The Layout of a Beach Brick.

- | | |
|--------------------------------|---------------------------------|
| A. Detail Issue Depot (D.I.D.) | L. Sundry Stores Dump |
| B. Defence Company | M. Assembly Area |
| C. Bivouac Area | N. Drowned Vehicle Park |
| D. P.o.W. Cage | O. Beach H.Q. |
| E. Engineers' Store | P. Beach Supply and Water Dump |
| F. D.I.D. (P.O.L.) | Q. Beach Ammunition Dump |
| G. M.T. Assembly Area | R. Beach Ordnance Stores |
| H. Ordnance Base Depot | S. D.I.D. Supply and Water Dump |
| I. " " (Ammunition) | T. Airfield Group |
| J. Stragglers' Post | U. Bivouac Area |
| K. Brigade Stores | V. M.D.S. |

CANADIAN 1ST DIVISION PREPARATIONS

Canadian 1st Division, in the United Kingdom, was far removed in space from the places where planning for Operation 'Husky' was

proceeding and where the other divisions that were to share in this adventure were undergoing preparation. The division had no medical representative at H.Q. XXX Corps.

The divisional medical units underwent special training at the Combined Operations Training Centres at Inveraray and elsewhere. Great attention was paid to the distribution of medical personnel, stores and transport among the ships of the fast and slow assault convoys and among the follow-up convoys. But it would seem that far too little attention was given to the needs of the division in respect of advice and help concerning malaria.

D.D.M.S. XXX Corps spent twelve days with the division early in June. He found that though everybody was to receive one mepacrine tablet daily at sea for six days prior to D-day, no adequate provision had been made for continuing this treatment ashore, the first follow-up supply of mepacrine being due to arrive on D-day+3 and to be unloaded an indefinite number of days thereafter. This was remedied but the anti-malaria defences of the division remained very deficient. A malaria officer was sent to the division from the M.E. but only joined the division three days before it embarked. Three malaria control units were hurriedly formed, eight medical officers were given special instruction and every unit in the division was instructed to appoint an anti-malaria officer. Three combatant officers and three N.C.Os. were sent to the Army School of Hygiene to attend a course of instruction. But these measures were adopted far too late, and though much instruction was given during the voyage the division, landing in Sicily, was not prepared for the inevitable encounter with the hazard of malaria.

Thirteen R.C.A.M.C. units with a total strength of 305 officers and 1,484 O.Rs. embarked for Sicily.

The Canadian estimate of casualties was :

D-day - D-day+6	.	.	.	3,200
D-day+7 - D-day+14	.	.	.	1,500
Weekly thereafter	.	.	.	875

Three ships of the slow assault convoy were sunk by enemy action off the North African coast on July 4 and 5 with the loss to 9 (Cdn.) Fd. Amb. of 4 O.Rs. R.C.A.M.C. killed and 4 wounded. Considerable quantities of medical unit transport, equipment and stores were also lost.

A.F.H.Q. MEDICAL PLANNING IN CONNEXION WITH EASTERN TASK FORCE

During June 1943, hospital ships had cleared 1,139 long-term cases to the United Kingdom. Since reinforcements of O.Rs. R.A.M.C.

were not to be expected, selected Italian orderlies were employed in the hospital wards. Since it was not practicable to evacuate large numbers from Sicily direct to Algiers, 700, to Oran, 850, or to Casablanca, 1,300 miles away, a series of British forward hospital centres 250-400 miles away at Sousse, Tripoli, Bone, Philippeville, El Arrouch and Tunis was established near to the airfields and ports.

At the end of the Tunisian campaign new administrative areas were established :

		<i>Hospitals</i>		
		<i>Beds</i>	<i>Occupied</i>	<i>Vacant</i>
Tunisia District				
Sousse S.A.	70 B.G.H.	600	298	302
	71 "	600	404	196
	98 "	1,173	746	427
Tunis S.A.	97 "	1,202	1,172	30
Bone area				
Bone	5 "	1,481	1,481	0
Merjerda Area				
Thibar	83 "	200	80	120
	50 "	300	195	105
Philippeville Area				
Philippeville	100 "	1,485	1,245	240
	67 "	950	754	196
El Arrouch	104 "	1,380	551	829
	15 Cdn.*	1,200	—	1,200
Bougie Area				
Bougie	69 B.G.H.	800	598	202
Reception Station	"	60	42	18
Setif	" "	60	41	19
Constantine Area				
Oued Athmenia	31 "	800	537	263
Guelma	76 "	600	391	209
Mechta Chateaudun	103 "	1,207	953	254
Souk Ahras	72 "	600	550	50
Algiers Area				
Algiers	94 "	1,975	1,761	214
	95 "	2,019	2,019	0
	96 "	2,000	1,697	303
	99 "	1,600	942	658
		22,292	16,457	5,835

* 15 Cdn. G.H. (1,200 beds) and 1 (Cdn.) Con. Depot sailed from the U.K. in the fast convoy on July 1 and were disembarked at Philippeville. The hospital proceeded to El Arrouch.

Convalescent Depots

Officers' Wing	126	100	26
8 and 9 Con. Depots	2,500	2,312	188
10 Con. Depot	1,900	615	1,285
1 Canadian Con. Depot	1,000	0	1,000
	<hr/>		
	5,526	3,027	2,499
Grand Totals	27,818	19,484	8,334

Other beds which could be used if necessary were 2,400 at Tripoli, 1,800 at Malta and 500 at Gibraltar. Tentative arrangements were made with the French authorities whereby 2,000 beds in French hospitals in North Africa could be made available. At this time there were some 1,254 cases awaiting evacuation to the United Kingdom by hospital ship.

At the end of the Tunisian campaign 70 and 71 B.G.Hs. were moved from Thibar to Sousse, 76 from Bone to Guelma, 83 from Le Krib to Thibar, 97 from Guelma to Tunis and 98 from Mechta Chateaudun to Sousse.

Since medical units of M.E.F. were to be involved in Operation 'Husky', D.M.S., A.F.H.Q., visited D.D.M.S., M.E.F., Cairo, in February and June. Agreement was reached concerning the evacuation plan, movements of hospital ships and the transfer of medical units to A.F.H.Q.

HOSPITAL SHIPS AND CARRIERS

Until the airfields in Sicily had been taken over and were in full use, all evacuation from the island would be by sea. In addition to H.Ss. *Amarapoorra*, *Newfoundland* and *Oxfordshire*, already at the disposal of A.F.H.Q., the following ten hospital ships and five hospital carriers were in the Mediterranean in early July ready for the Sicilian adventure :

<i>Hospital Ships</i>	No. of cots	<i>Carriers</i>	No. of cots
<i>Aba</i> (Br.)	484	<i>Dinard</i>	229
<i>Amra</i> (S. African)	411	<i>Leinster</i>	356
<i>Atlantis</i> (Br.)	610	<i>St. Andrew</i>	221
<i>Dorsetshire</i> (Br.)	480	<i>St. David</i>	223
<i>Llandoverly Castle</i> (Br.)	438	<i>St. Julian</i>	208
<i>Somersetshire</i> (Br.)	480		
<i>Tairea</i> (Indian)	483		
<i>Talamba</i> (Indian)	483		
<i>Vasna</i> (Br.)	271		
<i>Vita</i> (Br.)	244		
	<hr/>		
	4,384		1,237
Grand Total	5,621		

EVACUATION BY AIR

D.M.S., A.F.H.Q., arranged with the U.S.A.A.C. that, as soon as possible in this campaign, transport planes returning empty from Sicily would be used for the air evacuation of casualties. Later similar arrangements were made with the R.A.F.

In June 1943, D.A.D.M.S. (Evac.) A.F.H.Q. prepared a memorandum on this subject. The following excerpts are taken from it:

General

Speed and comfort, rare concomitants, are in this form of transport corollaries. By means of it congestion from forward areas to base is relieved.

Staff Control

A. Administration. Three principal links.

1. A.F.H.Q. Medical Section to which all evacuation demands are made by:

- (a) U.S. surgeons of forward formations, II Corps and E.B.S.
- (b) Br. D.A.D.M.S. (Evac.) L. of C.

These demands are sifted and allocations decided daily by Deputy Surgeon (Evac.) A.F.H.Q. and D.A.D.M.S. (Evac.) A.F.H.Q. in consultation and notified to Service Command (Operations) of Air Transport Command, U.S.A.A.C.

2. Service Command U.S.A.A.C. which controls the freight-carrying aircraft used as air-ambulances. The number of planes released for evacuation purposes on the following day is notified, together with the times available. This information is passed on to L. of C.
3. 802 Med. Evac. Sqn., U.S.A.A.C., which is responsible for the medical aspects of air evacuation. This Sqn. has no aircraft of its own. It has the following composition:

M.Os. (qualified pilots)	6
Nurses (including chief nurse)	26
Orderlies (enlisted men) with medical and ordnance equipment	76

B. Intercommunication.

1. D.A.D.M.S., L. of C., at R.H., in touch with A.F.H.Q. and in control of M.A.Cs., co-ordinates the loading of ambulance trains and air ambulance convoys.
2. D.A.D.M.S., A.F.H.Q., informs D.A.D.M.S., L. of C., nightly of the number and times of the available planes.
3. D.A.D.M.S., L. of C., notifies Os.C. forward hospitals and C.C.Ss. of number and times of planes.

C. General Principles.

1. Ambulance cars to be loaded in 'plane-groups', i.e. 1 plane sitting requires 3 cars of 6 cases each. 1 plane stretcher requires 4 cars of 4 cases each.

2. Clinical documents to be prepared in bundles of plane-groups.
3. Receipts to be given for stretchers, blankets, etc.
4. Close co-operation with O.C. hospital and with the M.O. of the Med. Evac. Sqn. to be maintained.

D. Evacuation.

1. Emplaning. This to be carried out under the supervision of the M.O. Med. Evac. Sqn. Loading to be carried out by Med. Evac. Sqn. orderlies with the help of ambulance car orderlies.
2. Flight. All nursing care to be the responsibility of the Med. Evac. Sqn. personnel. If necessary a M.O. will travel with the plane.
3. Disemplaning. A.D.M.S. Base to arrange car convoys to meet the aircraft. The aerodrome M.O. to allot cases to hospitals. Blankets, etc., to be exchanged.

Medical Layout

802 Sqn. serves the U.S. and Br. components of the Allied Medical Services equally. (There is no equivalent unit in the R.A.F. or Br. A.M.S.) With its H.Q. in Algiers and detachments at Oran, Telergma, Bone and Souk el Arba, the Sqn. has established a highly effective series of evacuation channels. At each forward airfield the Sqn. has a small detachment.

Machines

Troop-carrying Douglas C 47s are used. Each can carry 20 sitting or 16 stretcher cases.

General Observations

The advantages of air evacuation :

- (a) The rapid relief of congestion in areas most in need of it, often possible only by air.
- (b) Adds flexibility to evacuation policy that otherwise would be rigid and ineffective in a theatre in which road and rail facilities are extremely limited.
- (c) Provides a valuable supplement to ambulance trains.
- (d) Is a comfortable and rapid method of travel for serious cases.

Disadvantages :

- (a) Is entirely subject to weather.
- (b) Is expensive in respect of petrol.
- (c) Unless aircraft are specially allotted, the number of machines available is variable and does not always coincide with casualty requirements.

Contra-indications :

- (a) Abdominal cases must wait four to five days after operation.
- (b) Head cases should not travel until two to three weeks after operation.
- (c) Chest cases are deleteriously affected by the height at which the aircraft usually flies.

MEDICAL EVACUATION PLAN

The medical evacuation plan for Operation 'Husky' was sent from A.F.H.Q. to D.D.M.S., L. of C., and D.D.M.S., Tunisia District, on June 22. In outline it was as follows :

1. *General Plan* (in so far as British and Canadian casualties were concerned).

Phase 1. Until the ports were open and receiving hospital ships, approximately D-day + 10, evacuation, except for lightly wounded, would be :

- (a) from 5th, 50th and 51st Divisions by hospital ship to Tripoli;
- (b) from Cdn. 1st Division by hospital carrier and L.S.T. to Sousse.

Phase 2. When ports were open and before hospital bases were established (in Sicily), approximately D-day + 48, all cases over seven days would be evacuated.

- (a) those likely to be fit within three months to Tripoli and the Delta, Canadians to North Africa;
- (b) the rest to North Africa for further evacuation to the United Kingdom.

Phase 3. When hospital bases had been established, cases with an expected duration of stay in hospital in excess of forty-two days would be evacuated as in (a) and (b) in Phase 2.

2. *Implication of General Plan on North Africa.*

North Africa would be prepared to accept casualties from Syracuse as under :

- Phase 1. one-third of the total estimated casualties a day, i.e. 400;
- Phase 2. up to one-fifth;
- Phase 3. up to one-fifth.

3. *Outline Plan.*

Phase 1. Casualties to be cleared from Sousse to Tunis by M.A.C.; from Tunis to Bone and Philippeville by ambulance train and hospital ship.

Phases 2 and 3. Direct evacuation by ship from Syracuse to Bone and Philippeville.

Full particulars were given of the Sousse hospital centre with its 2,400 beds, of the hospital centres at Philippeville, El Arrouch and Bone (5,600 beds), of thirteen equipment dumps containing 6,900 stretchers, 20,750 blankets, 500 warmers and 250 Thomas's splints, and of the distribution of ambulance car transport in Algeria District (260, 74 and 110 M.A.Cs.) and in Tunisia District (112, 88 and 60 M.A.Cs. and one platoon of 110 A.C.C.).

PREPARATIONS IN MALTA *

Malta's rôle in Operation 'Husky' was a twofold one, to accommodate up to 10,000 troops *en route* for Sicily for a period up to fourteen days

* See also *A.M.S. Campaigns*, Volume 1, Chapter 13. Malta.

together with an additional 3,000 R.A.F. personnel for a longer period, and to stage 6,000–8,000 casualties at one and the same time for a short period, possibly 30,000 altogether, on their way from Sicily to North Africa.

St. Paul's Bay was prepared as a hospital port. Jetties were built, labour enlisted for the handling of stores and kits, an ambulance car park constructed and adequate feeding arrangements made. Four hospital carriers were expected to make the seven hours' run twice a day from the Sicilian shore to Malta and six hospital ships to ply between Malta and Tripoli, each making two runs a week, starting about D-day + 5.

On June 1, 33 B.G.H. arrived and on the 16th H.Q. 15 Army Group reached Malta. The Gozo garrison was increased by the addition of American and British air force units and anti-aircraft personnel. From Africa 100 beds, 25 ambulance cars, 15,000 blankets, 8,000 stretchers and 1,000 stomach warmers were sent to Malta. An air evacuation centre was established at Luqa.

The following expansion of medical units was effected :

33 B.G.H.	. . .	1,500 beds
39 "	. . .	900
45 "	. . .	1,200
90 "	. . .	1,600 (2 Basuto secs. attached)
Mil. Fam. Hosp.	. . .	60
15 Fd. Amb.	. . .	730
161 Fd. Amb.	. . .	540
Con. Depot	. . .	1,000

It was decided that 39, 45 and 90 B.G.Hs. should take the serious cases and that 33 should take the rest. 15 and 161 Fd. Amb. were to cater for the local sick and be prepared to hold light cases from the hospital carriers.

But despite all the preparations that were made, Malta was not used at all extensively as a casualty clearing centre. This change of plan created a difficulty for the Canadian medical services. It was the accepted policy that Canadian casualties should, as far as possible, travel along a chain of Canadian medical units. It had been intended that in Malta Canadian casualties would be extracted from the mass and routed to a Canadian hospital. But when it was decided that evacuation from Sicily should be direct to Tripoli, it had to be expected that Canadian casualties in considerable numbers would be transported eastwards to the Delta where there were no Canadian general hospitals. It was arranged therefore that 15 Cdn.G.H. should proceed to El Arrouch and that until this unit was open Canadian casualties should be held in the Tripoli area.

THE CAPTURE OF PANTELLARIA AND LAMPEDUSA—
OPERATION 'CORKSCREW'

Some forty miles south of the mid-point between Cap Bon and the nearest shore of Sicily is a group of small volcanic islands—the Pelagic Islands, Pantellaria, Linosa and Lampion. The first of these had been strongly fortified by the Italians, was guarded by a garrison of some 10,000 men and possessed an airfield. It was necessary for the Allies to seize these islands as a preliminary step towards the invasion of Sicily.

Between May 20 and June 6 the bombers of the North African Air Force stepped up their attacks on Pantellaria and between June 7 and 11 battered it day and night, dropping among the bombs an invitation to surrender. Cruisers and destroyers of the Royal Navy bombarded the small harbour and silenced the majority of the shore batteries.

1st Division embarked at Sfax and Sousse and, under cover of an intense bombardment by the escorting warships and from the air, was lowered into landing craft on the morning of June 11, in perfect weather, eight miles off the harbour. The first flight landed on beaches near the harbour about noon in the face of negligible opposition. The Italian garrison surrendered at 1730 hours.

The bombers promptly turned their attention to the island of Lampedusa, nearly a hundred miles to the south. Cruisers and destroyers followed and on June 12 the island was subjected to an almost continuous battering. In the early evening 'A' Coy. 2nd Coldstream Gds. went ashore in a L.S.I. to accept the surrender of the 4,600 Italians who comprised the island's garrison.

Linosa and Lampion offered no resistance. Thus, without the loss of men, of ships or of time, the obstacles on the invasion path to Sicily were cleared. (*See* R.A.F. Vol. III, Chapter 6, page 388.)

OPERATION 'CORKSCREW.' MEDICAL COVER

The medical units participating in this operation were those of 1st Division—2, 3 and 137 Fd. Ambs.; 23 and 24 F.S.U.s.; 18 Fd. Hyg. Sec. and 8 C.C.S. 3 Fd. Amb. went ashore an hour and a half after the capitulation and established a M.D.S. and an A.D.S. 2 Fd. Amb. followed four and a half hours later and opened an A.D.S. None of the other medical units disembarked. On June 12, A.D.M.S. made a reconnaissance of the Italian hospitals on the island. There were the following :

- (a) a naval hospital, damaged and vacant;
- (b) an air force (underground) hospital with 60 beds, all occupied;
- (c) a naval hospital at San Francesco with 100 beds, 40 occupied;
- (d) a military hospital at San Francesco with 150 beds, 80 occupied;
- (e) a military hospital at Port Scauri with 30 beds, all occupied;
- (f) a civil hospital at Port Scauri with 14 beds, none occupied.

A.D.M.S. handed over to S.M.O. Civil Affairs, who organised a medical service out of the Italian medical personnel on the island. The divisional medical units were withdrawn on June 16.

(ii)

The Invasion of Sicily—Operation 'Husky'

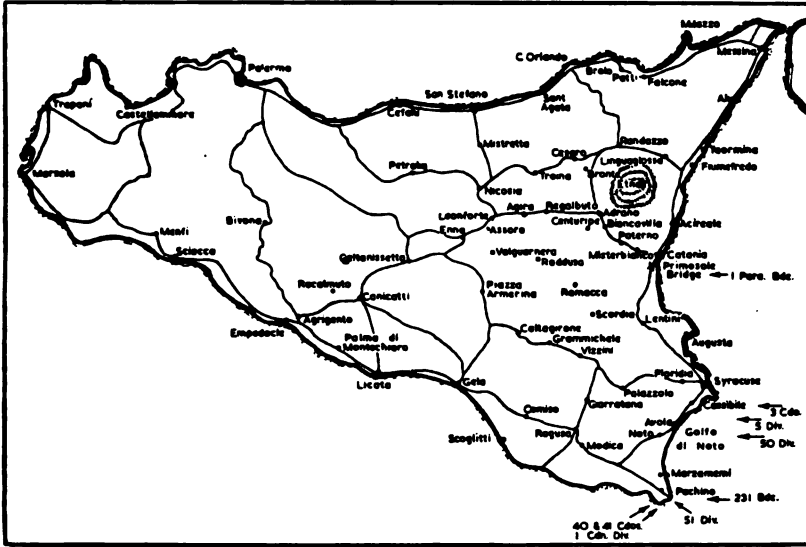


FIG. 2. Sicily.

On the afternoon of July 9, the convoys—more than 3,000 vessels in all—from ports at both ends of the Mediterranean, assembled east and west of Malta, turned towards the Sicilian shore to be greeted by a sudden Mediterranean storm. A force consisting of 350 aircraft and 134 gliders with 4,300 men aboard left Malta and the Tunisian airfields to undertake the first large-scale airborne attack that the Allies had mounted. Visibility was poor and the weather bad. Preliminary bombing had started fires in Sicily and these tended to confuse the pilots. The 220 U.S. troop-carriers heading for Gela scattered their parachutists over a front of 50 to 60 miles. In Eighth Army's sector many of the pilots released their gliders too far from the shore and 47 of them came down in the sea to the south of Syracuse. Only 12 of them landed in their designated area. However, 8 officers and 65 men of 1st Airlanding Bde. did land safely south of Syracuse and went on to seize the Ponte Grande and to hold it until the mid-afternoon of the 10th when sea-borne troops made contact with the survivors, 4 officers and 15 men, and so enabled 5th Division to advance on Syracuse. A handful of the

American parachutists seized a hill above Gela, holding it against German tanks, and greatly facilitated the landing of U.S. Seventh Army on the beaches.

In the early hours of July 10, the seaborne landings took place according to plan. At Licata U.S. 3rd Division met some opposition but on the whole resistance was slight, there being but little response to the storm of fire which the Allied naval units discharged against the shore. Eighth Army made no contact with any German troops or with any of the Italian field divisions. The Italian coastal defence divisions were quickly thrust aside and by midday the Canadian and Highland divisions had captured Pachino and at 2100 hours, 5th Division entered Syracuse, in ancient days the largest of the Hellenic cities and the rival of Athens, Carthage and Rome. U.S. 1st and 45th Divisions entered Gela and Scoglitti and were moving inland while U.S. 3rd Division held an extensive beachhead around Licata and its airfield. On the 10th and 11th, 80,000 men, 7,000 vehicles and 900 guns were landed, under the protection of the fleets and covered by the air forces.

On the morning of July 11, German armour and infantry counter-attacked U.S. 1st and 45th Divisions in the Gela area but were repulsed. U.S. 3rd Division continued to thrust inland, took Comiso and met the Canadians in Ragusa, an astonishing town perched on the lip of a

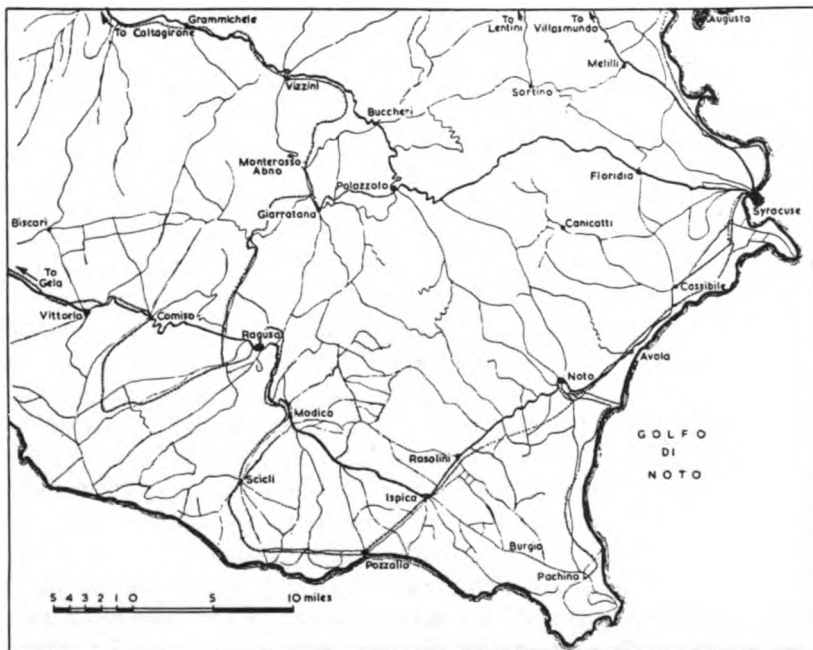


FIG. 3. South-east Sicily.

limestone ravine, terraced with gardens and orchards and pitted with the mouths of ancient rock-tombs.

In the east Eighth Army began to advance in two directions, towards Augusta and north-westwards against Vizzini. Half-way between Syracuse and Augusta 17th Inf. Bde. of 5th Division was checked for a while by German armour and dive-bombers but soon resumed its advance, to enter Augusta in the early morning of the 13th. 15th Inf. Bde. of 5th Division, advancing towards Lentini, took the village of Villamundo. On the night of the 13th the Germans counter-attacked and occupied part of Augusta harbour and separated 15th and 17th Bdes. They were ultimately ejected and withdrew towards the Catania plain. 50th Division, on the left, reached Lentini and Scordia to make contact with XXX Corps which had been moving forward rapidly from the Pachino area towards the centre of the island. 51st Division had taken Noto, an enchanting seventeenth-century town of elegant buildings constructed of a golden buff limestone and situated on a gentle slope, on the 11th, and 23rd Armd. Bde., passing through, had captured Palazzolo on the 12th and moved on Vizzini. 23rd Armd. Bde. and 231st Inf. Bde., veterans of the siege of Malta, entered Vizzini on the 13th but were checked by artillery fire from positions beyond it. On the 14th, 51st Division securely occupied Vizzini and captured Francofonte. Then the Canadians went into the lead to capture Grammichele after a sharp encounter and Caltagirone unopposed. Their next objective was Enna, the centre of the island and the meeting point of its plexus of roads.

While Eighth Army was advancing against the port and airfields of Catania and against Enna and Leonforte, U.S. Seventh Army wheeled westward to hold a line running north from Palma di Montechiaro through Canicatti to Caltanissetta. The Americans, against slight resistance, moved rapidly towards their new objectives. On July 15, U.S. 45th Division reached Vizzini and was then withdrawn behind U.S. 1st Division to attack again in a north-westerly direction towards the high ground between Caltanissetta and Enna. On U.S. Seventh Army's left, U.S. 3rd Division probed to Racalmuto and beyond Canicatti. U.S. 3rd Division and U.S. 82nd Airborne Division were then grouped to form a provisional corps that was to make a swift conquest of the western half of Sicily from which the Axis forces were withdrawing. This Corps on the 16th and 17th entered Porto Empedocle and Agrigento, with its famed remains of the Greek temples of Concord and of Aesculapius, and U.S. 2nd Armd. Division prepared to pass through and drive on to Palermo.

U.S. 45th Division on its way to Caltanissetta had encountered stern opposition. Nevertheless Caltanissetta, a modern town and the centre of the sulphur industry, was entered on July 18 and U.S. 1st Division cut the road between it and Enna.

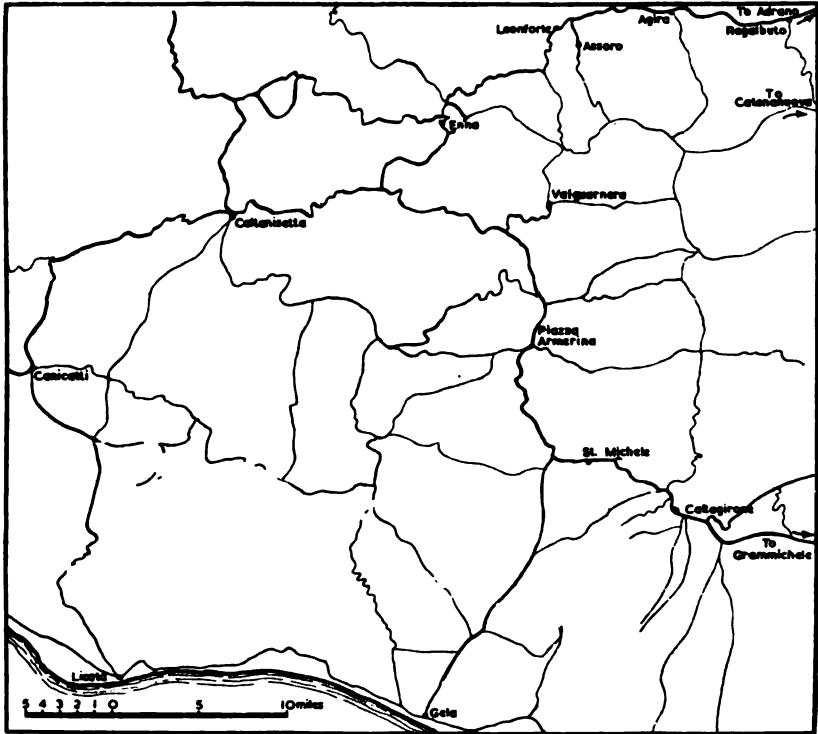


FIG. 4. The Path of the Canadian Division.

Canadian 1st Division, on the left flank of Eighth Army and with 231st Inf. Bde. on its right, had led the advance to Enna through Piazza Armerina and Valguarnera. But it had now become clear that Eighth Army had not the strength to cross the Catania plain and so the Canadians were ordered to by-pass Enna (which was captured by U.S. 1st Division on July 20), advance on the hill towns of Assoro and Leonforte and then turn east to Adrano (Aderno). The Canadians had had a grim struggle during their advance from Caltagirone. The country was mountainous and movement was almost entirely restricted to the roads. The German rearguards were resisting so that the enemy forces in the west and south might extricate themselves and eventually form a line in the north-eastern part of the island.

On the eastern flank of Eighth Army the progress of XIII Corps had been slower. South of Catania were many water obstacles. There were bridges over the Malati and Simeto Rivers that had to be secured. The Malati bridge was three miles north of Lentini. On the night of July 13, while 1st Para. Bde. was dropped to secure the 200-yards-long steel-girdered Primosole bridge over the Simeto at the southern edge of the Catania plain, 3rd Cdo. was landed on the coast west of Lentini to

advance inland and to capture the Malati bridge. The Commando fought its way to the bridge, captured it, but was thrust off it. Nevertheless, the bridge was not blown and was secured when Eighth Army advanced. The Commando lost 5 officers and 23 O.Rs. killed, 4 officers and 62 O.Rs. wounded, and 8 officers and 51 O.Rs. missing in this action and thereafter passed into reserve.

Of the 129 aircraft that transported 1st Para. Bde. from North Africa, 26 returned without having dropped their parachutists. Others were fired on by the ships of an Allied convoy and suffered severely. Fifty-six of the troop-carriers dropped their parachutists and 13 tugs released their gliders in the dropping zone and about 250 men with 5 A/T guns went into action and captured the Primosole bridge. Throughout the 14th they repulsed many fierce counter-attacks but by the evening they were forced to withdraw from the bridge. The Durham Infantry Brigade (6th, 8th and 9th Bns. D.L.I.) of 50th Division was ordered forward from Lentini to relieve them. Late on the 14th the Durhams joined the parachutists a mile south of the bridge. During the night small-arms fire prevented the Germans replacing the demolition charges which the parachutists had removed. Early on the 15th two field regiments arrived to support the attack on the bridge. A battalion of the Durham Bde. attacked at 0730 hours, crossed the bridge but was driven back. Then in the moonlight a second battalion forded the river 400 yards west of the bridge and secured its northern end. Throughout the 16th the Germans prevented all attempts to reinforce and to extend the small bridgehead, but during the night the other battalions of the brigade forded the river and tanks got across the bridge, and by 1000 hours on the 17th those Germans who had not surrendered had retreated and the bridge was at last secure. 1st Para. Bde's. losses in this action were 27 killed and 78 wounded, besides many missing.

But in front of Eighth Army now lay the main strength of the German forces in Sicily and the road to Catania was blocked. However, some progress was made by XXX Corps during the next few days. 51st Division took Ramacca on the 18th, crossed the River Gornalunga and was moving against the Gerbini airfields. Far to its left Canadian 1st Division of XXX Corps had taken the hill-town of Valguarnera. Moving forward between these divisions 231st Inf. Bde. captured Raddusa and on the 18th reached the Dittaino river. By the following day this brigade was within three miles of Agira which was strongly held by the Germans.

The Canadian division, overcoming very strenuous resistance, captured Leonforte on the 22nd. Thereafter it fought its way, almost step by step, towards Agira standing high upon its hill. 231st Bde. cut the Palermo-Catania road to the east of Agira but, being heavily counter-attacked, was forced to withdraw. Twenty miles to the south-east 51st

Division captured most of the Gerbini airfields but here again powerful counter-attacks drove it back to positions south of the airfields. In XIII Corps' sector, 5th Division, to the left of the Primosole bridgehead, had bridged the Simeto and established a small bridgehead on its northern bank. All attempts to extend this were unsuccessful, however.

The advance of Eighth Army had been stopped. The Axis front now extended from a point three miles south of the town of Catania on the Simeto, eastwards through the Gerbini airfields, along the Dittaino, through Catenanuova (in front of Centuripe), Regalbuto, Adrano and Mistretta, to reach the sea half-way between Cefalu and Messina. The bastion of this north-east corner of Sicily was Centuripe, a mountain position of immense natural strength and firmly held.

The terrain in which XXX Corps was now operating conferred every advantage upon the German-Italian garrison which was holding a series of high hills, each crowned with its characteristic town or village, which dominated the whole countryside between Enna in the west and Mount Etna in the east. On the extreme left reared the high ridge on which Enna is perched. This falls precipitously into a valley which separates Enna from the high hills on the summits of which Leonforte, Assoro and Agira respectively are set. Then across another wide valley to the east the eye is irresistibly drawn to Centuripe, a walled village that stands upon the summit of a steeply-terraced mountain crag and is approached by a single road that zigzags from one hairpin bend to the next. In front of Centuripe and at the base of the great hill is Catenanuova. Then away to the east the great mass of Mount Etna rises from the plain, overlooking the whole scene and carrying on its lower slopes the towns of Adrano, Biancavilla and Paterno.

General Montgomery decided not to attempt the taking of Catania by a frontal attack across the Gerbini plain but instead to outflank the German position with an attack from Leonforte to Centuripe and Adrano. He called 78th Division forward from North Africa. It could be in the line by the end of the month. By this time U.S. Seventh Army would be ready for the final assault. U.S. II Corps was to move U.S. 1st and 45th Divisions into line between Leonforte and the north coast while U.S. 3rd and 9th Divisions would be brought forward to provide relief and to give depth to the front. U.S. Seventh Army had also to create a new axis of supply based on Palermo, the capital of the island, for the coming offensive.

So August 1 was chosen for the inception of the final drive to fling the Germans out of Sicily. During the rest of July, as will be recounted, there was continuous fighting but no significant movement save only in the west where the Provisional Corps had taken Sciacca, Menfi and Bivona on July 20. On this day U.S. 2nd Armd. Division passed u/c of

the Corps and at once began its furious drive over the mountains to Palermo, which was entered on the 22nd. Marsala, Trapani and Castellammare all fell without opposition. East of Palermo the coast road was cut by U.S. 45th Division and the western third of Sicily and some 40,000 prisoners were in American hands.

U.S. II Corps now began to move to the east along two axes, along the coast road and along the highway from Petralia through Nicosia and Troina to Randazzo. U.S. 1st Division occupied Nicosia, strangely situated on four great rock surfaces, on July 28 and pressed on towards Cerami. U.S. 45th Division, advancing along the coast road from Cefalu, was checked before San Stefano which did not fall until the 31st, on which day U.S. 1st Division captured Cerami and moved on to get within five miles of Troina, which stands on a lofty plateau and commands stupendous panoramas.

231st Bde. resumed its assault on Agira during the night of July 25/26 while Cdn. 1st Bde. launched an attack from the west of the town. 231st Bde. was again compelled to give up its gains and the Canadians were checked. In the evening of the 26th the attack was resumed by Cdn. 2nd Bde. from the west, but the resistance encountered was both fierce and stubborn and it was not until 0900 hours on the 27th that the town was taken. The way for an advance on Regalbuto had at last been opened. 231st Bde. pushed on towards Regalbuto but was quickly checked. During the night of July 30/31 the brigade attacked again, and again was checked about a mile west of the town.

78th Division, now in the line in front of Catenanuova and with Cdn. 3rd Bde. under command, captured the town by the early morning of the 30th.

Both Eighth Army and U.S. Seventh Army were now in position for the final assault. On August 1 the attack opened. 51st Division crossed the Dittaino and in the face of stern opposition advanced to within six miles south-east of Catenanuova. From the high ground north of this town 78th Division moved forward against Centuripe. This key-point of the Axis line was cleared on August 2. The Germans twice counter-attacked but were repulsed, and, by the morning of the 3rd, 78th Division held the hill-town securely.

Cdn. 1st and 2nd Bdes., passing through 231st Bde. in front of Regalbuto, entered this town on August 1 after having overcome extremely stubborn resistance.

Meanwhile the Americans were participating in very bitter fighting at Troina. U.S. 1st Division, with 4th Tabor of Goumiers, reached a point five miles north-west of Troina. On August 3, U.S. 1st Division and a R.C.T. of U.S. 9th Division attacked but were checked. On the following morning the attack was resumed but again was halted. On August 5 the attack went in again and this time the German defences

were pierced and Troina was captured on August 6. U.S. 9th Division then went into the lead to enter Cesaro on the 8th.

On the coast U.S. 3rd Division was checked in front of San Fratello and Sant' Agata. A seaborne landing in the rear of the German line was

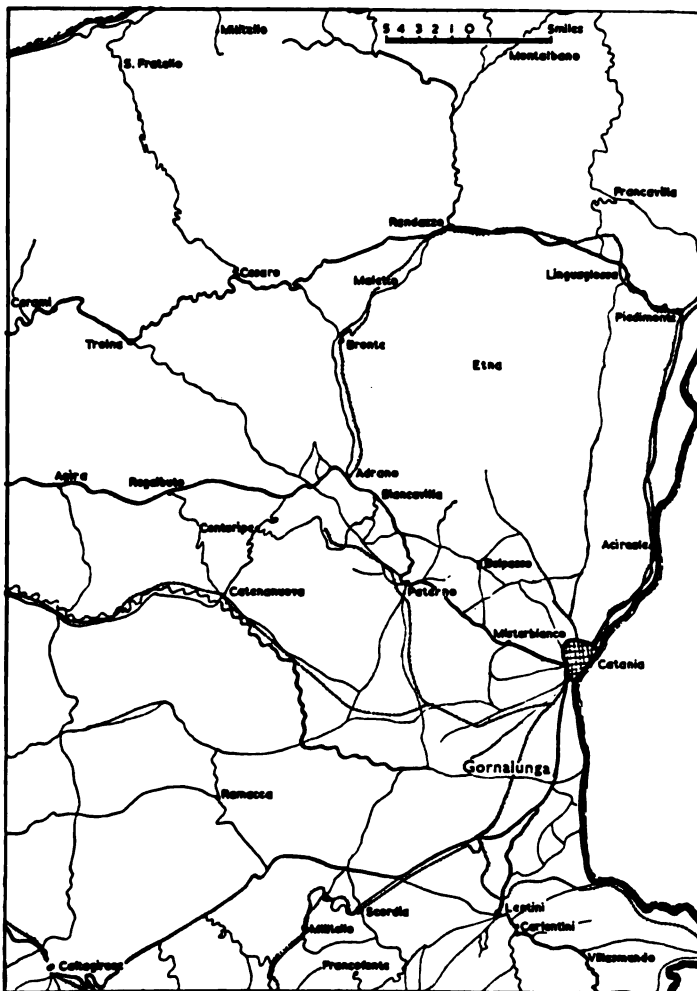


FIG. 5. North-east Sicily.

made and on the 8th these two places were occupied. On the 10th, U.S. 3rd Division crossed the River Zappulla and further inland a column crossed the Rosmarino. Another seaborne landing outflanked the German position at Cape Orlando, which fell on the 12th.

U.S. 9th Division, advancing from Cesaro on Randazzo, cut the road

from Randazzo to Cape Orlando on the 12th. Randazzo fell to U.S. 9th Division on August 13.

The German defensive line had been broken and they now began to withdraw towards Messina, destroying everything that would advantage the pursuit as they moved back. XIII Corps pressed northward after them. 50th Division entered Catania, with its grotesque black lava elephant bearing on its back an Egyptian obelisk, on the morning of August 5, while 5th Division seized Paterno. Further inland 51st Division stormed into Biancavilla while 78th Division and Canadian 1st Division crossed the River Salso in their advance on Adrano. This town was entered by 78th Division on the 7th as was Bronte, which figures among the titles of Nelson, on the following day. The division was checked for a while in front of the village of Maletto but the opposition was soon overcome and amid the ruins of the place 78th and U.S. 9th Divisions met.

51st Division now passed from XXX to XIII Corps; Canadian 1st Division went back to Lentini to rest and refit and 78th Division alone remained in the line in XXX Corps sector. Up the narrow corridor between the sea and Etna's base, 5th and 50th Divisions of XIII Corps steadily advanced. Riposto was entered on August 11. 51st Division, moving up the secondary road parallel to the coast road, captured Linguaglossa on the 14th.

The end of the Sicilian campaign was now in sight and preparations were already being made for the invasion of the Italian mainland. XXX Corps assumed control over Eighth Army's front, 51st Division relieved 5th Division in the line and 5th Division with H.Q. XIII Corps joined Canadian 1st Division to refit in preparation for Operation 'Baytown'.

In Sicily the remaining task was that of causing the greatest possible loss to the Axis forces as they withdrew across the Strait of Messina. On August 16, 50th Division entered Taormina, a holiday resort justly famed for the beauty of its setting high above the sea and with Mt. Etna, massive, brooding, as its background, and 51st Division reached Piedimonte Etneo. An unsuccessful attempt was made to cut off the retreating Germans by landing a squadron of 4th Armd. Bde. and 2nd Cdo. three miles north of Ali Marina.

U.S. 3rd Division entered Patti on August 14 and Falcone on the following day. On the 17th the Americans entered Messina, spread in a crescent on the lower slopes of the Peloritani mountains, there to be joined by elements of 4th Armd. Bde. and 2nd Cdo.

The Axis forces, defeated in battle, had avoided disaster. They got away in good order though their losses were severe both in men and material. Their total losses of men were around 164,000 killed, wounded and P.o.W. Of these 34,000 were Germans.

The political effects of the Allied victory were of the greatest

importance. The Fascist régime collapsed and Mussolini resigned on July 25. Italy was shortly to withdraw from her association with Germany. The strategic objectives of the Operation 'Husky' had been achieved.

THE INVASION—MEDICAL COVER

The medical arrangements went very much according to plan, though A.D.M.S. 1st Airborne Division and many of the personnel of his field ambulances spent several hours in the sea before being rescued. With each battalion of the assault troops went its R.M.O. and S.Bs., together with a light section of the field ambulance working with the brigade of which the battalion was part. This field ambulance section consisted of one medical officer and 18 O.Rs., R.A.M.C., carrying in packs sufficient materials to treat 150 cases. Each light section also took with it 6 stretchers and 12 blankets. It moved forward with the battalion until casualties occurred, when it halted, set up a dressing station and collected the casualties, thus freeing the R.M.O. to proceed unencumbered with his battalion.

About H-hour+2 the medical section of the beach brick went ashore and thereafter provided medical cover for casualties occurring on the beach. About H-hour+4 or H-hour+5 the balance of the field ambulances, with F.S.U.s. attached, followed. The light sections at once rejoined their parent units and began to function as A.D.Ss. The F.S.U. was equipped to perform twenty urgent operations daily and the field ambulance carried supplies sufficient to enable it to treat some 500 cases. The personnel of the field ambulance took with them 30 stretchers, 60 blankets and 60 pints of plasma. On reaching the shore the field ambulance at once established a M.D.S. which received casualties from the A.D.S. which its light section had established, from the R.A.Ps. and from the beach dressing stations.

In XIII Corps sector the M.D.S. of 158 Fd. Amb. (5th Division), with a F.S.U. and a F.T.U. attached, on How Beach was able to evacuate some 80 casualties to a hospital ship, but 141 Fd. Amb. (5th Division), with 5 F.S.U. and 4 F.T.U., on George Beach was forced to hold its patients because of the severity of local aerial bombardment. Lt. Sec. 7 C.C.S., coming ashore, took over from the M.D.S. of 141 Fd. Amb. which then moved on Syracuse. On D-day+1 Lt. Sec. 7 C.C.S., handing over to Hy. Sec. 7 C.C.S., moved into Syracuse, there again to take over from the M.D.S. of 141 Fd. Amb. in the mental hospital (Ospedale Psichiatrico Provinciale, about 4 km. out of Syracuse on the Catania road). In the beachhead the C.C.S. undertook 21 operations and evacuated 270 casualties. On D-day+3 Hy. Sec. 7 C.C.S. joined the light section in Syracuse. Lt. Sec. 15 C.C.S. landed on How Beach and joined the M.D.S. of 149 Fd. Amb., but the heavy section of this unit, travelling in another ship, landed at Syracuse. It lost all its transport and

ward equipment at sea from enemy action. A.D.M.S. 86 Area instructed the section to join the light section and 149 Fd. Amb. in the mental hospital. On D-day+5, 132 Fd. Amb. joined the medical centre in Syracuse and undertook the duties of the reception of patients and their

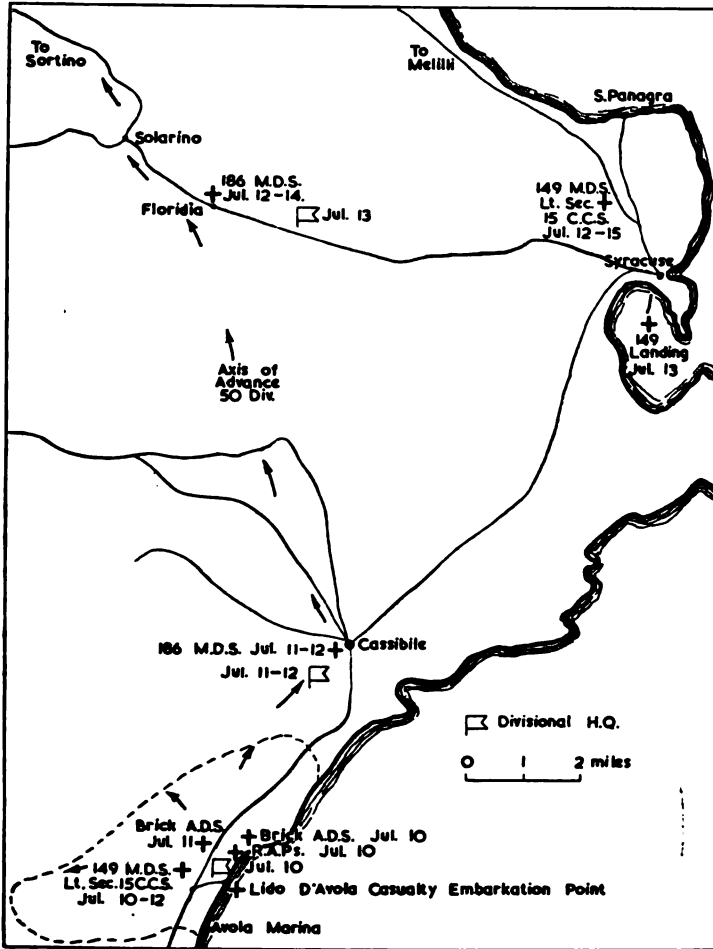


FIG. 6. The Movements of the Medical Units of 50th Division from the Beachhead to Sortino.

distribution between 7 and 15 C.C.Ss. During the next three weeks 132 Fd. Amb. dealt with some 6,000 patients, between 250 and 500 a day.

As soon as the troops moved beyond the beachhead, the evacuation of casualties became increasingly difficult for the reason that no M.A.C. and very few field ambulance cars had come ashore during the assault phase. By early morning of D-day+1 only two vehicles of 141 Fd. Amb. had reached the M.D.S. in which some 140 cases were being held.

A serious shortage of stretchers and blankets was rapidly developing. Moreover, on the 10th H.S. *Talamba* (485 beds) had been bombed and sunk off the beaches. She had reached a point five miles off shore in the Golfo di Noto from Tripoli on the afternoon of July 10. At 1500 hours she was ordered to close in to receive casualties. About 2200 hours, while she was awaiting the last boat-load, with her red and green lights full on, she was the victim of a dive-bombing attack. She was hit, heeled over, shipped a lot of water and then righted herself. A few minutes later she was hit again and began to sink. Orders to abandon ship were issued. Other ships in the vicinity rescued the survivors and conveyed them to Malta. Very few lives were lost. On July 13, 52 cars of 146 M.A.C. were landed and the difficulties of evacuation became eased.

In Syracuse damage due to bombing was more extensive than appeared at first sight. The population, stated to be 50,000 before the occupation, was now approximately 25,000. About half the inhabitants slept in fifty air-raid shelters, all of which were in a very foul state. One shelter under the cathedral was said to hold 5,000. There was some damage to drains and water supplies but nothing that could not be repaired within a few days. Water was available in most parts of the town, but as the reservoir filled and pressure rose many more leaks were discovered. The population was short of food, particularly flour and rice, while fats were very scarce. Efforts were being made to provide olive oil. The municipal services had not functioned for about a fortnight; consequently the town was in a filthy condition, streets being littered with all kinds of rubbish. Street cleaning was normally done on a contract basis and this arrangement was quickly resumed. Local civilian doctors stated that there was little or no malaria in Syracuse but *A. maculipennis* was found in its western outskirts.

As XIII Corps pressed northwards, the field ambulances advanced. On July 14 the divisional A.D.S. of 50th Division was opened in Carlentini and the M.D.Ss. in Melilli and Floridaia. The divisional A.D.S. of 5th Division was in Villasmundo and the M.D.S. in Melilli. The other field ambulances were in reserve. On the 15th, 7 and 15 C.C.Ss. reverted from 5th and 50th Divisions to XIII Corps. In Syracuse they formed, along with 132 Fd. Amb. (Corps) and 146 M.A.C., XIII Corps Medical Centre in the mental hospital. O.C. 15 C.C.S. was nominated as commandant of this centre.

In XXX Corps sector 159 Fd. Amb. (Corps) provided the M.D.S. on Bark South Beach. It was joined by the New Zealand surgical team which with 21 C.C.S. landed from a hospital ship. The assault sections of 4 and 5 (Cdn.) Fd. Ambs. went ashore with Cdn. 1st and 2nd Bdes. The H.Q. and reserve companies landed about an hour later. B.D.Ss. were established in the brigade sectors and 5 (Cdn.) Fd. Amb. sent a section to serve the Special Service Bde. on the left which had en-

countered stout opposition from a Blackshirt battalion. By noon on D-day A.D.Ss. had been opened inland, but as that of 5 (Cdn.) Fd. Amb. found little or nothing to do, it closed again. 9 (Cdn.) Fd. Amb., lacking its transport and equipment, remained in reserve with Cdn. 3rd Bde. 1 (Cdn.) F.D.S., 35 F.S.U. and 35 F.T.U. landed around noon and at once opened an A.S.C. in a farm building about $\frac{1}{2}$ mile from the beach in Cdn. 1st Bde. sector. Next day 2 (Cdn.) F.S.U. joined them.

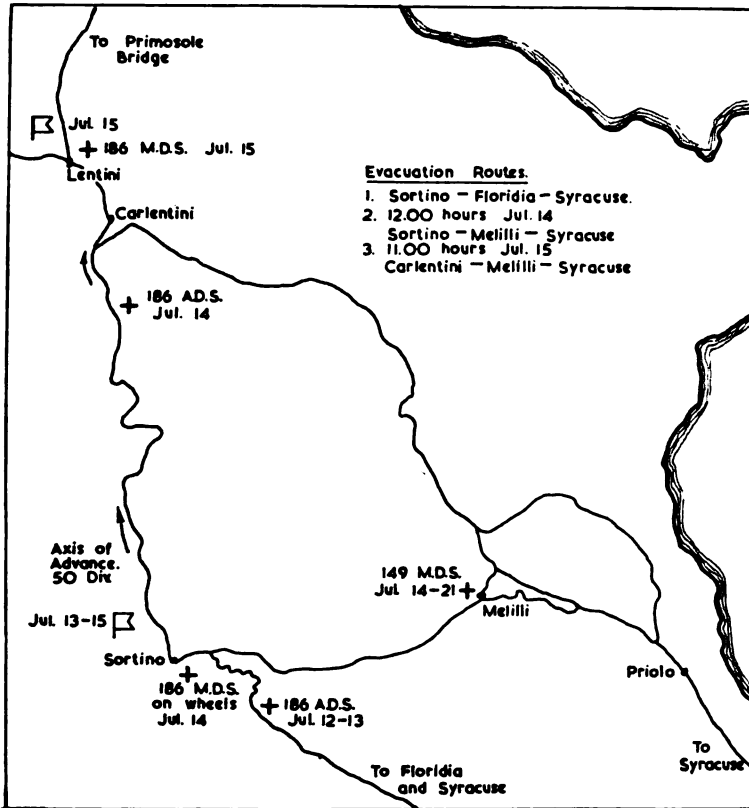


FIG. 7. The Movements of the Medical Units of 50th Division. Sortino to Lentini.

The wounded were evacuated through the beachhead to the H.C. *St. David*. Canadian casualties on D-day were 7 killed and 25 wounded, those of the S.S. Bde. 9 killed and 32 wounded.

When, during July 11-13, Cdn. 1st Bde. advanced to the area of Giarratana and Cdn. 2nd Bde. moved through Ispica and Modica to Ragusa, a company of each field ambulance moved in close support while the H.Qs. leap-frogged, under control of A.D.M.S. Canadian 1st Division, to open A.D.Ss. :

4 (Cdn.) Fd. Amb. at Bompalazzo, near Burgio, on the 11th	
5 " " at Ispica	12th
4 " " near Modica	13th

1 (Cdn.) F.D.S., with 35 F.S.U. and 35 F.T.U., moved to Maucini, south-west of Pachino, on the 12th. It was relieved there by 3 F.D.S., with 36 F.S.U. attached, on the 13th. Leaving 35 F.S.U. and 35 F.T.U. at Maucini, 1 (Cdn.) F.D.S. moved to Bompalazzo. 1 and 2 (Cdn.) F.S.U.s. and 1 (Cdn.) F.T.U. were at Maucini on the 11th and 12th; they then moved to Bompalazzo to form, with 1 (Cdn.) F.D.S. and 9 (Cdn.) Fd. Amb., a Canadian medical centre. Owing to the lack of equipment, however, all but the most serious cases had to be sent on to Maucini to 3 F.D.S. On July 14, 2 (Cdn.) F.D.S. reached Bompalazzo but remained closed.

During the first five days of Operation 'Husky' not more than 200 casualties passed through the Canadian field medical units. Had casualties been heavy it is possible that serious difficulty would have arisen. The Canadian F.S.U.s. and 9 Fd. Amb. had lost much of their equipment and were therefore greatly handicapped.

On July 12, 21 C.C.S. moved into Pachino. On the 13th, 4 C.C.S. landed but remained closed, moving next day to Bompalazzo and still remaining closed. 3 C.C.S., landing, moved on Pachino. On the 15th, 159 Fd. Amb., with two F.S.U.s. attached, joined 3 C.C.S. in Pachino to form XXX Corps Medical Area. The N.Z. surgical team then moved with 175 Fd. Amb. (51st Division) to Buccheri, midway between Palazzolo and Vizzini. 21 C.C.S. handed over to 3 F.D.S. in Pachino (from Maucini) and moved into Syracuse to join 7 and 15 C.C.Ss. in the mental hospital.

On July 15 information was received by A.D.M.S. 50th Division that many casualties, mostly among the airborne troops whose task it had been to seize the Primosole bridge (1st Para. Bde.), had been collected by 16 Para. Fd. Amb. on the south side of this bridge and that ambulance cars were urgently needed for their evacuation. A.D.M.S. went to this place, taking with him five armoured ambulance cars (White scout cars) and one car from 186 Fd. Amb. (50th Division) at Lentini. He found some 80 casualties, 60 British and 20 enemy, in the care of 16 Para. Fd. Amb. in a small farmhouse less than one km. from the bridge around which a fierce struggle was still raging. The surrounding countryside was held by pockets of enemy troops. The field ambulance had been twice overrun. Its M.D.S. was a mile and a half in front of the nearest R.A.P. and, having no transport, had been forced to hold its patients. The M.D.S. was clearly marked with the Red Cross and though it was well within range of enemy machine-guns it had not been fired on; nor did the enemy interfere with the ambulance cars that now cleared it.

The advance of the Canadians on Vizzini, Piazza Armerina and Valguarnera was so rapid that a certain strain was felt by the medical units. Their transport had to be used to bring forward 4 C.C.S. and some forty tons of unaccompanied stores. 5 (Cdn.) Fd. Amb. opened an A.D.S. in Monterosso Almo (Abno on some maps), where it was joined by 1 (Cdn.) F.D.S. and 1 (Cdn.) F.S.U. on July 15. An

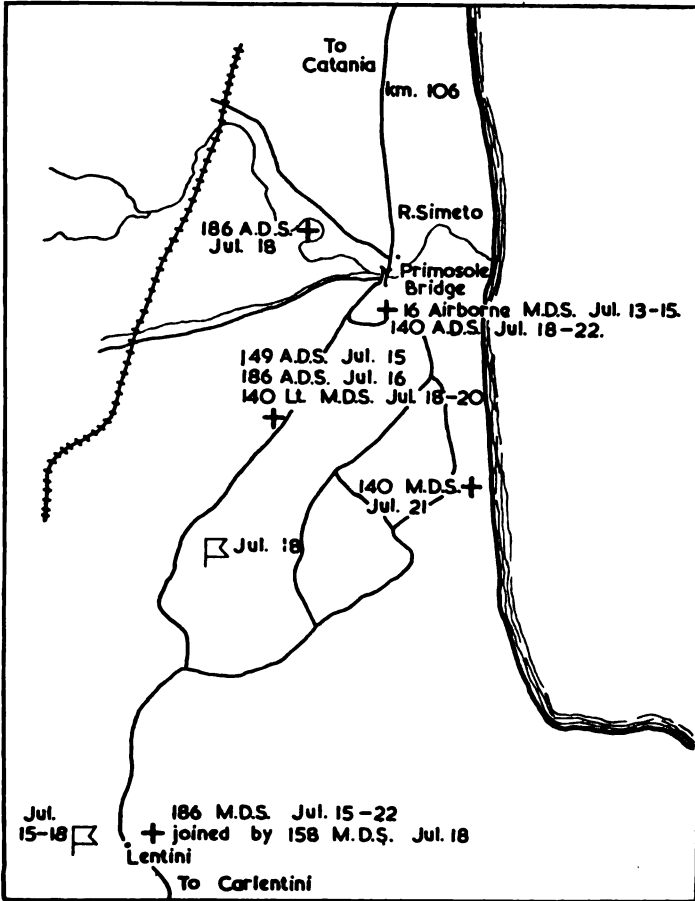


FIG. 8. The Movements of the Medical Units of 50th Division. Lentini to the River Simeto.

A.S.C. was then formed. On July 16, 186 Fd. Amb. of 50th Division and 158 Fd. Amb. of 5th Division opened a M.D.S. conjointly in Lentini, operating alternately for eight-hour periods. To this M.D.S. 2, 4 and 5 F.S.U.s. and 4 F.T.U. were attached to form an advanced surgical centre which, during the next five days, dealt with over 1,000 casualties.

4 C.C.S., with 35 F.S.U. and 35 F.T.U. attached, opened in Modica, and 151 Lt. Fd. Amb. (Army) together with the medical component of M.N.B.D.O. (2)* in Augusta. 175 Fd. Amb. of 51st Division moved on Francofonte. 4 (Cdn.) Fd. Amb., leaving one company behind to look after the immobiles, moved to Grammichele on the 16th. Evacuation was from the R.A.Ps. to the A.D.S. at Grammichele and thence by 146 M.A.C. to Syracuse through 200 Fd. Amb. which was staging at Vizzini. On July 16 all the Canadian field medical units, with the exception of 4 (Cdn.) Fd. Amb., moved to an area midway between Vizzini and Grammichele, the vehicles of 5 (Cdn.) Fd. Amb. being used to move 9 (Cdn.) Fd. Amb.

On the 17th, 4 (Cdn.) Fd. Amb. was open in Grammichele, 5 (Cdn.) Fd. Amb. was open three miles south of Piazza Armerina, 1 (Cdn.) F.D.S. and 1 (Cdn.) F.S.U. were open two miles west of San Michele. The remaining units were closed and in reserve. 149 Fd. Amb. (50th Division) and 164 Fd. Amb. (5th Division) conjointly opened in Lentini and received casualties alternately. Three surgical teams attached to them were fully employed for four days.

On July 18, 5 (Cdn.) Fd. Amb. moved to a point three miles from the bitterly contested road junction south-west of Valguarnera. 2 (Cdn.) F.D.S., with 2 (Cdn.) F.S.U. and 1 (Cdn.) F.T.U., opened an A.S.C. nearby, in front of the guns; 80 casualties were tended during the day. 1 (Cdn.) F.D.S. at Monterosso Almo evacuated 30 patients and then closed as did also 4 (Cdn.) Fd. Amb. 4 C.C.S. in Modica closed and moved on Caltagirone.

Thus far the policy had necessarily been to evacuate all casualties in need of the facilities that only a static general hospital can provide to the medical bases in the vicinity of Sousse and Tripoli. But circumstances in Sicily were now becoming such as to permit the bringing forward of general hospitals to the island itself. It was decided that 15 and 21 C.C.Ss. should form a holding unit, with 132 Fd. Amb. as a reception unit, in Syracuse until such time as 11 and 66 B.G.Hs. and 5 Cdn.G.H. should arrive, when Syracuse would be organised as a medical area. When the battle front had moved further to the north 54 and 70 B.G.Hs., on arrival, would be established in Catania, whither 5 Cdn.G.H. would move.

The difficulties of evacuation mounted again as the front line moved away from Syracuse, for the roads to the north were hilly and tortuous and soon became greatly congested. The journey from Caltagirone, where 4 C.C.S. had opened on the 18th, back to Syracuse took so long that the limited resources of the M.A.C. became strained to the utmost and it became necessary to use 200 Fd. Amb. (231st Inf. Bde.) for

* Mobile Naval Base Defence Organisation (*see* Appendix III).

staging purposes at Vizzini. For the same reason XIII Corps was obliged to stage at Melilli where, in a church and a school, 164 and 149 Fd. Ambs. of 5th and 50th Divisions had established their M.D.Ss. Army was responsible for evacuation from the rearmost corps C.C.S.

There was nothing particularly unusual associated with the utilisation of the field ambulances. The A.D.S. of a divisional field ambulance was usually established within a thousand yards of the front line and the M.D.S. within three to six miles. If well displayed Red Crosses marked their sites and if they were not too close to legitimate targets, these medical units were not fired on. The field ambulances that had been serving in the Western Desert were required quickly to adapt themselves to conditions which to them were strange. They had to learn afresh the methods of adapting buildings for use as dressing stations, opening quickly, closing and moving forward quickly and opening again. Towards the end of the campaign when malaria became rife the field ambulances were required to accustom themselves to the task of holding, feeding and nursing as many as 500 sick. At one time the three ambulances of 50th Division, for example, were holding 1,000 such cases up to a maximum of fourteen days' duration of stay.

The field ambulances coming from the Middle East had not yet been reorganised in accordance with the recommendations of the Hartgill Committee.

The following excerpts from the Standing Orders of 50th Division at this time will serve to illustrate the policy adopted by the British divisional medical services :

1. The M.O. attached to the divisional R.E. will normally be the M.O. i/c troops at main divisional headquarters.
2. A field ambulance company plus or minus a section will normally form an A.D.S. Three medical officers will, except in unusual circumstances, be with the A.D.S.
3. The A.D.S. will always be prepared to give blood and apply plaster splinting to fractures in order to ensure the best possible condition of casualties on arrival at the M.D.S. after long or rough journeys.
4. The O.C. or 2 i/c of the field ambulance operating a M.D.S. will daily make a tour of the path of the wounded man, irrespective of which field ambulance is supplying A.D.S. companies to that M.D.S.
5. Armoured ambulance cars (White scout cars) will be on the strength of field ambulances for maintenance and, in battle, pooling purposes. During battle armoured ambulance cars will not be used behind the A.D.S.; they will always work forward and will normally be under control of M.Os. i/c A.D.Ss. for attachment to R.M.Os. of units served by these A.D.Ss.
6. During battle field ambulances and the field hygiene section (if not at rear divisional H.Q.) will maintain a D.R. at A.D.M.S. office, if not in wireless or line communication. A field ambulance officer (the D.O. or

- T.O. may suffice) may be required to act as liaison officer between D.D.M.S. Corps and A.D.M.S. Division. This will be on request of D.D.M.S. Corps.
7. O.C. field hygiene section will be M.O. i/c troops at rear divisional H.Q. He will supervise the maintenance of records relating to sickness, health and hygiene in A.D.M.S. office. He will see all hygiene reports rendered by R.M.Os. and field ambulances to A.D.M.S. and advise on these and on any interim reports. He will advise A.D.M.S. on all matters regarding malaria control field work.
 8. The special divisional malaria officer will give full time to his special duties save in actual battle if the division is short of M.Os. and his services would be more valuable in a M.D.S.
 9. All divisional medical resources—personnel, equipment and transport—will be considered as a common pool.
 10. In battle replacements of medical casualties will be automatic and from the rear forwards; i.e. a R.M.O. will be replaced at once from the A.D.S. and so on.
 11. All divisional medical units will maintain 'the ever open door' to the sick and wounded, no matter whether these belong to 50th Division or others or from civil sources.
 12. O.C. field ambulance will act as S.M.O. to the brigade with which his ambulance is associated. The R.M.Os. of this brigade will draw their supplies from this field ambulance. He will personally ensure that records of casualties and controlled stores are maintained at and forward of the M.D.S.
 13. All casualties among and attachments of ambulance cars will be reported immediately by Os.C. field ambulances to A.D.M.S.
 14. In battle A.D.M.S., D.A.D.M.S. and office will be at main divisional H.Q. A.D.M.S. will make a daily tour of the line of evacuation.

On July 19, 4 (Cdn.) Fd. Amb., with 1 (Cdn.) F.D.S. and 1 (Cdn.) F.S.U., opened in Valguarnera in a school which had been used as an Italian military hospital. In it were some 60 Italian casualties in a most distressful condition and large stocks of medical stores.

5 Cdn.G.H. landed at Augusta and proceeded to Syracuse, there to join the medical centre in the mental hospital. Since it had lost about two-thirds of its equipment and stores during an air raid on Augusta harbour, many of its medical officers, nursing sisters and O.Rs. were distributed among the C.C.Ss. in the medical centre.

On the 20th, Cdn. 1st and 2nd Bdes. were approaching Assoro and Leonforte. These towns were captured after two days of fighting. Then the division turned eastwards towards Adrano. Every step of the way was fiercely contested and there were major engagements at Nissoria, Agira and Regalbuto. Cdn. 3rd Bde. served with 78th Division during the crossing of the Dittaino and thereafter returned to the Canadian Division. 3 C.C.S. and 159 Fd. Amb. moved from Pachino on Florida.

On July 21, Lt. Sec. 7 C.C.S. moved from Syracuse to Lentini where with 158 Fd. Amb. (5th Division), less one company, it established a corps dressing station. Its heavy section, with 4 F.T.U. and 4 and 5 F.S.U.s. and 2 Mob. Ophthal. Unit, moved to Lentini on the 22nd. Evacuation from Lentini was by air from an airstrip four miles out of the town. Very considerable difficulties were being encountered in procuring hospital ships and no less than 1,200 cases were awaiting

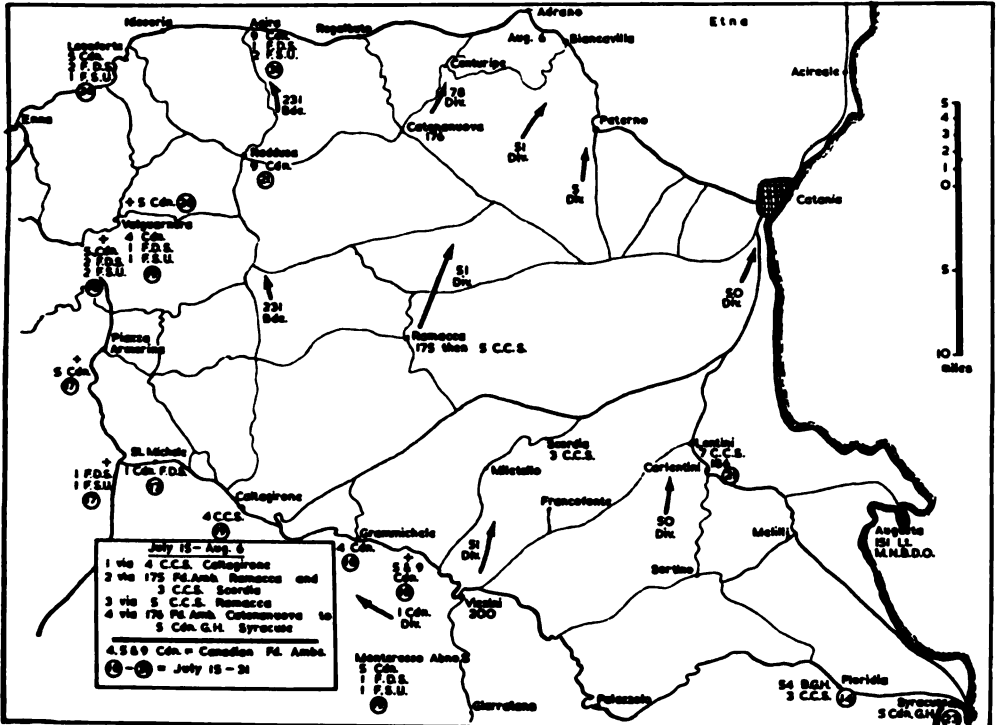


FIG. 9. Canadian 1st Division and 231st Brigade. Monterosso to Regalbuto. Medical Cover.

evacuation in Syracuse alone. The number of hospital ships allotted to Operation 'Husky' was sufficient but their movement left much to be desired. It was by no means unusual for a whole week to elapse before a particular ship, leaving Sicily for North Africa, returned. XIII Corps, in order to relieve 7 C.C.S. of its minor cases, established a convalescent home for 200 patients in a building occupied in peace-time by the Ministry of Agriculture, about four miles from Syracuse on the Florida road, using 14 Fd. Amb. (Army) for the purpose. Many cases were being evacuated by air, but it was only when H.S. *Tairea* arrived on the 23rd and H.S. *Llandoverly Castle* followed on the 25th that the situation was eased.

54 B.G.H. had now arrived and was about to open in Florida. In Syracuse 66 B.G.H. was taking over from 15 and 21 C.C.Ss. 3 C.C.S. was *en route* for Scordia whence evacuation would be by road and rail through Lentini to Syracuse. From Syracuse evacuation was by hospital ship to Tripoli or by carrier to Sousse. 3 F.D.S., from Pachino, was open in Cassibile, whence evacuation was by air to North Africa.

The Canadian medical units in Valguarnera, reinforced by 2 (Cdn.) F.S.U. and 1 (Cdn.) F.T.U., dealt with the Canadian casualties. 1 and 2 (Cdn.) F.S.U.s. worked in rotation on twelve-hour shifts. 5 (Cdn.) Fd. Amb., south of Valguarnera, staged casualties *en route* for 4 C.C.S., now at Caltagirone, until this unit moved up to the vicinity of Valguarnera. 9 (Cdn.) Fd. Amb., which by this time had acquired transport of its own, moved with Cdn. 3rd Bde. to the Dittaino Valley and opened an A.D.S. at Raddusa Station, eight miles north-east of Valguarnera. During the period July 20–24 Canadian casualties were 140 killed and 395 wounded. 4 (Cdn.) Fd. Amb. admitted 657 patients—547 Canadian, 89 British and 21 P.o.W.

During these operations a modification was made in the distribution of the personnel of the Canadian field ambulances. It had been the custom for a section of a field ambulance to accompany each of the three battalions of the brigade. On July 20, A.D.M.S. Canadian 1st Division directed that henceforth these three sections should remain together as a company, that this company should establish a C.C.P. in the vicinity of brigade H.Q. and from this send forward to the R.A.Ps. such personnel and vehicles as the circumstances required. It was found that in this way economies in respect of both personnel and transport were achieved.

It was at this time too that wireless sets were made available to the divisional medical services. The A.D.M.S. and each of the field ambulances had a set and after they had been in use for ten days or so everyone wondered how an A.D.M.S. or a field ambulance lacking such means of intercommunication could possibly have managed to discharge their functions in battle.

On July 24, when the Canadians were involved in heavy fighting about Nissoria, 5 (Cdn.) Fd. Amb. opened an A.D.S. in an orchard a mile south of Leonforte alongside the main road from Valguarnera. 2 (Cdn.) F.D.S. with 1 (Cdn.) F.S.U. opened an advanced surgical centre nearby and were joined on the 25th by 1 (Cdn.) F.T.U. 9 (Cdn.) Fd. Amb. remained open at Raddusa and 1 (Cdn.) F.D.S. with 2 (Cdn.) F.S.U. at Valguarnera concentrated its attention upon post-operative cases. 4 (Cdn.) Fd. Amb. remained closed.

Between July 25–30, when the Canadians were capturing Agira and Catenanuova, Canadian casualties were 119 killed and 446 wounded.

During this period the sick rate rose, gastro-intestinal disturbances and 'fever' being prevalent.

To cover Cdn. 3rd Bde's. attack on Catenanuova, 9 (Cdn.) Fd. Amb. opened an A.D.S. in Agira in addition to the one in Raddusa. Associated with the A.D.S. at Agira were 1 (Cdn.) F.D.S. and 2 (Cdn.) F.S.U. from Valguarnera. When the volume of the work decreased on the 31st the A.D.S. at Raddusa was closed and moved to Agira. The group of medical units, together with 1 (Cdn.) F.S.U., then provided cover for the fighting about Regalbuto. 4 (Cdn.) Fd. Amb. remained in Valguarnera until August 2 and then moved forward to pass into reserve.

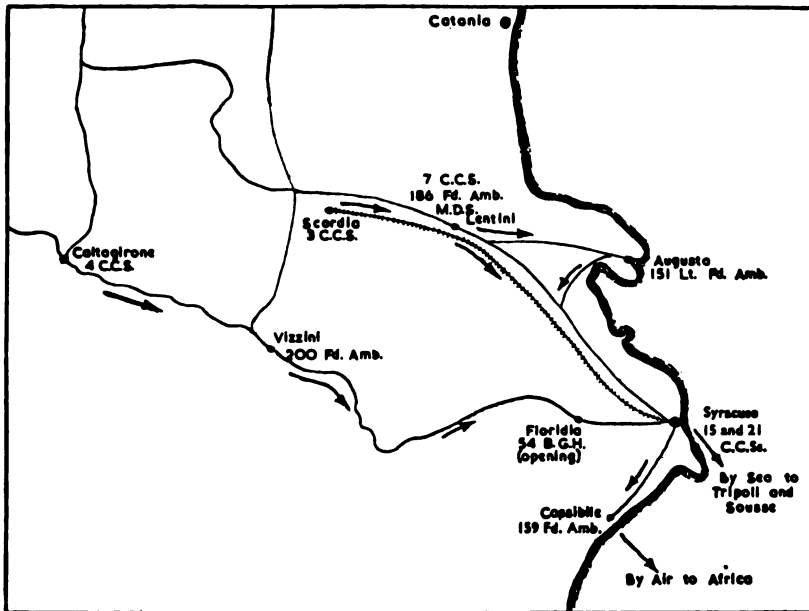


FIG. 10. The Evacuation Chain. July 27, 1943.

On July 25 the Canadian field ambulances were evacuating to the M.D.S. of 175 Fd. Amb. at Ramacca which was functioning as a surgical centre. On the 26th, XXX Corps issued instructions that the Canadian line of evacuation would remain Caltagirone–Vizzini–Floridia until a C.C.S. had been established in the vicinity of Scordia. On the 27th it was laid down that all casualties west of Ramacca would be evacuated through 175 Fd. Amb. to 3 C.C.S. which had opened in Scordia on the 26th. By July 31, 4 C.C.S. had moved from Caltagirone to join 3 at Scordia. The M.A.C. found it difficult to keep track of the C.C.Ss. during this period and casualties tended to accumulate in the field ambulances. In Leonforte large stocks of enemy medical stores were

discovered and these were used to make good the deficiencies of 5 Cdn.G.H. in Syracuse.

During the period July 31–August 6 the Canadian losses totalled 106 killed and 345 wounded. The incidence of 'fever' rose to herald an epidemic of malaria.

On July 26, 11 Fd. Amb. of 78th Division landed in Sicily.

On July 27 the evacuation chain in Sicily was as shown in Fig. 10. 54 B.G.H. (Army) was opening in Florida; 66 B.G.H. in Syracuse

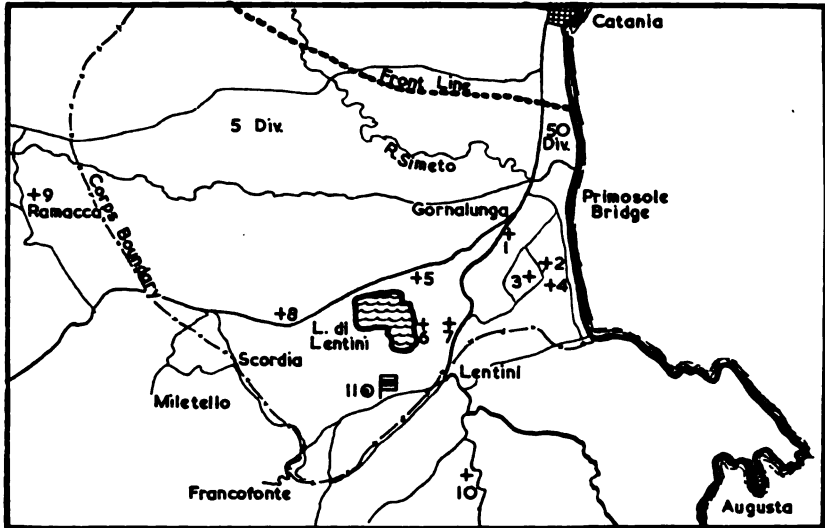


FIG. 11. The Distribution of the Medical Units of XIII Corps.
July 27, 1943.

- | | |
|------------------------|---------------------------|
| 1. 140 Fd. Amb. A.D.S. | 7. 19 Fd. Hyg. Sec. |
| 2. 140 Fd. Amb. | 8. 2 (Cdn.) Lt. Fd. Amb. |
| 3. 186 Fd. Amb. | 9. 164 Fd. Amb. |
| 4. 149 Fd. Amb. | 10. 14 Fd. Amb. (Army) |
| 5. 158 Fd. Amb. | 11. Air Evacuation Centre |
| 6. 141 Fd. Amb. | |

■ Corps H.Q.

was taking over from 15 and 21 C.C.Ss. (Army). Evacuation from 4 C.C.S. (XXX Corps) at Caltagirone was by road through Vizzini where 200 Fd. Amb. (XXX Corps) was staging to the medical centre at Syracuse. 4 C.C.S. itself was about to move to Scordia. Evacuation from 7 C.C.S. (XIII Corps) and 186 Fd. Amb. at Lentini was by road *via* Augusta where 151 Lt. Fd. Amb. (Army) was staging or else by rail to Syracuse direct. 3 C.C.S. had moved from Florida to Scordia whence evacuation was through Lentini to Syracuse. From Syracuse further evacuation was by hospital ship to Tripoli or by hospital

carrier to Sousse. 3 F.D.S., from Cassibile, was at the Pachino airfield whence evacuation was to North Africa. 159 Fd. Amb., from Florida, had passed to 6 B.S.A. and was on duty at the Cassibile airfield with one section on the beach for embarkation purposes. 58 B.G.H. (6 B.S.A.), reaching Syracuse on July 22 from Tripoli where its nurses had been left, was *en route* for the medical centre at Syracuse. The nurses rejoined the unit on the 30th. The distribution of the medical units of XIII Corps on July 27 is shown in Fig. 11.

More M.A.C. and A.C.C. cars were now arriving in a steady stream. 146 M.A.C. was complete and thus was able, with the help of two platoons of 219 A.C.C. and 12 cars of 60 M.A.C., to overcome the difficulties of evacuation that had been causing considerable anxiety.

11, 33, 70 and 83 B.G.Hs., 2 and 6 Fd. Hosps., 567 A.C.C. and the balance of 60 M.A.C. were on their way to Sicily from North Africa.

On July 31, 152 Fd. Amb. (78th Division), with 29 F.S.U., was sent to Ramacca to free 175 Fd. Amb. of 51st Division and to hold patients until 5 C.C.S. arrived and became established.

At the beginning of August the evacuation chain was as shown in Fig. 12. In the medical area at Syracuse were 58 and 66 B.G.Hs., 5 Cdn.G.H., 15 and 21 C.C.Ss., 132 Fd. Amb. and 219 A.C.C. 54 B.G.H., at Florida, was to be relieved by 11 B.G.H. when the latter unit arrived. These hospitals were evacuating to Syracuse (hospital ships and carriers) or to Cassibile and Pachino (air). A Basuto section was now attached to 66 B.G.H. at Syracuse and West African and Indian sections were arriving for attachment to 33 B.G.H. at Syracuse when this unit reached Sicily. 159 Fd. Amb. at Cassibile was to be relieved by 2 Fd. Hosp. and 3 F.D.S. at Pachino by 6 Fd. Hosp.

5 C.C.S. (XXX Corps), now at Ramacca, was evacuating to 3 and 4 C.C.Ss. (XXX Corps) at Scordia. At Augusta 151 Lt. Fd. Amb. (151 Sub-area) was staging in connexion with evacuation by rail from Scordia and Lentini.

The movements of the field ambulances of 78th Division during the period July–August when Catenanuova, Centuripe and Maletto were captured and the Axis defensive line broken were:

July 31	11 Fd. Amb.	Catenanuova
	152	Ramacca
August 3	152	Catenanuova
5	152 with 22 F.S.U. and a F.T.U.	Centuripe
	217	Catenanuova
7	11	Adrano
	217	north of Adrano

In the closing days of the campaign most Canadian and many 231st Bde. casualties passed through 9 (Cdn.) Fd. Amb. at Agira, whence

those urgently requiring surgical intervention were sent on to the surgical centre (at Agira), the rest to 5 C.C.S. at Ramacca until August 5 and thereafter to 178 Fd. Amb. at Catenanuova while the C.C.S. was

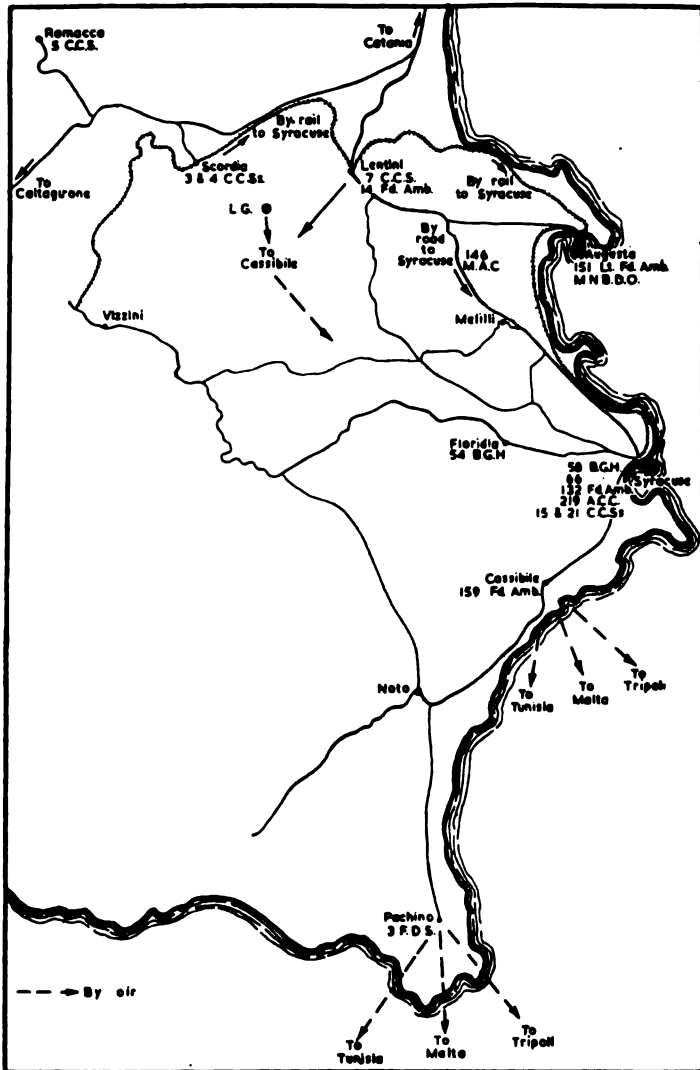


FIG. 12. The Evacuation Chain. July 31, 1943.

moving to Paterno, where it opened on August 9. As far as possible the Canadian sick were held at Agira, the overflow being sent back to 5 (Cdn.) Fd. Amb. at Leonforte.

During these events the medical arrangements remained flexible.

From July 30–August 3 casualties from Cdn. 3rd Bde. were evacuated through British channels. On August 1, 9 (Cdn.) Fd. Amb. was receiving casualties already treated in British units. When Cdn. 2nd Bde. moved along the Salso Valley to seize the hills dominating Adrano, it entered country in which evacuation was exceedingly difficult. Only stretcher-bearer parties could undertake the task and carries were as long as three and a half miles.

Between August 12–15 the Canadian Division moved to an area bounded by Scordia, Lentini, Sortino, Francofonte and Militello. 4 (Cdn.) Fd. Amb. opened an A.D.S. near Francofonte and established a C.P. with each brigade H.Q. Evacuation from the A.D.S. was to 7 C.C.S. at Lentini or to 5 (Cdn.) Fd. Amb. near Sortino. The latter held all sick save cases of malaria which were sent on to 2 (Cdn.) F.D.S. nearby. Convalescents were sent to a rest camp near Syracuse. On August 20, to enlarge the Sortino medical centre, 1 (Cdn.) F.D.S. opened there.

Canadian 1st Army Tank Brigade, to which 2 (Cdn.) Lt. Fd. Amb. was attached, was in Eighth Army reserve. It landed at Syracuse between July 13–17 and moved to the vicinity of Cassibile. On July 21 it moved northwards into the Catania plain to be deployed along the Dittaino to the north of Scordia, between the right flank of XXX and the left flank of XIII Corps. It took part in the defence of two bridgeheads across the river but was involved in no serious engagement. On August 11 the brigade passed u/c Canadian 1st Division. Its total casualties were 1 killed and 45 wounded (plus those of the regiment under divisional command throughout).

On July 22, 2 (Cdn.) Lt. Fd. Amb. opened a M.D.S. about three miles north of Scordia. Sections were sent forward in rotation to maintain an A.D.S. and ambulance cars were attached to regiments as required. The greatest demand upon the unit was on July 26–27 when some 40 casualties from Canadian 1st Division were admitted.

It is of interest to note that the Canadians found this form of field ambulance most useful when serving a tank brigade operating apart from the division. But this is not to say that in respect of personnel and transport it was economical.

Since as far as possible Canadian casualties were retained within a Canadian evacuation system it is convenient at this point to refer to 5 and 15 Cdn.G.Hs. It has been related that 5 Cdn.G.H. joined the medical centre at Syracuse. On July 23 it took over a 100-bed wing of 15 C.C.S. It was not until the 29th that it began to function independently following its re-equipment from captured stores. It took over two buildings from 21 C.C.S., each accommodating 100 patients. On July 30 it accepted all admissions to the medical centre while 66 B.G.H. was relieving 15 C.C.S. At the end of the day it had over 450 patients,

although 100 had been evacuated to a hospital ship. The congestion was relieved by using stretchers and by suspending tarpaulins over the courtyards. An additional building increased the hospital's capacity to 650.

On August 10, 5 Cdn.G.H. began to move to Catania, there to occupy a modern sanatorium that had been used as a Luftwaffe medical

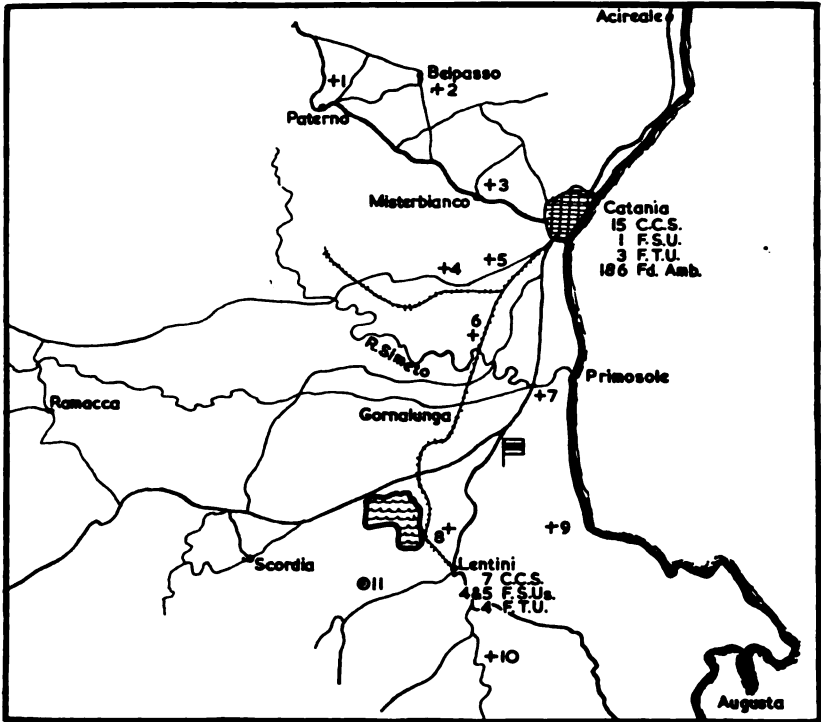


FIG. 13. The Distribution of the Medical Units of XIII Corps.
August 8, 1943.

- | | |
|--------------------------|--|
| 1. 164 Fd. Amb. A.D.S. | 7. 149 Fd. Amb. |
| 2. 158 Fd. Amb. | 8. 19 Fd. Hyg. Sec. |
| 3. 141 Fd. Amb. 2 F.S.U. | 9. 2 (Cdn.) Lt. Fd. Amb. |
| 4. 141 Fd. Amb. A.D.S. | 10. 132 Fd. Amb. (Corps Convalescent Centre) |
| 5. 186 Fd. Amb. A.D.S. | 11. Air Evacuation Centre |
| 6. 140 Fd. Amb. | |
- Corps H.Q.

centre. Before leaving, the Germans had wrecked the electric plant and after they had departed the citizens of Catania had looted the place, destroying almost everything that they could not remove. However, the R.Es. quickly repaired the worst of the damage and 5 Cdn.G.H. opened on August 18 with 400 beds. By the end of the month there were 800.

15 Cdn.G.H. reached Philippeville on July 11. Two surgical teams were despatched to 98 B.G.H. at Sousse. The unit proceeded to El Arrouch, about twenty-one miles inland from Philippeville. The site allotted to the hospital was found to be unsuitable. It was in a malarious

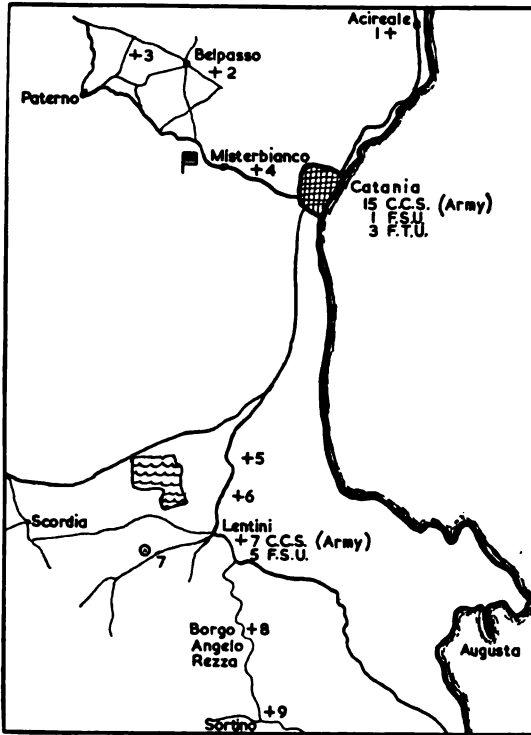


FIG. 14. The Distribution of the Medical Units of XIII Corps.
August 15, 1943.

- | | |
|--|---|
| 1. 149 Fd. Amb. 2 F.S.U. | 7. Air Evacuation Centre |
| 2. 164 Fd. Amb. 4 F.S.U. | 8. 132 Fd. Amb. (Corps Convalescent Centre) |
| 3. 158 Fd. Amb. | 9. 1 & 2 (Cdn.) F.D.Ss. |
| 4. 141 Fd. Amb. | 1 & 2 (Cdn.) F.S.U.s. |
| 5. Cdn H.Q. 4 (Cdn.) Fd. Amb. 2 (Cdn.) Fd. Hyg. Sec. | 9 (Cdn.) Fd. Amb. |
| 6. 19 Fd. Hyg. Sec. | |

▨ Corps H.Q.

area and far removed from 1 (Cdn.) Con. Depot and 1 (Cdn.) Reinforcement Depot at Philippeville. However, no alternative site was found. Overcoming many and serious difficulties the hospital was able to accept its first patients on July 24. On July 31 it was accommodating 347 patients, of whom only 61 were Canadian. On August 31 there were 1,013. Between July 24 and August 31 the unit had admitted 2,226

patients, of whom 1,386 were Canadian. The anxiety concerning malaria was dispelled by the success of the malaria control measures that were instituted.

During the last week of the campaign the tasks of the field medical units serving with corps and divisions became, in so far as battle

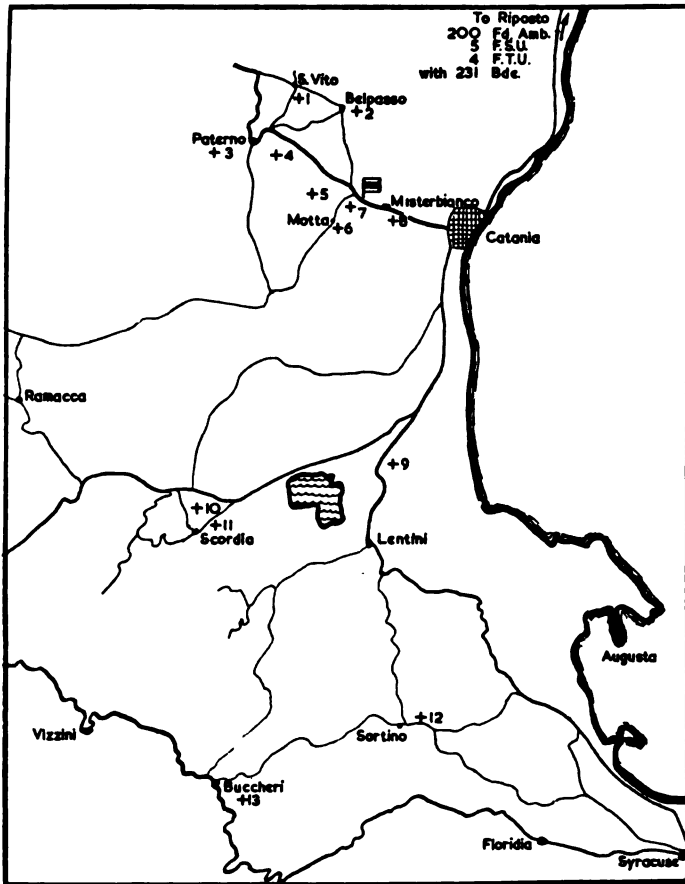


FIG. 15. The Distribution of the Medical Units of XIII Corps.
August 22, 1943.

- | | |
|---|------------------------------------|
| 1. 158 Fd. Amb. | 8. 141 Fd. Amb. 2 F.S.U. |
| 2. 164 Fd. Amb. 1 F.S.U. 150 M.D.U. | 9. 2 (Cdn.) Fd. Hyg. Sec. |
| 3. 132 Fd. Amb. 8 Mal. Fd. Lab. Detach. | 10. 2 (Cdn.) Lt. Fd. Amb. |
| 4. 15 C.C.S. 3 F.S.U. | 11. 1 (Cdn.) F.T.U. |
| 5. 7 C.C.S. 24 Fd. Hyg. Sec. | 12. 1 & 2 (Cdn.) F.D.Ss. |
| 6. 32 & 33 Beach Brick Medical Sections | 1 & 2 (Cdn.) F.S.U.s. |
| 7. 19 Fd. Hyg. Sec. | 5 & 9 (Cdn.) Fd. Amb.s. |
| | 13. 24 Beach Brick Medical Section |

▨ Corps H.Q.

casualties were concerned, greatly eased. The Axis forces were withdrawing from Sicily and only strong rearguards and extensive demolitions hindered the advance of the Allied armies. As Eighth Army pressed up the coast road from Catania to Messina and up the inland roads that sweep round Mount Etna to join the north coast road, the medical units moved forward in conformity. It will suffice to record the movements of these medical units during this period and immediately subsequent to the end of the campaign by means of a series of figures.

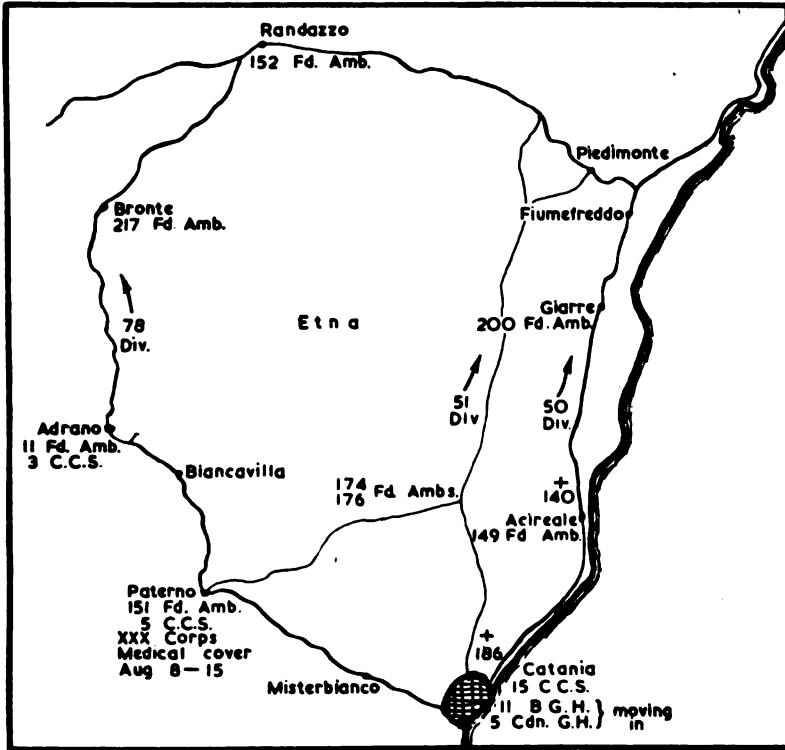


FIG. 16. The Movements of the Medical Units of XXX Corps.
August 8-15, 1943.
Evacuation Routes.

The medical arrangements during the closing phase of the Sicilian campaign were attuned not only to the conditions that obtained in the island but also to the preparations then being made in connexion with the imminent invasion of the Italian mainland. In this, the field medical units of Canadian 1st, 5th and 78th Divisions and of 231st Bde. and Cdn. 1st Tk. Bde. and 23rd Armd. Bde., were to be involved in the assault phase, as also were 3, 4 and 5 C.C.Ss. (Army), 7 and 15 C.C.Ss. (XIII Corps), 21 C.C.S. (X Corps), 14, 151 Lt. and 159 Fd. Amb.

appearance. The sick rate rose to an alarming figure, particularly in XIII Corps. When this corps was rested it became necessary to set up two medical centres, each consisting of a C.C.S. with a field ambulance attached, to hold and treat cases which otherwise, because of their very numbers, would have had to be sent to the base and so lost to the formations to which they belonged. 5 and 7 C.C.Ss. were set aside for the treatment of malaria cases, while 132 and 186 Fd. Ambs. were used for the organisation of convalescent centres.

8 Mob. Mal. Lab. made many surveys closely in the rear of the advancing troops. The result of careful selection of camp sites and vigorous anti-malaria measures would, it was hoped, keep the incidence of malaria under control. The high incidence must largely be attributed to bad malaria discipline in units and to the neglect fully to equip troops from North Africa and the United Kingdom with the means of personal protection. The system of divisional control of malaria control units proved most unsatisfactory and plans for the complete reorganisation of the service were submitted. In the meantime most of these units were withdrawn from divisions and placed under Army control.

THE HEALTH OF THE TROOPS

DISEASES OF SPECIAL MILITARY IMPORTANCE

Malaria. As was predicted by D.M.S., A.F.H.Q., and his colleagues, malaria was the major cause of loss of man-power during the Sicilian campaign. Though mepacrine was made available in ample quantity it was not always used to the best advantage. Eighth Army divisions from the M.E. were inclined to scorn it, one such division even failing to draw its supplies, so that A.F.H.Q. had to insist that the tablets should be accepted. Much mepacrine was wasted during the actual landing operations when the troops waded ashore, for the tablets were not packed in waterproof containers. It was reported that in many landing areas the sea became tinged with yellow.

A.D.H., Eighth Army, reported that the education of the troops concerning malaria had been neglected during the period of preparation for Operation 'Husky'. They had been trained for battle but not instructed how to remain healthy in a malarious environment. He pointed out that Eighth Army had been divided into two forces, XIII Corps which thrust through a highly malarious zone towards Catania and XXX Corps which moved along an inland route in a much less malarious region around the west flank of Mount Etna. After the fall of Catania a redistribution of divisions took place, XXX Corps coming to include 51st Division (as before), 78th Division (recently arrived from North Africa) and 50th Division (previously with XIII Corps). These three divisions, with very different experience in so far as malaria was concerned, were now in one and the same region and at equal risk. 50th Division, which

had had its epidemic of malaria prior to arrival in XXX Corps, had a malaria rate lower than those of the other two divisions. 51st and 78th Divisions were most heavily affected by malaria in August. During September their rates showed a steady and progressive decline. The explanation offered by A.D.H. was that in the reconstituted XXX Corps anti-malaria measures were thoroughly exercised with the result that

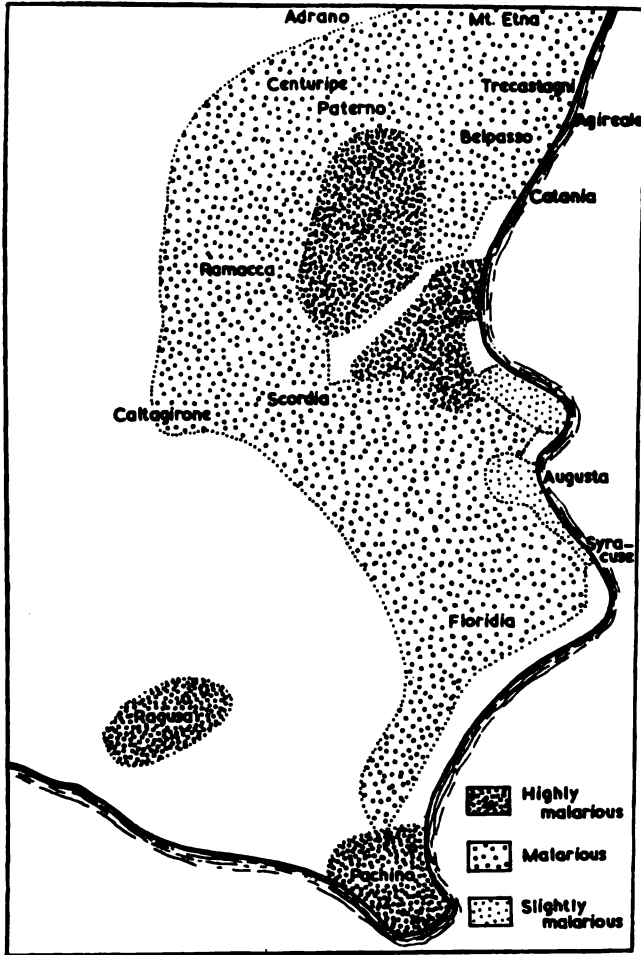


FIG. 18. The Malarious Areas of Eastern Sicily.

the incidence of malaria promptly fell. He recommended that slacks should be worn at all times and that fighting troops should be issued with a pair of denims for wear during combat; that mosquito-proof bivouac tents or bush-nets should be issued on an individual basis and that much more use should be made of repellent creams since veils were seldom used, being considered cumbersome by the troops.

The Canadians came out of the line on August 6. By the 15th they were in the grip of an epidemic of malaria. On the 24th, A.D.H. XIII Corps, to which Canadian 1st Division now belonged, advised that the anti-malaria measures that were being applied to the British formations within the Corps should be applied also and equally to the Canadians. A.D.M.S. Canadian 1st Division did not accept this suggestion. He did not consider that the incidence of malaria in the division was excessive and did not agree with the assumption that the N.Y.D. fever cases were, in fact, malarias. He regarded the proposal to administer 10 grains of quinine a day for three days in order to blanket the disease and so conserve man-power as being unscientific and, in any case, could not regard man-power as a problem in the division. He objected to this suppressive treatment for the reason that it would disturb the malaria discipline in the division and would lead to an epidemic in the future. However, by August 27 he had cause to reconsider his attitude, for the Canadian medical units were now filled to capacity. He reluctantly decided to apply this blanket treatment to the whole division, sick and well alike, and issued the necessary orders on the following day.

Up to and including August 31 there were 1,184 cases of malaria, actual and suspected, in Canadian 1st Division. The great majority of these occurred after the fighting had ceased.

July . . .	21 cases	
August 1-15	120	
16-31	1,043	4.2/1,000/day or 128/1,000/month
	1,184	1.4/1,000/day or 42.7/1,000/month

There can be no avoidance of the conclusion that there was a general neglect on the part of the division as a whole and of the individuals comprising it to make the fullest use of the measures of protection as were even then available. At this time the Army had not the means to protect itself against malaria, but it certainly did possess the means of limiting its ravages in formations not in the line.

The following extracts are from a report from the U.S. Seventh Army:

'Prior to embarkation Seventh Army was staged in North Africa in regions where malaria was endemic and was experiencing a fair amount of infection. Anti-malarial suppressive therapy was relaxed and the malaria rate was quadrupled, with a case incidence of 361 cases per week and an annual rate of 139 per 1,000.

'In Sicily cases occurring up to July 24 can be considered as due to infection in North Africa. From July 24 the rate rose to a case incidence of 1,598 a week, levelling off in the later weeks to 1,000. This high incidence can be attributed to the type of campaign with fast shifting combat, inability

of combat troops to protect themselves, variable and inadequate atebrine therapy in some units and lack of adequate control measures in rear areas occupied by supporting troops.

'From the period July 3-September 10, 1943, the Seventh Army reported 8,206 cases of malaria. In addition, 1,686 cases were estimated to have occurred in patients evacuated for other causes. Thus a total of 9,892 cases of malaria can be charged to this campaign, or 61 per cent. of all cases experienced in this theatre by American forces. The casualty figures show 1,302 killed; 5,087 wounded; 1,887 missing and 99 died of wounds—a total of 8,375 battle casualties. The loss due to malaria is thus equivalent to one division being lost for a period of at least 3-4 weeks and out of fighting for 6-8 weeks.

'It is believed that with better organisation of the malaria control measures and better anti-malaria discipline during the campaign in Sicily a substantial percentage of the cases could have been prevented. Several of the malaria control units activated for Sicily never arrived. It is further believed that a greater amount of anti-malaria measures could have been carried out without interference with the tactics of the campaign.

'These facts bring out the necessity of not only careful advance planning and anti-malaria training and discipline but also, whenever possible, the need for a thorough examination of the plan for malaria control.'

The following table of rates is of interest :

<i>Week ending</i>	<i>Strength</i>	<i>Rate/1,000/annum</i>
July 3 . . .	134,930	139.12
10 . . .	120,721	34.03
17 . . .	142,194	29.62
24 . . .	192,469	62.95
31 . . .	195,867	115.75
August 7 . . .	194,066	226.15
14 . . .	195,321	425.43
21 . . .	202,710	337.33
28 . . .	185,932	380.07
September 3 . . .	166,902	358.29
10 . . .	147,872	369.24
Average	170,817	227.08

Summary of instructions published in A.R.O. for Anti-Malaria Precautions.

1. The officer commanding a unit is responsible for all anti-malaria measures within his unit. He will ensure :

- (1) that each officer, N.C.O. and man is provided with either a mosquito, sandfly or bush net or mosquito-proof bivouac, and that this equipment is always kept in good repair ;
- (2) that such nets or bivouacs are used throughout the night by all ranks not on duty, and that frequent inspections are made at night to ensure that they are properly used :

- (3) that each officer, N.C.O. and man has a proper container with anti-mosquito cream and that the cream is smeared on all exposed parts of the body from sundown onwards at four-hourly intervals until they go under the protection of their nets or bivouacs. Special attention should be paid to its use by all ranks engaged in night duties and during night operations or alarms;
 - (4) that between one hour before sunset and sunrise all ranks wear slacks or 'long' shorts with flaps turned down, mosquito boots or boots with putties and gaiters, and long-sleeved shirts, jackets or tunics with sleeves fastened at the wrist and collar closed;
 - (5) that guards and sentries are provided with veils to be used after dark when circumstances permit, and where mosquitoes are troublesome and anti-mosquito cream is not sufficient to repel them;
 - (6) that two tablets of mepacrine are taken, on a parade, after the evening meal on each Monday and Wednesday. After swallowing the tablets copious draughts of water or sweet tea, if available, must be taken. These parades will be taken by an officer whenever available.
2. These instructions will be repeated in unit and formation orders at fortnightly intervals during the malaria season.
 3. Particular attention must be paid to unit detachments.

Report by Consulting Malariologist G.H.Q., M.E.F. August 22, 1943.

1. The present outbreak appears to have started about August 1, since which date there have been 1,711 cases definitely diagnosed as malaria and 4,650 cases of pyrexia in which no definite microscopical diagnosis was made. It is most unlikely that all of these latter are malaria as a considerable incidence of sandfly fever is to be expected in Sicily, but, assuming them to be all malaria, the total number of cases is 6,361. This represents an incidence per 1,000 per day of 0.36 definite malarias, 0.94 indefinite, with a total of 1.29, which is 40 per 1,000 per month.

2. Daily incidence rapidly reached a peak once cases started and does not show any further tendency to increase. The total cases in the week ending August 4 was 2,021 and the week ending August 21, 2,173. As the normal period of hospitalisation is about three weeks and the outbreak is now three weeks old, the peak of hospitalised cases should now have been reached.

3. Difficulty has occurred owing to the overloading of hospital accommodation and considerable disappointment has been caused among non-medical personnel. Yet there is no occasion for surprise, for the incidence is not excessive. It is to be compared with the following approximate figures for incidence in countries no more malarious:

Syria	about 20/1,000/month	in July–August–September 1942
Egypt	„ „ „	September–October–November 1942
Cyprus	over „ „	July–August–September 1942
Palestine	about 7/1,000/month	July–August–September 1943
Assam	„ 89/1,000/month	May 1943

These figures all refer to troops under static conditions, not subject to the difficulties of battle conditions, among whom some effort at site selection was always possible. Much higher figures have been experienced under battle conditions—the Australian I Corps suffered between 70 and 100/1,000/month casualties from malaria in the Syrian campaign and the following three months despite regular dosage with 10 grains quinine daily.

4. The following would appear to be the main causes of the high incidence of malaria in Sicily:

- (a) Fighting has taken place in intensely malarious areas. The Lentini and Catania Plains are most unhealthy and the concentration of XIII Corps in this area from July 14 to August 8 might be expected to be followed by a high incidence of malaria from July 28 to the end of August. A captured document showed that the danger of this area was known to the German Command and this may have influenced their tactics.
- (b) Difficulty has been experienced in the completely regular use of preventive measures, including suppressive treatment, under battle conditions.
- (c) Repeated and intense infection in a percentage of cases has probably resulted in a breakdown of suppression.
- (d) There was at first probably some failure to realise the importance of malaria prevention among combatant personnel and as a result precautions were not fully observed. For instance, one unit arranged to have its nets brought on D-day + 20 transport and is still without them.

5. The following measures are recommended to limit the incidence:

- (a) Units in which the incidence is high should be given a 'blanket' treatment with quinine, 20 grains on each of two or, if possible, three successive days.
- (b) Normal suppressive treatment with 0.4 grammes mepacrine per week should continue. The extreme importance of its strict enforcement should be impressed on all officers.
- (c) The fullest possible use should be made of the surveys made by 8 Malaria Field Laboratory in the siting of camps and concentration areas.
- (d) Anti-malaria control units should be brought completely under Army control so that their area of work is under central direction and can be properly co-ordinated with that of others, and so that continuity of responsibility can be ensured.
- (e) If pressure on hospital beds becomes acute, the period of hospitalisation should be decreased, provided adequate arrangements can be made to give the necessary drugs in the unit concerned.
- (f) Full use should be made of all captured microscopes to improve facilities for diagnosis, making full use of all competent personnel; if necessary an urgent request should be sent to M.E.F. for supplies of stains.

D.M.S., A.F.H.Q., having studied these reports, prepared a memo-

random for presentation to the Supreme Commander, A.F.H.Q. This was forwarded to the War Department at Washington, which thereupon issued an order with a world-wide distribution. From this the following excerpts are taken :

'I. The report of the Surgeon, A.F.H.Q., North Africa, on Malaria in the Sicilian Campaign is quoted below for your information and guidance.

1. In this brief campaign, conducted in a highly malarious country, the Seventh and Eighth Armies lost, from malaria alone, the equivalent of the fighting effectiveness of two infantry divisions. This loss exceeds that from battle casualties.

<i>Loss by</i>	<i>U.S. Seventh Army</i>	<i>Eighth Army</i>
Malaria . . .	9,892	11,590
Battle casualties . . .	8,375	9,000
		(approx.)

2. Numerous cases of malaria began in training and concentration areas in North Africa. In spite of medical recommendations there was a failure in many instances to adopt the suggestions made. In the case of the Seventh Army several hundred cases were left behind; the 400-500 cases which occurred in Sicily during the first 14 days were of North African origin.

In the Eighth Army there were approximately 1,000 cases left behind in North Africa, a further 300 developing in Sicily. Some of the divisions would not listen to advice.

3. Malaria of Sicilian origin began to appear after August 7 in both Armies, peaking a week later, 425, 43/1,000/annum, and 420, 39/1,000/annum, in the Seventh and Eighth Armies respectively. By September 11 the rates were 369.24 and 229.52 respectively. The mean average rate for the whole campaign was :

U.S. Seventh Army 227.08	Eighth Army 320.97
or with cases of	
undiagnosed fever added	
350	450

4. The reasons for this large outbreak of malaria were: slackness in atebine administration in some instances; failure of malaria control units to arrive early and lack of appreciation by the troops of the importance of personal protection methods such as repellents, veils and suitable clothing after sundown. When attention was drawn to the seriousness of the situation, precautions were willingly adopted; atebine was taken to the maximum and wholehearted co-operation was received by all concerned, with the result that the numbers dropped steadily.
5. Malaria contracted in Sicily made its appearance in Italy and resulted in high sick rates during the early days of the next campaign.
6. Many of the wounded developed malaria of Sicilian origin on their return to North Africa, so that the figures already quoted may be regarded as conservative.

7. Recommendations.

(a) Planning. In all future operations in Southern Europe, including Greece and the Balkans, planning should include anti-malaria measures.

(b) Before Embarkation.

(1) The health of the troops to be safeguarded before embarkation by the adoption of all anti-malaria measures recommended by Medical, including the preliminary administration of atebine to a maximum for 14 days.

(2) The supply of all equipment necessary up to 100 per cent., including 100 per cent. reserve to cover losses at sea. This includes repellents, nets, veils, atebine, slacks and shirts with sleeves; also insecticides, sprays, oils, etc.

(c) Command Responsibility. Commanders of formations at all levels to be held responsible for malaria measures and discipline. All officers and troops to be trained to be malaria-minded.

(d) Priority in Transport. The early arrival of malariologists attached to formation headquarters, malaria control units and items mentioned in (b) (2) above.

(e) Hospitalisation. With co-operation by command, it is anticipated that the malaria rate may be reduced to an approximate rate of 40/1,000/annum. In order that men may not be lost to the force, and since many may return after seven to ten days' treatment, it is necessary to include appropriate hospital units in the troop list, to arrive on a high priority.

8. Summary and Conclusions.

(a) The incidence of malaria in the Sicilian campaign may be taken at an approximate rate of 400/1,000/annum.

(b) It is anticipated that if all precautions are taken and all medical recommendations are followed, this can be reduced to 40/1,000/annum.

(c) Commanding Generals to be held responsible that all recommendations are carried out, measures adopted and action taken.

(d) Freedom from malaria depends largely on discipline.

II. The War Department concurs in the recommendations contained in the above report and desires to emphasise the following points:

1. Although past experience has repeatedly demonstrated the military importance of malaria, commanders apparently fail properly to appreciate this fact until after their own commands have suffered serious loss.
2. Strict enforcement of malaria discipline is the most important factor in reducing casualties from malaria during combat operations.
3. Administration of atebine in suppressive doses will delay the appearance of symptoms of malaria and enable men to stay 'on their feet' during a campaign. However, atebine does not prevent infection. It should be used only as a temporary expedient and should never be regarded as a true preventive measure.

4. Planning of operations in malarious territory should include provision for anti-malarial supplies and trained personnel to institute mosquito control measures at the earliest moment in the campaign.'

Venereal Diseases. North Africa, whole theatre :

19/1,000/annum U.S. troops

12/1,000/annum British

Algiers, now a leave centre :

29/1,000/annum, having fallen from 48

When the fighting died down in Sicily the V.D. rate soon reached 70/1,000/annum and within a month had nearly doubled itself. In Syracuse there were five known brothels and clandestine prostitution was common. The disease was not notifiable and there was no V.D. hospital. Orders were given that all troops should be kept out of the town, particularly at night, and that all the brothels should be picketed by the C.M.P. All ranks were warned against the danger of associating with clandestine prostitutes and the C.M.P. patrols and sentries were instructed not to allow women to loiter in the vicinity of camps.

The Enteric Group. Though these were endemic in many of the villages occupied by the troops, few cases occurred among military personnel.

Dysentery. Many mild cases occurred among troops who were inexperienced in life in the field.

Typhus. No instance of this disease was reported.

RATIONS

The 'compo' ration was on the whole excellent, and was well received by all ranks. Disadvantages were the uneven distribution when boxes had to be split, a tea, sugar and milk ration much less than M.E.F. scale, and the absence of fresh meat and bread. The ration was augmented by fresh vegetables and fruit, and bread baked in Malta was made available at an unexpectedly early date. The question of fresh meat supply was examined. Limited numbers of cattle and sheep were available. Inspection by a veterinary officer was ordered before and after slaughter.

THE SPECIALIST SERVICES

The organisation of these services for the Sicilian campaign was very much the same as that which had proved to be so efficient during the campaign in North Africa. The different specialist wings, wards and centres—psychiatric, orthopaedic maxillo-facial, chest, etc.—established during the campaign in North Africa, continued to function during the Sicilian. They were in Algiers for the most part, though in certain instances detachments were sent forward to hospital centres

nearer to Sicily. Thus provision was made for the treatment of orthopaedic cases in 100 B.G.H. at Philippeville, a consultation centre for E.N.T. cases was established at Oued Athmenia, a detachment of 4 Maxillo-facial Unit was sent to Thibar, to which hospital centre went also 5 Mobile Neurosurgical Unit in order to cut down the time between wounding and the receipt of specialist treatment. It was decided that if a case could be in the hands of the surgeon within forty-eight hours it was better to withhold operative interference in the forward medical units. The mobile ophthalmological unit once more proved its worth in the matter of saving man-power.

It was in Sicily that a significant development in penicillin therapy occurred. In the forward areas wounds were treated by insufflations of penicillin and sulphonamide powder. Definitive surgical measures combined with penicillin treatment were undertaken at base hospitals in Tripoli and Sousse three to twelve days after wounding.

THE ARMY TRANSFUSION SERVICE

5 B.T.U. (2 officers and 11 O.Rs.) left the United Kingdom in January 1943 and travelled by way of Bombay and Cairo to Tripoli where, at the beginning of June, it merged with a detachment of 30 O.Rs. of 1 B.T.U. which was located at Cairo. The B.T.U. functioned as an independent unit at first u/c Eighth Army and, after October 1943, under that of A.F.H.Q. Its duties included 'contacting', propaganda, blood grouping, capping, topping, refrigerating, packing and despatching blood; preparing high titre grouping sera from selected volunteer donors; putting up red cell concentrates for local hospitals; producing wet plasma, sterile distilled water, buffered water for malarial staining and solutions of citrate, dextrose, chloride, bicarbonate, sulphate, thio-sulphate, copper sulphate, sulphanilamide, sulphadiazine and sulphathiazole; cleaning, reconditioning, re-assembling and re-sterilising all transfusion equipment; maintaining bacteriological and chemical control on all technical work; constructing and painting insulated containers and boxes and crates of all sizes; manufacturing ice for packing with blood; inspecting, replacing where necessary and repacking all dry plasma, solutions and sets received back unused or new from the United Kingdom or elsewhere; storing and distributing by road, sea, transport aircraft and parachute container to Sicily, Malta, Yugoslavia, Greece and southern France all the transfusion supplies detailed above and all the penicillin of the theatre, together with many sera and vaccines for the South Africans and special forces in the Balkans; running courses of instruction for all ranks, both sexes and some twelve nationalities; examining records of transfusion matters throughout the theatre in all hospitals and giving advice where necessary; designing and executing posters for donor propaganda; distributing media for the Central

Pathological Lab.; breaking down Neostam monthly into therapeutic doses for command stores; servicing the refrigerators of British, Canadian, New Zealand and Polish F.T.U.s.; finding refrigerators in R.E. stores or civilian buildings and repairing, distributing and servicing nearly 200 of them in hospitals and C.C.Ss.; transporting hundreds of tons of medical equipment for medical stores and quantities of goods for the British and New Zealand Red Cross Societies; running a passenger service by road and air for hundreds of members of medical and welfare services on duty, posting, leave and honeymoons; collecting and delivering private mail from the United Kingdom to members of the F.T.U.s.; maintaining the 30 to 40 vehicles obtained, legally or otherwise, and carrying out full company battle duties, welfare, education and sport.

Seven F.T.U.s. (1, 2, 3, 4, 7, 35, 1 (Cdn.)) worked in Sicily. Each consisted of 1 medical officer, 2 medical orderlies and 1 R.A.S.C. driver. F.T.U.s. from the United Kingdom and North Africa had the one 3-ton lorry mounted with refrigerator; those from M.E. had a 15-cwt. truck in addition and this was of great value in forwarding supplies as well as avoiding too frequent movement of the lorry with its load of blood.

F.T.U.s. were attached to C.C.Ss. or to M.D.Ss. and occasionally to A.D.Ss. of field ambulances and, later, after their formation, commonly to F.D.Ss. They carried out all resuscitation work, sometimes able to work in shifts with another F.T.U. in a neighbouring unit, sometimes in shifts with members of the parent unit, not infrequently alone and continuously for several days at the height of a battle. F.T.U. officers came to be greatly respected by the surgeons, with whom they worked on the best of terms, for their clinical judgment in regard to operation and evacuation risks, and their decisions were usually paramount at F.D.S. level. The F.T.U. orderlies, and often the driver, became highly skilled in resuscitation work and were sometimes of more value than officers of parent units. On one occasion indeed, when the assembled officers of a unit had failed to find a way to give an essential transfusion, the F.T.U. private demonstrated with ease, administration by the dorsal vein of the penis. It is noteworthy that F.T.U.s. were more moderate in their use of transfusion than units to which no F.T.U. was attached.

The F.T.U. reserved for forward distribution (7 in the Sicilian campaign) worked in close and friendly contact with the medical staff of Army H.Q.; its officers estimated the general and local requirements from information freely given and their own personal intimate knowledge of the progress of battles. The commanding officer B.T.U. was informed daily of variations in demands by a series of informal letters and thereby wastage was kept to a minimum, over-stocking

avoided and blood used while still comparatively fresh. Supplies were delivered, without waiting to be asked, almost daily to every medical unit. Unsparing energy, great determination and considerable ingenuity were shown in getting up supplies in any conditions and by any available means of road, river, sea and air transport. Used equipment, down to the last detail, was collected and returned to the B.T.U., which could not possibly have continued to function for more than a few days without this almost 100 per cent. efficient service.

5 B.T.U. supplied the F.T.U.s. and other medical units in Sicily entirely from Tripoli, supplies being sent by hospital ships and, later, by air to the forward distributing F.T.U. in Syracuse. Sailing time was about twenty-four hours, but ships often lay about for days after clearing Tripoli harbour. Air freights were picked up by the officers commanding F.T.U.s. within four hours of leaving the B.T.U. The building at Tripoli occupied by the B.T.U. was an Italian public health centre and dispensary. It was small but suitable, although one difficulty was that fluctuations in the electric current caused the refrigerators to break down every day. Donors of 1st Armd. Division, under arrangement by D.A.D.M.S. Division, were bled on the B.T.U. premises, providing almost all the blood for Sicily.

In preparation for the Sicilian campaign, 1 B.T.U., with the help of 5 B.T.U., had prepared in March and April large quantities of wet plasma and serum. Since, after the landing, the follow-up of transfusion supplies would be by hospital ship and carrier, it was realised that they would effect at best a precarious liaison with the F.T.U.s. and maximum initial issues were therefore made to all units, members of the assault field ambulances carrying wet plasma and sets on their persons. Altogether over 6,000 wet plasma and over 7,000 glucose-saline sets were issued initially.

The supply of blood was difficult. O.C. 7 F.T.U. took 80 bottles of blood to 1 F.T.U. three days after it had embarked at Sfax and some of this blood was used within half an hour of landing. 3 and 4 F.T.U.s. had to bleed on the spot until supplies reached them. 2 F.T.U. from North Africa and 35 F.T.U. and 1 (Cdn.) F.T.U. from England had not even the means to do this. H.S. *Talamba* took 200 bottles of blood intended for 4 F.T.U. down with her. Unless a F.T.U. officer was present when hospital ships arrived, the blood would either be dumped where there was no refrigerator or taken back again. There came a time when no hospital ships sailed for at least five days and reserves of blood were exhausted. Fortunately, however, air transport to Cassibile became available and O.C. 5 B.T.U. was able by this means to rush in first an emergency and thereafter all maintenance supplies of blood.

7 F.T.U. was attached to 21 C.C.S. at Syracuse and functioned as the forward distributing centre, using 35 F.T.U. as an advanced blood

bank for F.T.U.s. further forward. O.C. 7 F.T.U. had his demand notes sent back by signal, sea and air. At times their passage was much delayed, one arriving three months later. A difficult situation was relieved by the casualties being half those expected, by gross and uneconomical excess of supplies over requirements and, lastly, by the policy of distributing supplies where they were most needed.

Experience showed that hospital carriers were useless for the carriage of blood and other bulk supplies, for sailings were uncertain, space limited and refrigerator facilities insufficient for the ship's own food. Medical officers on the ships were too busy on the run from Syracuse to Tripoli to give many infusions but H.S. *Aba* used 50 bottles of blood on one run. 'Hay boxes' for sea transport and 'ammo' boxes lined with German water filter pads, each containing at least one bottle of ice to four bottles of blood, were adequate for cool transport of blood for periods up to twenty-four hours even in the great heat experienced.

Supplies came initially from so many different sources and the invasion of Italy followed so quickly that nothing more than a rough estimate of the fluids infused can be made. It is thought that 2,000 bottles of blood and 3,000 bottles of plasma may have been administered—i.e. 43 bottles of blood and 65 bottles of plasma per 100 wounded. These figures are high in comparison with most others for subsequent battles and are probably based on too high estimates.

When visited on August 6–10 by the officers commanding 1 and 5 B.T.U.s., F.T.U.s. reported activity as below:

F.T.U.	Cases transfused	Bottles of Blood used	Bottles of Plasma used	Bottles of G. Saline used	Reactions
1	80	130	110	200	Bld. 1 slt., 2 sev.
3	86	150	200	?	Pla. 2 slt.
4	165	132	400	350	Bld. 6 slt. Sal. Phlebitis
7	49	97	20	138	Bld. 4 slt., 5 mod., 2 sev.
35	80	150	250	250	Nil
1 (Cdn.)	100	85	280	100	Bld. 6, Pla. 3, Sal. 1
	560	744	1,260	1,038	
Av./bottles/case		1.5	2.2	1.8	

(Bld.=blood; Pla.=plasma; Sal.=saline; slt.=slight; mod.=moderate; sev.=severe).

ADMINISTRATIVE LESSONS LEARNT

1. Extracts from: *Combined Operations. Lessons learnt in the Mediterranean, 1943.*

Medical Transport. In many cases medical personnel and their

equipment have been distributed over different ships. Though obviously the splitting of major units is necessary each section must be a complete entity.

General hospitals should be packed for shipping in 75 bed sections, each section complete, to permit gradual opening of complete blocks.

Hospital Ships and Carriers. All hospital ships and carriers require water ambulances. These should be on the design of landing craft assault, with ramps. Landing craft infantry were also used successfully and have obvious advantages over minor craft in rough weather on steep beaches.

When used in the assault stage ships and carriers require additional personnel for manning operation theatres.

Air Evacuation. A number of planes must be allocated for the sole purpose of medical evacuation. A high priority must be given to evacuation in other planes.

A medical unit of the nature of a field dressing station is required on an airfield used for evacuation of casualties. This should be included in the order of battle and not improvised from divisional or corps troops.

Medical Supplies. The composite brick system has proved a success in the early days of the assault.

A depot of medical stores, which should land on or about D-day+4, should contain over its usual scales :

- one 10-ton brick to replenish general hospitals;
- one 1-ton brick for each three field ambulances of the force.

A small port detachment R.A.M.C. is required at each port or beach to sort stores and avoid delays.

Beach Group Units

Medical :

The main links in the chain of evacuation were :

1. beach medical area;
2. beach evacuation post;
3. hospital ship or carrier.

The second of these must be adequately staffed and have accommodation for casualties in the event of their embarkation being delayed.

The Voyage. It was noted that the conditions on the ships were unsatisfactory; there was much overcrowding and the rations were unvaried.

2. Extracts from: *Administrative Lessons from Operations in Sicily.* (Appendix C of A.F.H.Q. 1620/2/Q (Maint.) Nov. 7, 1943).

The control of hospital ships presents many difficulties and it is essential that precise details of the procedure for calling forward are

agreed by Navy, Mov. & Tn. and Medical, before the operation commences. The most satisfactory method appears to be the placing of the requisite number of hospital ships or carriers under command of the flag officer covering the immediate area of operations. He then delegates the authority for calling the ships to the D.S.T.O. who is in close touch with Mov. & Tn. and Medical staffs. It seems important that there should be some port within reasonable reach of the field of operations where all hospital ships can stand off and await calling forward.

Air evacuation has been extraordinarily valuable. The chief difficulty, however, for the medical staff officer arises from the fact that the aeroplanes are primarily for freight carrying and are only used for casualties on the return trip as a secondary consideration. As a result situations arise where there are excellent opportunities for air evacuation and insufficient casualties to fill the planes, followed by a period in which precisely the reverse occurs. The solution for this appears to be either to detail special Red Cross planes or to detail certain planes under control of the medical authorities primarily for the evacuation of casualties and the forward carriage of medical stores, blood, etc. By this means planes could be demanded in accordance with the casualties requiring evacuation.

Early holding capacity is essential where a high sick rate owing to prevalent disease is to be expected. General hospitals should therefore be given a high priority whenever this is likely. In this connexion two main factors delayed the full functioning of general hospitals soon after their arrival:

- (a) loss of equipment by enemy action;
- (b) delay in arrival of equipment after personnel had arrived.

Both the above could be to some extent avoided by despatching hospitals in complete sections capable of opening and functioning immediately. Should one section be lost it is not such a serious thing as losing the complete I.1248 of a general hospital.

Transport. Lack of transport in the early stages is another factor which delays the functioning of a hospital. It is considered that all hospitals should be on the W.E. scale and that the transport be timed to arrive with the first hospital section.

Convalescent depots should, for the same reason, be given a reasonably high priority when a high sick rate is expected. They are of enormous value in increasing the holding capacity of hospitals.

Special teams, units, etc. Chest and orthopaedic units should not be called forward until there is sufficient holding capacity to retain the cases some considerable time—six weeks in the case of a chest unit and three months in the case of an orthopaedic unit. Neurosurgical and

maxillo-facial teams or detachments and the mobile ophthalmic units are, however, required early.

Mosquito nets, bivouacs, etc. Some troops arrived without bush nets, bivouac tents and sandfly curtains. Some who arrived with bivouac tents found themselves accommodated in buildings, others with mosquito nets only were required to sleep in the open. It would seem to be necessary in circumstances like these to have a sufficient reserve of both types of protection at all ports of disembarkation.

REFLECTIONS ON THE CAMPAIGN BY D.D.M.S.,
XXX CORPS

Planning for Operation 'Husky' was complicated by the wide dispersal of the formations that were to come under command :

Canadian 1st Division	United Kingdom
51st Division	Djidjelli area, Tunisia
231st Inf. Bde. Gp.	Nile Delta

and also by the fact that certain of the C.C.Ss., F.S.U.s. and F.T.U.s. which were to be attached to Corps for the operation were late in joining 51st Division and 231st Inf. Bde. Gp. for the reason that they were operationally employed in the Tunisian campaign.

It was therefore exceedingly difficult for D.D.M.S. Corps personally to oversee the preparation and training of the medical services of the constituent formations. It was essential for him to maintain the closest contact with XXX Corps planning staff which was in Cairo from April 27 to June 5 and thereafter in the Sfax-Sousse area in Tunisia. Canadian 1st Division had representatives at Corps H.Q. in Cairo but these did not include representatives of the medical services.

As the medical tactical plan developed, information and advice was sent to the medical H.Q.s. of all formations under command XXX Corps.

It had been agreed between War Office and Canadian 1st Division that each man should receive one mepacrine tablet daily at sea for six days prior to D-day. But there was no provision for the troops on landing, the first follow-up supply of mepacrine being due on D-day + 3 and to be unloaded an indefinite number of days thereafter. Information concerning malaria from G.H.Q., M.E., and D.D.M.S., Eighth Army, and bearing directly on this question, was much delayed on its passage to Canadian 1st and 51st Division *via* War Office. However, it did reach these formations just in time to permit desirable modification of the arrangements to be made.

Medical planning, after final agreement had been reached between D.M.S., G.H.Q., M.E.F., D.D.M.S., Eighth Army and D.D.M.S., XXX Corps, was disturbed on several occasions by alterations of scales of transport for the various medical units and of the strength of the units themselves. In the end the landing scales were reduced to a

dangerously low level, although the final medical allotment was fair and balanced relative to the essential fighting forces.

Deficiencies in respect of personnel, equipment and tentage were made good by arrangement between D.D.M.S. Eighth Army and D.D.M.S. XXX Corps. Additional personnel, equipment and stores for 21 C.C.S. and for 200 Fd. Amb. attached to 231st Inf. Bde. Gp., a complete M.D.S. of 174 Fd. Amb. and a company of 159 Fd. Amb. were embarked on hospital ships due to arrive off the assault beaches on D-day.

TRAINING

It is essential that training shall be started as early as possible and that all the medical units concerned shall be concentrated in order that every one of them may come to possess a confident knowledge of its particular duties and shall have been able to relate these to those of all the rest.

OPERATION 'HUSKY'

This was by far the largest and most comprehensive amphibious operation thus far planned. It involved long distances by sea and long periods on ships—two days for 51st Division, ten days for 231st Inf. Bde. Gp. and as many as twenty-five days for Canadian 1st Division. Shipping space was therefore a factor of considerable importance, far more so than it would be in the case of a shorter sea journey.

The landings encountered only slight opposition. The initial advances were therefore both rapid and considerable. The medical units were required to be mobile and yet carry sufficient resources with them. As the advance continued the terrain became more difficult, enemy resistance stiffened and the number of casualties increased. The route of evacuation became undesirably long, arduous and rough. It was then that the paucity of M.A.C. cars gave rise to anxiety.

In such an operation as this the medical services are bound to encounter difficulty. There is a limit, quickly reached, to the number and resources of the medical units that can be landed in the earliest stages of the assault. If the landing is strenuously opposed then the inadequate medical units will be called upon to treat and hold casualties whose numbers overwhelm the available facilities. If, on the other hand, the landing is unopposed and the initial advance rapid, then the main difficulty will be that of evacuating the relatively small number of casualties along an ever-lengthening line of evacuation. It is indeed difficult to plan, having regard to both of these possibilities; yet it has to be done.

RECOMMENDATIONS

- (a) The medical tactical plan on the higher level should be completed at the earliest possible date.

- (b) A.D.M.S. should be informed, in as much detail as possible, at the earliest possible date.
- (c) Orders of battle, based on estimates of casualties, should be decided early and as far as possible not varied thereafter unless a radical alteration in the tactical plan makes this inevitable.
- (d) All medical officers to be involved should be required to acquaint themselves with the principles that underlie such an operation.
- (e) Early liaison should be established between the administrative medical officers concerned, including A.Ds.M.S. and S.N.O.L., P.M.L.O., beach masters of the naval and beach brick staffs, including S.M.Os. beaches, so that a clear policy of the procedure to be adopted in each formation, laid down in writing, may be assured.

MEDICAL PROVISION

The Field Ambulance. The field ambulance is the first and main plank of any solid divisional medical service and must be given a sufficiency of personnel, equipment, supplies, tentage and vehicles to permit a reasonable holding capacity, adequate treatment and sufficient mobility. In general the minimum should be :

- (a) one light section to accompany each battalion R.A.P. on the assault.
This is necessary for the reason that not infrequently battalions are not in contact, and as soon as a brigade line is formed the normal routine should be assumed, the light sections combining to form an A.D.S. This should be possible as soon as all the battalions have landed in the case of a reserve or follow up brigade;
- (b) one field ambulance per brigade, less one company attached as sections to battalions. This field ambulance should land immediately after brigade H.Q.;
- (c) for each field ambulance, including its A.D.S., there should be in the assault phase :

ambulance cars	.	.	8
3-ton lorries	.	.	6
water cart	.	.	1
jeeps with stretcher fitting			3
plus one 3-ton lorry for each			
F.S.U. & F.T.U. attached.			

These should be built up to normal scale as conditions permit. Ambulance cars should be increased to 12 for each field ambulance. If shipping space is too limited to permit the full complement of field ambulances per division, provision should be made to bring the M.D.S., without vehicles but with personnel, supplies and tentage, on the first hospital ship due to arrive at the appropriate beach.

Medical units and stores should not be split up among different ships

or landing craft. Because these were so divided 9 (Cdn.) Fd. Amb. and 1 Adv. Depot Med. Stores were seriously handicapped.

The C.C.S. There should be one C.C.S. per division, this to become a corps unit as soon as possible after the arrival of corps H.Q. Its light section should land, if possible, on D-day, after divisional H.Q. Its minimum strength should be 100, being built up to this number by nursing personnel and cooks from the heavy section. Its minimum transport should be ten 3-ton lorries, plus a vehicle for each F.S.U. and F.T.U. attached. The heavy section should join the light section on the earliest follow up convoy and not later than D-day+3.

The F.S.U. and F.T.U. There should be a minimum of two F.S.U.s. and one F.T.U. per division. They should be distributed between the open M.D.S. and the C.C.S. They should land with the first field ambulance to go ashore.

The ideal minimum provision is one equipped F.S.U. and one non-equipped surgical team with each divisional M.D.S. and with each C.C.S. This arrangement allows each operating table to cover a twenty-four-hour shift and avoids fatigue and loss of efficiency as well as economising in vehicles and equipment. In addition there should be one F.T.U. with each division and one with each C.C.S.

Packs for Medical Supplies. In the assault, personnel of light sections M.D.S. and C.C.S. should carry the most essential and immediate supplies and equipment ashore in packs or rucksacks, the individual load of these not exceeding 20 lb.

Waterproof bags were available to fit inside packs and medical companions.

Jeep Stretcher Carrying Frames or Jeeps Modified. Battalions and brigades can usually land jeeps early. If possible, at least two or three should be allotted to the A.D.S. If this is impossible then they should be loaned to the A.D.S. from time to time. The XXX Corps model jeep stretcher frame proved to be very useful. It was light (approximately 105 lb.) and could be fitted to any jeep in about five minutes. Two or three of them could easily be carried in the R.M.Os. truck or in an ambulance car. The frame carried three lying, one sitting and two lying, or three sitting, plus the driver. Of them there should be two per R.A.P., one per artillery regiment and three per A.D.S., or 30 per division.

*Cacolets.** On several occasions in Sicily cacolets would have been very useful. After Messina was occupied a number of Italian cacolets for sitting cases were captured.

Bren Carriers. These were used on occasion for forward evacuation to the R.A.P. If a few of these carriers in each battalion had been fitted

* Cacolet—a chair suspended from a pack-saddle to carry wounded.

to carry two stretchers, as is possible, it would have been helpful, for in rough country without tracks Bren carriers are more comfortable than are jeeps.

Flint Stretcher Gear. Large numbers of 3-ton lorries were fitted with Flint stretcher-carrying gear, but transport was in such short supply that they could not be spared for evacuation purposes. Nevertheless, D.D.M.S. XXX Corps is firmly of the opinion that the 3-ton lorries of medical units involved in an assault of this kind should be so fitted.

The M.A.C. Until almost the final stage of this campaign there was a serious shortage of M.A.C. cars. This led to much delay in evacuation, to fast driving on the part of the M.A.C. drivers, who had every reason to know that their aid was urgently required, and to an undesirable increase in the time between the receipt of the wound and the intervention of the surgeon. It became necessary to evacuate in the dark over much damaged mountain roads; much suffering was therefore caused and great exhaustion suffered by the drivers.

According to the medical tactical plan, one platoon (33 cars) of 60 M.A.C. would reach XXX Corps on D-day+5-D-day+7 by L.S.Ts. from Sousse. But they were delayed for a week by the decision to bring 78th Division to Sicily. This delay was then further extended by an alteration in the system of priorities whereby the vehicles of 60 M.A.C. and of 174 Fd. Amb. gave place to those of other units. Indeed it was not until D-day+20 that three cars of 60 M.A.C. arrived. A few days later another seven cars reached XXX Corps on a L.S.T. which had sailed with room for six further vehicles vacant. The M.A.C. itself did not arrive until August 13.

D.D.M.S. Corps expresses the reasonable view that when priorities have been arranged and have formed the basis of tactical planning they should not be disturbed without information being given to all concerned so that these may have the opportunity of adjusting their arrangements.

When 78th Division was in Bronte, Canadian 1st Division in Regalbuto and 51st Division in Viagrande (inland from Acireale), there were only 25 cars of 146 M.A.C. (Army) and 10 cars of 60 M.A.C. available for evacuation to Catania. Of these 35 cars, 10 were with the Canadian Division, 10 with 78th Division, 10 at C.C.S. and 5 with 51st Division.

	<i>Journey</i>	<i>Mileage</i>	<i>Cars available</i>
July 18-25	Leonforte-Caltagirone .	60	} Cdn. 1st Div. 20 130 miles 51st Div. 75 miles
	Caltagirone-Vizzini .	25	
	Vizzini-Florida .	45	
	Ramacca-Vizzini .	30	



PLATE I. Stretcher-bearers moving forward through a Sicilian village.

[Imperial War Museum



PLATE II. The Durham Light Infantry enter Catania. Italian nurses tend the lightly wounded.

[Imperial War Museum]



PLATE III. Carriers being prepared for the evacuation of casualties.

[Imperial War Museum]



PLATE IV. A Main Dressing Station in a Sicilian church. Casualties being evacuated therefrom to a nearby Air Evacuation Centre.

[Imperial War Museum



PLATE V. Forward Surgery in a Sicilian Monastery.

[Imperial War Museum



PLATE VI. Casualties being received at an Air Evacuation Centre in Sicily.

[Imperial War Museum]



PLATE VII. Casualties being loaded into a Douglas D.C.3 Transport plane at an Air Evacuation Centre, Sicily.

[Imperial War Museum]



PLATE VIII. *En route* from Catania to Tunis.

[Imperial War Museum



PLATE IX. Casualties evacuated from Sicily by air reach 99 British General Hospital, Algiers.

[Imperial War Museum



PLATE X. An *ad hoc* Infant Welfare Centre, Sicily.

	<i>Journey</i>	<i>Mileage</i>	<i>Cars available</i>	
July 25- August 8	Regalbuto-Ramacca . . .	40	} Cdn. 1st Div. 93 miles 78th Div. 93 miles 51st Div. 73 miles	25
	Ramacca-Scordia . . .	15		then
	Scordia-Syracuse . . .	38		35
	Centuripe-Ramacca . . .	40		
	Paterno-Scordia . . .	35		
August 8-15	Randazzo-Paterno . . .	28	} 78th Div. 41 miles 51st Div. 41 miles	25 then
	Paterno-Catania . . .	11		93 when
	Piedmonte-Paterno . . .	30		60 M.A.C. arrived on August 13
August 15-20	M.R. 2762 (north-west of Messina)-Randazzo . . .	82	} 51st Div. 128 miles 78th Div. 46 miles 50th Div. 39 miles	60
	Randazzo-Giarre . . .	22		
	Giarre-Catania . . .	24		
	Taormina-Giarre . . .	15		
August 20- September 2	M.R. 2762-Novara-Giarre . . .	65		
	Messina-Giarre . . .	45		60
	Giarre-Catania . . .	24		

Hospital Ships and Carriers. In the Sicilian campaign while hospital ships were off-shore, shore-to-ship evacuation presented no difficulties. After the first week these ships were able to make use of a good harbour. Hospital carriers, however, were much more convenient for they could come close inshore, could enter small harbours and each of them carried six water ambulances, handy motor craft taking five or six lying cases and ten sitting. They were easily swung out and lowered from davits and, when returning full, could be hauled up and the patients taken out on the top deck. The disadvantages of the carriers were that their capacity was only 50 per cent. that of the hospital ship, that they possessed few facilities for major surgery and that they had no refrigerators for blood.

D.D.M.S. Corps raised the question as to whether or not it would be reasonable and feasible to provide a number of water ambulances for each hospital ship when engaged in such an operation as this for use until such time as a suitable port has become available.

Intercommunication. It was decided by higher authority that in Sicily the medical wireless net was not required. As things turned out, line communication was impossible with C.C.Ss. and difficult and insecure with A.Ds.M.S. In fact, as the distances between front and rear increased, A.Ds.M.S. came to be out of touch. Signals were therefore overburdened and even 'immediate' messages were greatly delayed. The roads were so tortuous and bad that the D.R. service was useless for anything but the ordinary routine work.

D.D.M.S.'s wireless set was on low priority and did not arrive until late July. A set originally held by 1 (N.Z.) C.C.S. for XXX Corps also arrived and was given to 3 C.C.S. which happened to have two men trained in this work. Thus a most useful link with Corps medical area was established.

In view of the difficulties that beset intercommunication even under the best of circumstances, a line communication, even when freely available to medical units in the field, is never enough. D.D.M.S. considers that it is essential that D.Ds.M.S., A.Ds.M.S. and C.C.Ss. should be on a wireless net at a very early date after the landing and that a second net should be available per division for the M.D.S. then open.

Beach Brick Medical Unit

M.E.F. establishment . 2 officers, 21 O.Rs. R.A.M.C., 16 Indian personnel, 4 R.A.S.C., 2 ambulance cars 4 × 4 and 1 M/C.

N.A. establishment . A field ambulance less one company with 8 ambulance cars, the remaining coy. providing personnel as required for loading hospital ships and for accompanying casualties evacuated on L.S.T., L.C.T. or L.C.I. F.S.U. attached.

United Kingdom establishment . . . Not standard. In Operation 'Husky' one corps F.D.S.

In Operation 'Husky' the North African establishment proved to be the best. Its size and composition enabled it to treat casualties occurring on the beach and, later, casualties among beach brick personnel. The M.E. scale proved to be too small to permit of treatment of casualties occurring on the beaches among the assault and follow-up troops until a hospital ship or C.C.S. arrived. It had to evacuate its casualties to a divisional medical unit. The Canadians used a divisional unit for this purpose. This proved to be unsatisfactory since it took from corps or division a unit necessary for either as the advance proceeded. The beach brick undoubtedly needs a medical unit of its own, for such a brick may be required to function for several weeks or it may be required to embark as a self-contained group for duties elsewhere.

According to the N.A. establishment, the officer commanding the medical section of the brick was S.M.O. of the beach. As evacuation from shore to ship was a naval responsibility S.M.O. beach became responsible for ensuring that, by liaison with the beachmaster or P.M.L.O. through S.N.O.L., all necessary information was given concerning casualties, hospital ships or craft available to, or received by, the naval authorities and the S.M.O.

S.M.O. beach brick was also responsible for receiving into a medical dump all stores, blankets, etc., from the hospital ships and M.T. ships. Blankets and stretchers were dumped in ordnance base dumps, medical comforts in D.I.D., both at the disposal of S.M.O. beach. With a field ambulance, as in the N.A. brick, these jobs can be well done for there is a Q.M. and staff available.

Transfusion Materials

Field ambulance	.	172 pints wet plasma
		86 giving sets
		(60 pints with light section)
C.C.S.	.	300 pints wet plasma
		100 giving sets
F.T.U.	.	200 pints wet plasma
		100 giving sets

Medical stores landed from hospital ship included 300 pints of serum, 900 pints of saline and 150 giving sets. These allotments proved to be ample. Citrate and sulphadiazine were also available in sufficient amounts with all medical units.

Early in the course of planning, XXX Corps was informed that blood could not accompany the assault troops; the time between departure and arrival was so long that, even if kept in insulated boxes, blood would become unusable, because F.T.U. refrigerator vehicles could not be allowed to make use of their motors below decks in view of the danger of fire and CO₂ poisoning and because refrigeration facilities were not available on all ships. Blood would therefore be available on hospital ships only. However, XXX Corps, save for Canadian 1st Division, did land with blood supplies.

The following arrangements were made :

- (a) Where L.S.I. (usually large liners) were used, the officer commanding the F.T.U. obtained blood in insulated boxes at the last moment before sailing and immediately stored it in the ship's vegetable cooler room (the temperature of the meat store was too low). On landing (1) if the F.T.U. vehicle was on the same ship, the blood, in insulated boxes and packed in ice, was placed in the vehicle and as soon as this got ashore its motor was started. The insulated boxes were then used for sending the blood to A.D.Ss., etc.; (2) if the F.T.U. vehicle was not on the same ship, the boxes were carried ashore, there to be placed in the vehicle refrigerator. If no F.T.U. was accompanying the formation, the blood could be used up to twenty-four hours, by which time a hospital ship would arrive with fresh supplies.
- (b) Where L.S.T. were used, and when the F.T.U. vehicle was on the weather top deck above the tank deck, permission was

obtained to run the motor for a sufficient period of time each day. Blood reached the L.S.T. by plane and launch on the afternoon prior to sailing and the vehicle landed with the M.D.S. on D-day.

Blood supplies arrived regularly in hospital ships and later by plane from Tripoli and the Transfusion Service functioned efficiently.

Morphine Syrettes (Tubunic). These were of considerable value to R.M.Os. during the initial stages of the assault. D.D.M.S. calls attention to the importance of noting the administration of morphine on the patient's forehead and on W.3118 and to the desirability of training certain stretcher-bearers and officers in the mode of administration.

Evacuation. Hospital ships and carriers. The loading of these presented no difficulties. The sea was smooth and on the first day only 25 casualties were embarked on the ship off Bark South Beach (51st Division). This ship, however, sailed for Tripoli on the following day. No information concerning this event reached the medical services.

The hospital carrier for Bark West (Canadian 1st Division) also arrived promptly on D-day and as water ambulances were available embarkation was simple and straightforward.

The hospital ship for Bark East (231st Inf. Bde. Gp.) did not arrive until D-day+1. Casualties were few, however, and so no great inconvenience resulted.

Thereafter, until Syracuse became available on D-day+4, a hospital ship or carrier was present off Bark East/West.

Air Evacuation was used extensively, but not in the forward areas of XXX Corps, where the country was unsuitable for landing grounds.

Nursing Officers. D.D.M.S. records his firm opinion that nursing officers should join their C.C.Ss. as early as possible in order to raise the standard of care to its maximum level.

Hygiene and Sanitation. D.D.M.S. recommends that one N.C.O. of a field hygiene section should be attached to the M.D.S. accompanying each brigade. His primary duty should be that of supervising water supplies and to this end he should be equipped with a case, water testing sterilisation, and a case, water testing poisons. He should be given a motor cycle.

A detachment of the field hygiene section, including the officer commanding, should land on D-day+3. If the area is known to be, or is likely to be, malarious, so also should one A.M.C.U. Trucks for their transport should accompany them.

The rest of the field hygiene section and another A.M.C.U. should arrive not later than D-day+14.

Anti-malaria Precautions. In Sicily XXX Corps was for the first time

faced with the problem of malaria. For this encounter it was unprepared. Out of its experience D.D.M.S. reached the following conclusions :

- (a) the policy relating to malaria control must be fixed at an early stage of the planning period and thereafter adhered to;
- (b) this policy must be uniform throughout the force. This was not so in Sicily. Troops arriving from the Middle East were taking two tablets of mepacrine on Mondays and Wednesdays; those from Tunisia were taking one tablet on Monday, Tuesday, Thursday and Friday;
- (c) a special malaria officer per division should be appointed and trained early in the planning period;
- (d) at least one thoroughly experienced M.C.U. should be available with each corps;
- (e) suppressive treatment with mepacrine should be commenced well before embarkation, the maximum dosage being reached ten to fourteen days prior to D-day. During embarkation and the early stages of landing, each soldier should carry a supply of mepacrine sufficient for four weeks. This should be carried on his person and in a particular pocket. Since inevitably many containers are lost, a reserve of 20 per cent. should be carried by the unit;
- (f) in Sicily the most satisfactory dosage of mepacrine appeared to be one tablet of 0.06 grammes taken daily, unless the area and the circumstances were such that an increased daily dosage of 0.1 gramme was recommended;
- (g) it was noted that the troops found every kind of reason for not using Mark I anti-mosquito cream. It was very messy and greasy. They much preferred the Mark II variety;
- (h) in malarious areas slacks should be worn and shorts not issued;
- (i) many reinforcements arrived without their anti-malaria kit, nets, cream and mepacrine, and in consequence their sojourn in the forward areas was exceedingly brief. The net must be a personal issue like the helmet and the respirator;
- (j) there should be a fixed policy that will predetermine the actions of a division should an outbreak of malaria occur;
- (k) a uniform type of *pro forma* should be used in all medical units and this should show details and dates of the course of treatment given. This *pro forma* should accompany the patient wherever he goes until his treatment is completed;
- (l) if, under circumstances in which the numbers of patients are high enough to overtax hospital accommodation, it should be necessary to discharge a patient before his course of treatment is completed, he should not be discharged to return *via* transit camps but should be sent back to a field ambulance of his division. Under no circumstances should he be required to make his own way back to his unit. The ideal place for continuing treatment in such a case is the divisional rest camp, to which a company, or even half a company, of a field ambulance is attached.

Civilian Casualties. The medical services must be prepared to care for large numbers of civilian casualties until A.M.G.O.T. takes over. Throughout this campaign no civilian service of medical personnel existed. Captured enemy medical officers and orderlies were used to meet civilian needs. Rations for civilian patients were obtained through D.D.S.T. Corps and C.R.A.S.C. division.

Plates I-X illustrate various phases of the campaign.

SAMPLE STATISTICS

Casualties (Eighth Army)

TABLE I

July 10-17

Total casualties up to D-day + 7 numbered 1,517, or about one-sixth of the number estimated for this period.

<i>Casualties evacuated</i>	
July 11 . . .	141
12 . . .	284
13 . . .	267
14 . . .	220
15 . . .	257
16 . . .	327
17 . . .	—

It was reported that casualties evacuated from the beaches on reaching Tripoli were in good condition, as were also the survivors from H.S. *Talamba* (270 including 100 patients) bombed and sunk on July 10.

TABLE 2

July 18-24

Sick	Rate per 1,000 per day	Battle casualties	Rate per 1,000 per day	Evacuated by sea	Evacuated by air	Total remaining
1,142	0.92	3,103	2.52	2,682	664	527

Total sick to date . . .	1,815
Total battle casualties . . .	4,620
Grand Total . . .	6,435
Total evacuated from Sicily . . .	4,751

The sick rate for the first twelve days of the campaign was 0.64 per 1,000. The slight rise to 0.92 was due to the incidence of diarrhoea and septic skin conditions. Eighth Army included a large number of troops newly arrived from the United Kingdom and unused to field conditions in a climate such as that of Sicily. A few cases of dysentery and malaria (of North African origin) occurred and there was one death from M.T.

TABLE 3
July 25-31

Sick	Rate per 1,000 per day	Battle casualties	Strength	Rate per 1,000 per day	Evacuated by sea	Evacuated by air	Total remaining
2,152	1.75	955	176,000	0.78	1,307	603	899

Total sick to date 3,967
 Total battle casualties 5,575
 Grand Total 9,542
 Total evacuated from Sicily 6,661
 (including 371 Germans
 554 Italians)

The sick rate showed a distinct rise as compared with the previous week's figure. This was accounted for by (a) a comparative slack period as regards actual fighting and (b) a true rise due to enteritis, diarrhoea and septic conditions. The sick rate was much higher in those formations newly out from the United Kingdom.

By the beginning of this period it became apparent that the troops were showing signs of fatigue. This was not surprising, for they had endured a period of intensive training, a sea voyage and a fortnight's hard fighting. The weather was hot and humid, the men had had broken sleep and little rest and they were on a new ration scale which contained less tea, sugar and milk than did the M.E.F. scale. Moreover, they were not drinking as much water as they had previously been accustomed to.

It was recommended that when the tactical situation permitted there should be a period of at least forty-eight hours' complete rest, including as much sleep as possible, bathing or ablution facilities and a change of clothing. It was recommended further that there should be an additional issue for forty-eight hours of tea ($\frac{1}{2}$ oz.), sugar (1 oz.), milk (2 oz.) and a rum ration before turning in at night.

TABLE 4
August 1-7

Sick	Rate per 1,000 per day	Battle casualties	Rate per 1,000 per day	Strength	Evacuated by sea	Evacuated by air	Total remaining
4,140	3.52	946	0.80	168,000	2,604	461	1,140

Total sick to date 8,107
 Total battle casualties 6,521
 Total evacuated from Sicily 9,726
 (including 449 Germans
 554 Italians)

The rise in the sick rate was accounted for by the increasing prevalence of malaria and other fevers, which made up approximately 3 per 1,000 of the total. Apart from malaria the sick rate remained remarkably low.

TABLE 5
August 8-14

Sick	Rate per 1,000 per day	Battle casualties	Rate per 1,000 per day	Strength	Evacuated by sea	Evacuated by air	Total remaining
3,452	2·94	431	0·36	168,000	3,293	543	1,274

Total sick to date 11,559
 Total battle casualties 6,952
 Total evacuated from Sicily 13,562
 (including 549 Germans
 682 Italians)

The sick rate fell because the admissions for malaria and Fever N.Y.D. fell. Up to and including August 13 the total admissions on account of malaria and Fever N.Y.D. were 3,565, of which XIII Corps had 1,853, XXX Corps 439 and all others 1,272. Sickness from other causes still remained remarkably low, but anxiety was developing concerning the threat of V.D.

Almost the whole of the country occupied by Eighth Army had now been surveyed and maps showing malarious areas prepared and distributed. Energetic action had been taken by 8 Mob. Mal. Lab. and anti-malaria control units for controlling infected areas and arrangements had been made with the R.A.F. for an aeroplane to be available for spraying with larva-killing 'Paris green'.

TABLE 6
August 15-21

Sick	Rate per 1,000 per day	Battle casualties	Rate per 1,000 per day	Strength	Evacuated by sea	Evacuated by air	Total remaining
3,834	2·43	148	0·09	225,000	1,124	357	1,872

(Strength here includes R.A.F. and also M.N.B.D.O. II. See Appendix III.)

Total sick to date 15,393
 Total battle casualties 7,100
 Total evacuated from Sicily 15,043
 (including 692 Germans
 985 Italians)

Total admissions on account of malaria up to midnight August 21 were 6,361. Of these 1,711 were diagnosed microscopically. The rate per 1,000 was 7·60, or a daily rate of 0·36 per 1,000. The majority of these cases continued to come from 50th and 51st Divisions. For these divisions the mepacrine dose was increased and in addition all 5th Division and XIII Corps troops were given 18 grains of quinine daily for three days.

TABLE 7
Total Casualty Figures. July 28. (D.M.S., A.F.H.Q.)

	U.S. Seventh Army	British Eighth Army	Canadians	Totals
Killed .	500	828	344	1,672
Wounded .	4,870	2,516	1,080	8,466
Missing .	2,349	1,135	—	3,484
P.o.W. .	17	—	55	72
Totals .	7,736	4,479	1,479	13,698

TABLE 8
Hospital Situation in the Whole Theatre. August 7. (D.M.S., A.F.H.Q.)

Force	Wounded	Sick	Totals
American .	2,822	15,582	18,404
British .	2,824	13,339	16,163

TABLE 9
Evacuation State. Week ending August 7. (D.M.S., A.F.H.Q.)

Method	From	To	British	American	P.o.W.	Totals
Sea .	Sicily	Sousse	484	—	—	484
Air .	Sousse	Algiers	108	4	16	128
Air .	Sicily	Tunis	1,050	352	10	1,412
Air .	Tunis	Algiers	745	106	—	851
Air .	Tunis	Philippeville	18	—	—	18
Train .	Sousse	Tunis	252	3	4	259
Train .	Tunis	Algiers	42	92	50	184
Train .	Tunis	Constantine	438	—	—	438
Train .	Tunis	Bizerta	1	191	—	192
Road .	Sousse	Tunis	189	—	8	197
Road .	Tunis	Thibar	—	—	50	50
Road .	Mateur	Tunis	—	—	50	50
			3,327	748	188	4,263

THE ARMY MEDICAL SERVICES

TABLE 10
Casualties evacuated to Medical Units in Malta from Sicily

	By Air		By Sea	
	Medical	Surgical	Medical	Surgical
Army . . .	349	496	853	616
R.N. . . .	5	18	17	4
R.A.F. . .	32	52	17	3
Others . .	38	100	103	62
	424	666	990	685

TABLE 11
Casualties evacuated from Medical Units in Malta

	By Air	
	Medical	Surgical
Army . . .	91	243
R.N. . . .	17	30
R.A.F. . .	44	28
	152	301

TABLE 12
*Casualties passed through Luqa Airfield from Sicily and Italy
(not admitted Malta)*

	By Air	
	Medical	Surgical
Army . . .	471	923
R.N. . . .	16	33
R.A.F. . .	52	71
	539	1,027

TABLE 13
Bedstate N. Africa (Br.). August 12. (D.M.S., A.F.H.Q.)

Location	Equipped	Occupied	Vacant
Tunis group .	4,419	3,529	890
L. of C. .	20,015	16,058	3,957
Con. Depots .	24,434 5,500	19,587 2,863	4,847 2,637
	29,934	22,450	7,484

TABLE 14
*Tentative Analysis of Approximate Total of Br. Casualties July 10-
 August 17. (D.M.S., A.F.H.Q.)*

	Killed		Wounded		Missing		Totals	
	Offs.	O.Rs.	Offs.	O.Rs.	Offs.	O.Rs.	Offs.	O.Rs.
Eighth Army .	165	1,484	542	6,476	82	1,566	789	9,526
Canadians .	38	440	109	1,497	8	76	155	2,013
R. Marines .	3	39	5	101	0	196	8	336
Indians .	0	3	0	46	0	0	0	49
Airborne .	14	114	22	258	25	685	61	1,057
	220	2,080	678	8,378	115	2,523	1,013	12,981

(LINKLATER, *The Campaign in Italy*, gives the British casualties during this campaign as 2,721 killed, 7,939 wounded and 2,183 missing.)

TABLE 15
*Morbidity and Mortality. Eighth Army. June 25-July 30, 1943.
 (D.M.S., A.F.H.Q.)*

Morbidity

Strength	332,000		
Admissions to hospital	741,188/1,000/annum		
Sickness	679,759	"	"
Injuries	61,429	"	"
Reporting sick on sick-parade	2,928,509	"	"
Morbidity state			
Respiratory Diseases	29,884	"	"
Gastro-intestinal	137,83	"	"
Nervous	4,551	"	"

Table 15—continued

Skin	29,948/1,000/annum		
Mental	5,357	”	”
Venereal	14,472	”	”
Pediculosis	7,549	”	”
Scabies	10,964	”	”
Infective Hepatitis	5,513	”	”
Malaria	225,918	”	”
Dysentery	49,880	”	”
Smallpox	0,313	”	”

Mortality

Deaths from sickness and injuries during this period totalled 53.

Deaths from Malaria	13
” Fractured Skull	9
” Multiple Injuries	8
” Burns	7
” Typhoid	4
” Various	12

TABLE 16

Battle Casualties and Sick admitted to Medical Units of XXX Corps

Week ended	Sick		Battle Casualties		Totals
	United Kingdom	Canadian	United Kingdom	Canadian	
July 17	285	86 (81)	407		778
24	537	317 (276)	1,039		1,893
31	1,009	443 (391)	1,040		2,492
August 7	1,875	356 (294)	1,232		3,463
14	1,033	258 (302)	580		1,871
21	(1) 2,812		96		2,908
28	(2) 2,718		26		2,744
Totals	10,269	1,460	4,420		16,149
	11,729		4,420		

(1) includes 592 cases of malaria and 1,544 of N.Y.D. Fever.

(2) includes 729 cases of malaria and 1,505 of N.Y.D. Fever.

The figures in brackets under Canadian Sick are those recorded by A.D.M.S. Canadian 1st Division. The discrepancies between these and those given by D.D.M.S. XXX Corps are to be explained by reference to two factors; some Canadian sick passed through non-Canadian medical units and others in the rear areas by-passed the Canadian field ambulances.

TABLE 17
Air Evacuation

Number of planes made available . . .	400 troop-carrying Douglas C 47s
Average daily number of planes in use for this purpose	15
Average distance flown	300 miles
Average cruising speed	150 m.p.h.
Average time in the air	2 hours

TABLE 18
51st Division Casualties

	Officers	O.Rs.
Killed	30	194
Wounded	77	833
Missing	17	284
	124	1,311

TABLE 19
XIII Corps Casualties

July 11-17 (Strength 34,000)

	B.C.	Sick	P.o.W.	Civilians	Totals
Admissions to field medical units	1,378	226	329	26	1,959
R.T.U.	34	7	—	—	41
Evacuated from field ambulances					
by road	1,195	203	255	22	1,675
by air	—	—	—	—	—
Died	29	—	26	—	55

(Of the battle casualties 293 were from 5th Division and 1,085 from 50th Division.
Of the sick 68 were from 5th Division, 158 from 50th Division.)

July 18-25 (Strength 37,000)

	B.C.	Sick	P.o.W.	Civilians	Totals
Admissions to field medical units . . .	884	313	32	5	1,234
R.T.U.	60	41	—	—	101
Evacuated from field ambulances					
by road	729	179	32	1	941
by air	60	—	—	—	60
Died	30	1	2	—	33

(Of the battle casualties 173 were from 5th Division and 711 from 50th Division.
Of the sick 96 were from 5th Division, 217 from 50th Division.)

July 26-31 (Strength 39,836)

	B.C.	Sick	P.o.W.	Civilians	Totals
Admissions to field medical units . . .	129	319	1	2	451
R.T.U.	12	52	—	—	64
Evacuated from field ambulances					
by road	29	216	1	1	247
by air	83	—	—	—	83
Died	3	—	—	—	3

(Of the battle casualties 38 were from 5th Division and 91 from 50th Division. Of the sick 69 were from 5th Division, 250 from 50th Division.)

TABLE 20
50th Division Casualties in the Campaign in Sicily

	Officers	O.Rs.
Killed	46	291
Wounded	89	1,056
Missing	28	518
	163	1,865

Total Sick admitted to Medical Units	5,772
Total Divisional Sick admitted	3,610
Total Battle Casualties and Sick admitted to 50th Divisional Field Ambulances	9,489
Total 50th Divisional Battle Casualties and Sick admitted to 50th Divisional Medical Units	4,755

TABLE 21
Classification of Battle Casualties treated in Field Ambulances of 50th (N) Division

	Abrasion Accdt. B.W.	Abrasion Accdt. Bomb wound	S.W.		? Wd.	M.W.	B.W.	Cont. & Abrab.	Blast	Burns	Accdt.	Totals
			H.E.	M.B.								
Scalp		38	34	15	2	8	16	14	3	4	9	143
Fract. Skull		—	—	—	3	2	2	—	—	—	2	9
Comp. Fract. Skull		6	4	4	4	2	1	—	—	—	4	25
Mult. G.S.W. Head		6	—	7	—	2	1	—	—	—	—	16
Fract. Mandible		6	—	—	1	—	—	—	—	—	—	7
Maxilla		1	—	—	—	—	—	—	—	—	—	1
Forehead		1	2	4	—	1	—	—	1	—	2	11
Face		29	14	31	3	6	9	23	—	12	2	129
Nose		3	—	1	—	—	—	2	—	—	—	6
Ear, Left		2	1	2	—	—	1	1	12	4	1	24
Ear, Right		5	4	1	1	1	—	—	2	5	1	20
Eye, Left		13	—	1	—	1	2	—	5	2	3	27
Eye, Right		3	1	5	—	1	—	5	7	1	2	25
Palate		—	1	1	—	—	—	—	—	—	—	1
Neck		21	9	16	4	8	10	6	1	3	1	79
Shoulder, Left		28	9	17	5	4	6	11	—	—	—	80
Shoulder, Right		29	17	23	2	5	14	6	—	—	—	96
Scapula, Left		2	3	7	1	—	3	—	—	—	—	16
Scapula, Right		7	—	11	1	1	1	1	—	—	—	22
Arm, Left		74	17	44	5	12	21	7	2	13	4	199
Arm, Right		83	23	34	5	9	31	10	3	11	7	216
Elbow, Left		13	5	7	3	1	1	5	—	—	1	36
Elbow, Right		5	6	3	—	2	5	2	—	—	1	24
Wrist, Left		5	4	2	3	—	5	1	—	—	—	20
Wrist, Right		11	5	4	1	1	4	2	—	—	1	29

Classification of Battle Casualties treated in Field Ambulances of 50th (N) Division—(Contd.)

	G.S.W.	S.W.		? Wd.	M.W.	B.W.	Cont. & Abras.	Blast	Burns	Accdt.	Totals
		H.E.	M.B.								
Hand. Left	56	3	20	—	2	11	8	—	13	6	119
Right	34	7	19	3	5	3	9	1	14	4	99
Hip. Left	15	7	5	3	3	4	2	1	—	—	40
Right	15	7	8	2	4	1	2	—	—	—	40
Thigh. Left	65	14	39	4	10	14	1	1	1	1	150
Right	59	22	28	2	13	17	4	—	2	5	152
Leg. Left	68	22	41	5	17	32	16	2	17	5	225
Right	42	25	31	5	12	11	12	2	13	1	154
Knee. Left	23	3	16	—	4	7	7	—	2	2	64
Right	17	10	16	2	4	5	16	—	2	—	72
Ankle. Left	5	3	5	1	—	3	2	—	—	—	21
Right	6	1	4	1	2	—	1	—	—	—	15
" (Crush) Left	—	—	—	—	—	—	—	—	—	—	1
Foot. Left	38	2	8	4	1	8	4	1	2	2	70
Right	21	5	8	3	5	9	4	2	2	1	60
Buttock. Left	24	4	13	—	7	10	4	—	2	2	62
Right	26	2	8	2	6	5	1	—	1	2	53
Testicles	1	—	1	—	—	1	—	—	—	—	4
Penis	1	—	2	—	—	—	—	—	—	—	4
Groin. Left	1	1	1	—	1	—	1	—	—	3	8
Right	2	1	—	—	—	—	1	—	—	1	5
Iliac. Left	—	—	—	—	—	—	—	—	—	—	3
Right	3	—	—	—	—	—	—	—	—	—	3
Sacrum	1	—	—	—	—	—	—	—	—	—	1
Chest. (Pen.)	37	11	10	9	1	6	—	—	—	—	74
(Super.)	39	9	32	1	5	15	6	4	3	3	117
Back. (Pen.)	8	8	4	2	1	2	—	—	—	—	35
(Super.)	22	14	23	2	6	13	3	4	3	4	94
Kidney. Left	—	—	—	—	—	—	—	—	—	—	1
Abdomen. (Pen.)	39	9	9	4	3	5	—	—	—	1	70
" (Super.)	21	6	5	5	3	5	2	—	1	—	48

Classification of Battle Casualties treated in Field Ambulances of 50th (N) Division—(Contd.)

	S.W.		G.S.W.	? Wd.	M.W.	B.W.	Cont. & Abras.	Blast	Burns	Accdt.	Totals
	H.E.	M.B.									
Liver. (Perf.)	—	—	1	—	—	—	—	—	—	—	1
Mult. Wounds	2	—	1	—	5	8	3	—	1	—	23
Crush Hand. Right	—	1	—	—	—	—	—	—	—	1	2
Crush Hand. Left	—	1	—	—	—	—	—	—	—	1	2
" " Left	—	—	—	1	—	—	6	—	—	1	8
Crush Foot. Left	—	—	—	—	—	—	—	—	—	—	—
Crush Chest.	—	—	—	1	1	—	—	—	—	—	2
COMPOUND FRACTURES											
Shoulder. Left	2	—	—	—	—	—	—	—	—	—	2
Humerus. Right	10	2	5	2	—	1	—	—	—	—	20
" " Left	1	1	8	4	—	1	—	—	—	1	16
Elbow Joint.	2	—	2	—	—	—	—	—	—	—	3
Radius & Ulna. Left	1	—	1	1	—	—	—	—	—	—	2
Radius & Ulna. Right	—	—	1	—	1	—	—	—	—	—	2
" Radius. Left	1	1	4	—	—	—	—	—	—	—	6
" " Right	1	1	3	4	2	—	—	—	—	2	12
Ulna. Left	1	2	2	—	1	1	—	—	—	1	7
" " Right	1	—	3	1	1	1	—	—	—	1	7
Hand. Left	1	—	6	1	—	—	—	—	—	4	10
" " Right	—	—	1	1	—	—	—	—	—	—	2
Clavicle. Left	—	—	1	—	—	—	—	—	—	—	1
" " Right	—	—	—	—	1	—	—	—	—	—	1
Femur. Left	1	3	4	6	1	2	—	—	—	1	18
" " Right	3	4	14	5	2	2	—	—	—	3	30
Knee. Left	1	—	3	2	—	—	—	—	—	—	9
" " Right	—	—	2	1	—	—	—	—	—	—	4
Tib. & Fib. Left	4	1	1	1	—	—	—	—	—	—	7
" " Right	5	—	2	5	1	1	—	—	—	—	14
Fibula. Left	3	4	5	7	4	7	—	—	—	1	31
" " Right	1	1	9	4	1	1	—	—	—	—	16
Tibia. Left	4	3	7	6	4	4	—	—	—	3	27
" " Right	3	2	7	3	2	—	—	—	—	—	17

Classification of Battle Casualties treated in Field Ambulances of 50th (N) Division—(Contd.)

	G.S.W.	S.W.		? Wd.	M.W.	B.W.	Cont. & Abras.	Blast	Burns	Accdt.	Totals
		H.E.	M.B.								
COMPOUND FRACTURES—											
<i>contd.</i>											
Ankle, Left	4	—	—	3	1	—	—	—	—	2	10
" Right	5	1	—	4	5	—	—	—	—	—	15
Foot, Left	2	—	—	3	1	—	—	—	—	1	7
" Right	3	—	1	4	—	1	—	—	—	1	10
Wrist, Left	—	—	—	1	—	—	—	—	—	1	2
" Right	1	—	—	—	—	—	—	—	—	1	2
Fingers	1	—	—	—	—	—	—	—	—	—	1
Tibia, Left Simple	1	—	—	1	1	—	—	—	—	—	3
" Right "	2	—	—	—	—	—	—	—	—	—	2
SIMPLE FRACTURES											
Ankle, Left	1	—	—	1	1	—	—	—	—	2	5
" Right	—	—	—	—	3	—	—	—	—	1	4
Fibula, Left	—	—	—	—	1	—	—	—	—	1	2
" Right	—	—	—	—	1	—	—	—	—	—	1
Femur, Left	—	—	—	—	1	—	—	—	—	—	1
Clavicle, Left	2	—	—	—	1	—	—	—	—	—	4
" Right	—	—	1	—	1	—	—	—	—	1	3
Ribs	2	—	1	1	1	4	5	1	1	2	15
Hand, Left	—	—	1	—	—	—	—	—	1	—	3
Patella, Right	—	—	—	—	—	—	—	—	—	—	1
Ilium	—	—	—	—	—	—	—	—	—	—	1
Humerus	—	—	—	—	—	—	—	—	—	—	1
Fingers, Left	—	—	—	—	—	—	—	—	—	—	1
" Right	—	—	—	—	—	—	—	—	—	—	1
Foot, Left	—	—	—	—	—	—	—	—	—	—	1
Sternum	—	—	—	—	1	—	—	—	—	2	2
Totals	1,197	401	627	178	232	351	213	58	136	129	3,522

TABLE 22

Miscellaneous Battle Casualties. 50th (N) Division

<i>Amputations</i>				
Leg.	Right	.	.	1
Foot.	Left	.	.	1
	„ Right	.	.	2
Arm.	Left	.	.	1
	„ Right	.	.	1
Hand.	Left	.	.	1
	„ Right	.	.	1
<i>Others</i>				
	Bayonet Wound	.	.	3
	Sprain, Ankle. Left	.	.	18
	„ „ Right	.	.	16
	„ Wrist. Left	.	.	2
	„ Knee. „	.	.	3
	„ „ Right	.	.	2
	„ Foot. Left	.	.	2
	„ „ Right	.	.	2
	„ Back	.	.	4
<i>Bone Injuries</i>				
	Knee. Left	.	.	9
	„ Right	.	.	8
	Spine	.	.	2
<i>Other Conditions</i>				
	Concussion	.	.	26
	Physical Exhaustion	.	.	63
	N.Y.D. (N)	.	.	95
	N.Y.D. (P)	.	.	1
	Shock	.	.	24
	Blistered Feet	.	.	2
	Total	.	.	290
	Total from Table 21.	.	.	3,522
	Grand Total	.	.	3,812

APPENDIX I

ORDER OF BATTLE AS AT JULY 9, 1943 (abbreviated)

EIGHTH ARMY

XIII Corps

5th Division	from Suez
13th, 15th, 17th Inf. Bdes.	
32nd and 33rd Beach Bricks	
50th (Northumbrian) Division	
69th, 151st, 168th Inf. Bdes.	
34th Beach Brick	
1st Airborne Division	from Kairouan
1st, 2nd, 4th Para. Bdes.	
1st Airlanding Bde. (u/c 5th Division)	
H.Q. 4th Armd. Bde. plus two Armd. Regts.	
6th A.G.R.A.	
2nd A.A. Bde.	
S.R.Sqn. (S.A.S. Regt., M.E.) u/c 5th Division	
3rd Commando u/c 5th Division	
Corps Tps.	

XXX Corps

51st (Highland) Division	from Tunisia, staging at Malta
152nd, 153rd, 154th Inf. Bdes.	
20th Beach Gp.	
Canadian 1st Division	from United Kingdom
1st, 2nd, 3rd Inf. Bdes.	
Cdn. 1st Army Tk. Bde. (one regt.) (remainder in Army Reserve)	
73rd A.A. Bde.	
3rd and 4th Beach Gps.	
231st Inf. Bde.	from Suez, staging at Malta
31st Beach Brick	
H.Q. 23rd Armd. Bde. plus two Armd. Regts.	
5th A.G.R.A.	
62nd A.A. Bde.	
73rd A.A. Bde.	
40th and 41st R.N. Commandos (Special Service Bde.)	from Scotland
Corps Tps.	

X Corps (not employed in Sicily)

46th Division (in reserve) in the Sousse-Sfax area	
78th Division (in reserve)	
H.Q. Tripolitania	

M.N.B.D.O. (2)
86 Area Army Tps.

U.S. SEVENTH ARMY

U.S. 45th Division	from the U.S.A., staging at Oran
U.S. 3rd Division	from Bizerta
U.S. 1st Division	from Algiers
U.S. 2nd Armd. Division	from Oran
Elements of U.S. 82nd Airborne Division & Rangers	from Kairouan
U.S. 9th Division (in reserve)	at Oran

APPENDIX II

MEDICAL ORDER OF BATTLE AS AT JULY 9, 1943

EIGHTH ARMY

General Hospitals	11 B.G.H. (600 beds)	from N. Africa
	33 (1,200)	from Malta
	54 (300)	
	58 (200)	from North Africa
	66 (600 plus 100 Indian and 100 Basuto)	
	70 (600)	from North Africa
	83 (200)	from North Africa
	5 Cdn. (600)	
Field Hospitals	2 and 6	
C.C.Ss.	3	
	4 (allotted to XXX Corps and by Corps to Canadian 1st Division for the assault phase)	
	5	
	7 (allotted to XIII Corps and by Corps to 5th Division for the assault phase)	
	15 (allotted to XIII Corps and to 50th Division)	
	21 (allotted to XXX Corps and to 231st Brigade)	
Fd. Amb.	151 Lt.	
F.D.Ss.	3 (allotted to XXX Corps and to 4th Beach Group)	
	1 and 2 (Cdn.) (with Canadian 1st Division, 1 allotted to 3rd Beach Group)	
F.S.U.s.	1	
	2 (allotted to XIII Corps for the assault phase)	
	3	
	4 (allotted to XIII Corps and to 5th Division)	
	6	
	21	
	22	

	35 (allotted to XXX Corps and to 3rd Beach Group)
	36 (allotted to XXX Corps and to 4th Beach Group)
	1 and 2 (Cdn.) (with Canadian 1st Division)
F.T.U.s.	1 (allotted to XXX Corps for the assault phase)
	2
	3
	4 (allotted to XIII Corps for the assault phase)
	7
	35 (allotted to XXX Corps and to 3rd Beach Group)
	1 (Cdn.) (with Canadian 1st Division)
M.A.Cs.	146 (two sub-secs. allotted to XIII and three to XXX Corps)
	60
	219 (2 plns.) and 567 A.C.Cs.
Mob. Bact. Labs.	5
	8 (allotted to XIII Corps)
Mob. Ophthal. Unit	2
Mal. Fd. Lab.	8
*A.M.C.U.s.	12 (allotted to XXX Corps and to 23 1st Brigade)
	13 (" XXX " 51st Division)
	17 (" XIII " 50th ")
	71 (" XXX " 51st ")
	73 (" XIII " 50th ")

XIII Corps

Fd. Amb.	132
5th Division	
Fd. Ambs.	141, 158, 164
Fd. Hyg. Sec.	24
Beach Bricks 32, 33	Medical Sections. Detachments I.A.M.C.
50th (N) Division	
Fd. Ambs.	140, 149, 186
Fd. Hyg. Sec.	22
Beach Brick 34	Medical Section. Detachment I.A.M.C.
1st Airborne Division	
Fd. Ambs.	16 Para., 181 A.L., 127 and 133 A.B.
4th Armoured Brigade	
Fd. Amb.	14

* The Term Anti-Malaria Control Unit is somewhat puzzling. These units were the Middle East equivalent of the Malaria Control Units that were brought into being by the Directorate of Hygiene of the Army Medical Directorate. Anti-Malaria Unit and Malaria Control Unit are meaningful terms; Anti-Malaria Control Unit is not.

XXX Corps

Fd. Amb.	. . .	159*
Fd. Hyg. Sec.	. . .	13
51st (H) Division		
Fd. Ambs.	. . .	174, 175, 176
Fd. Hyg. Sec.	. . .	29
Beach Group 20	. . .	Medical Section
Canadian 1st Division		
Fd. Ambs.	. . .	4 (Cdn.), 5 (Cdn.), 9 (Cdn.), 2 (Cdn.) Lt.
Fd. Hyg. Sec.	. . .	2 (Cdn.)
Beach Group 3	. . .	Medical Section and Detachment 2 (Cdn.) Fd. Hyg. Sec.
Beach Group 4	. . .	Medical Section and Detachment 2 (Cdn.) Fd. Hyg. Sec.
231st Infantry Brigade		
Fd. Amb.	. . .	200
Beach Brick 31	. . .	Medical Section. Detachment I.A.M.C.
23rd Armoured Brigade		
Fd. Amb.	. . .	150 Lt.
In Reserve		
78th Division		
Fd. Ambs.	. . .	11, 152, 217
Fd. Hyg. Sec.	. . .	47

APPENDIX III

M.N.B.D.O. (2). MEDICAL COMPONENT†

As the war continued, naval units, including their medical components, came increasingly to participate in operations on land. Since usually the naval force employed was numerically relatively small, the naval medical component was commonly placed under the command of the Army Medical Services for operational and administrative purposes. Following the campaign in Crete the Mobile Naval Base Defence Organisation pursued a rapid development, and by 1942 its medical organisation had come to be:

* By an oversight the surgical team of 1 (N.Z.) C.C.S. was included in Eighth Army Order of Battle. At the conclusion of the campaign in Tunisia, it having been agreed between the New Zealand and United Kingdom Governments that the New Zealand Division should not be used operationally again before October 1, this division moved from Tunis to Maadi Camp in the Delta. But this surgical team, working with the medical units of XXX Corps in Tunisia, remained behind. It went with XXX Corps to Sicily. Through an oversight, the approval of H.Q., N.Z.E.F., was not sought for this move. In Sicily the team assisted 159 Fd. Amb. at the B.D.S. on Bark South beach during the assault phase. It worked in 21 C.C.S. at Pachino and later joined 175 Fd. Amb. and 22 F.S.U. at Buccheri and later at Ramacca. On July 19 the unit was traced and recalled. Eighth Army was fortunate in having with it this team, for it was among the most experienced of its kind and had earned for itself an exceedingly high reputation.

† See *Royal Naval Medical Services*, Vol. II, Chapter 2.

- (a) 1 medical officer per 1,000 strength
- (b) 1 sick quarters per 2,000 strength
- (c) a hospital capable of dealing with all major surgical and medical cases.

The medical officer functioned in what was now called a regimental aid post. The sick quarters was termed a forward field section and the tented hospital a casualty clearing station. There were also a F.S.U., a mobile laboratory, a field hygiene section and two A.M.C.U.s. Thus, for reasons of convenience and to facilitate co-operation, the Royal Naval Medical Service had adopted much of the organisation and certain of the terms of the Army Medical Services for those units which were to function in the field.

The first detachment of the medical component of M.N.B.D.O. (2) landed at Augusta on July 13 from Malta, a few hours after the port had been captured. It consisted of 7 medical officers, 18 sick berth ratings and 16 marines for miscellaneous non-medical duties. With it went a detachment of the field hygiene section. Its transport consisted of five ambulance cars, five 15-cwt. trucks and nine motor cycles. The F.S.U. landed with 151 Lt. Fd. Amb. on July 14. On the 24th one forward field section, two R.A.P.s., two A.M.C.U.s. and the rest of the field hygiene section landed. A second forward field section arrived on August 3 and the C.C.S. on the 6th. The mobile laboratory reached Augusta on September 22.

On August 12, the medical component of M.N.B.D.O. (2) was required to adopt completely the Army type of organisation. This involved the use of the Army system of medical documentation. As a result of this, the Medical Department of the Navy was not informed of the affairs of this unit and its records came to be incomplete. It is known that the C.C.S. opened on August 11 with four wards containing 38 beds, that by the 14th its beds numbered 112 and by the end of the month 185. Between August 25 and September 8 the daily admissions—mostly malaria and enteritis—averaged 100.

On November 1, this unit moved into quarters in the R.N. base at Augusta and opened with 170 beds while a small operational unit left Sicily on December 8. On December 26 all the patients were evacuated to 33 B.G.H. Syracuse and the unit ceased to exist as a separate entity.

CHAPTER 2

THE CAMPAIGN IN ITALY

A. September 1943—January 1944

PRÉCIS

ITALY surrendered to the Allies on September 3, 1943, but in Italy there were strong German forces. Since at this time it was beyond the powers of the Allies to mount an invasion of North-West Europe from the United Kingdom (Operation 'Overlord'), it was decided to fight the Germans in Italy, attracting thereto as many German divisions as possible. The U.S.S.R. would be indirectly aided thereby. But it was clearly understood that this invasion of Italy was an operation subsidiary to Operation 'Overlord', preparations for which were fast proceeding.

On September 3, Eighth Army, launched from Sicily, effected landings on the Calabrian shore near Reggio and, on the 9th, forces under command of 15 Army Group from North Africa landed at Taranto. Encountering slight opposition Eighth Army rapidly advanced northwards and in three weeks had occupied the provinces of Calabria, Lucania and Apulia and had secured the ports of Taranto, Brindisi and Bari. On September 9, U.S. Fifth Army, with U.S. VI and British X Corps under command, landed on the Salerno beaches south of Naples. During a week of bitter fighting the Germans vainly sought to overwhelm the defenders of this bridgehead. Then the approach of Eighth Army from the south caused them to withdraw. Between September 23 and 28, X Corps fought for the passes that led from the bridgehead to the Naples plain and at last broke through. Naples was entered on October 1. The Germans withdrew to the line of the Rivers Volturno and Calore between Benevento and Capua.

It quickly became apparent that the Germans had decided to fight for Rome. They stood in their Winter Line, based on the southern slopes of the Abruzzi mountains. In front of this they constructed a deep and elaborate belt of minor defences.

Up to the middle of November, the Allied armies were engaged in piercing this. In the eastern sector Eighth Army, between October 1 and November 20, fought a series of operations to advance some ninety miles to the line of the River Sangro. U.S. Fifth Army, after forcing the passage of the Volturno, fought its way towards the entrance of the Liri valley which led to Rome until checked in front of the natural

strongholds of Monte Camino, Monte Lungo and Monte Sammucro which dominate the Capua-Cassino road.

Then followed the assault upon the Winter Line itself. By mid-January, 1944, Eighth Army, in the east, had crossed the Sangro and the Moro and had taken Ortona, but was halted in the outskirts of Orsogna by the foulness of the weather and the stubbornness of the opposition. In the west, X Corps captured Monte Camino and Monte Maggiore. U.S. II Corps cleared Monte Lungo and Monte Sammucro and reached the edge of the Liri valley. U.S. VI Corps secured the eastern half of the mountain spur between Venafro and Cassino. The French Expeditionary Corps, u/c U.S. Fifth Army, advanced as far as Sant' Elia at the head of the Rapido valley.

(i)

Preparation

STRATEGIC AND OTHER CONSIDERATIONS

It had been decided at the 'Trident' conference held in Washington in May 1943 that German-occupied Europe should be invaded from the United Kingdom (Operation 'Overlord'), probably in the early summer of 1944. General Eisenhower was instructed to consider how the conquest of Sicily, a project soon to be unleashed, could best be exploited before the launching of Operation 'Overlord'. Two objectives were sought: (1) to force Italy to break away from her partnership with Germany, and (2) to occupy the attention of the greatest possible number of German divisions.

The cumulative effects of the events in East Africa, Libya, North-West Africa and in Sicily had produced a political crisis in Italy. On July 25, 1943, Mussolini was dismissed from office and a new government under Marshal Badoglio came into being.

General Eisenhower recommended to the Combined Chiefs of Staff that as soon as Messina fell the mainland of Italy should be invaded. This recommendation was accepted and General Eisenhower was instructed to proceed with plans for the capture of Naples. An offer of peace on honourable terms was broadcast to the Italian people. On August 15, 1943, a representative of Marshal Badoglio presented himself at the British Embassy in Madrid, bearing the message that when the Allies landed in Italy the Italians would change sides. The terms offered to him were those of a military capitulation. Hostilities were to cease at a time of which the Italian Government would be informed and which would be a few hours before the main assault went in. Following a broadcast announcement by General Eisenhower the Italian Government must proclaim the armistice, order its armed forces and people to

collaborate with the Allies and resist the Germans, despatch its fleet, aircraft and shipping to Allied bases and release all Allied prisoners-of-war.

On August 31, the same representative of Marshal Badoglio flew to Sicily to inform General Alexander that the Italian Government was unable to accept these conditions until it had been assured that the Allied invading force was of a strength sufficient to protect the Italian Government from German interference. He was informed that with or without any collaboration on the part of the Italian Government the Allies were going to invade the Italian mainland. Marshal Badoglio was required to decide what the Italian Government should do by the night of September 1.

The Italian Government accepted the terms and the armistice was signed at Cassibile on September 3, eleven hours after two divisions of Eighth Army had crossed the Strait of Messina and had occupied Reggio and San Giovanni. It was not to be publicly announced until a few hours before U.S. VI Corps and X Corps landed on the Salerno beaches on September 9. General Eisenhower would then broadcast the announcement and Marshal Badoglio would at once break the news to the Italian people.

On September 8, Marshal Badoglio sent a message to the effect that the presence of strong German forces in the vicinity of Rome made it impossible for him to hold the three airfields on which U.S. 82nd Airborne Division was to land. The Marshal was now unwilling to accept the armistice until the seaborne invasion had achieved success. General Eisenhower protested but failed to evoke any response. He therefore broadcast the news of the armistice at the time previously arranged. An hour and a quarter later Marshal Badoglio confirmed the fact that the armistice had been signed.

One of the major objectives of Allied strategy—the elimination of Italy from the war—had been attained. But the Germans reacted with their accustomed celerity. They seized military control of the country. From the point of view of the Allies this was satisfactory. Operation 'Overlord' could not be undertaken before 1944 at the earliest. In the meantime the Germans had to be fought and weakened. Italy was the region where this could most profitably be done. The purpose of the campaign in Italy was to contain as many German divisions as possible and so indirectly to aid Russia and to reduce the opposition that would have to be encountered when the Allied armies landed in France. In its beginning and at all times during its course the campaign in Italy was and remained subsidiary to Operation 'Overlord'.

PREPARATORY PLANNING

Plans for the invasion of the Italian mainland had been maturing during the course of the campaigns in Tunisia and Sicily. They were

inevitably affected by the changing political scene, by the course and outcome of these campaigns and by considerations relating to the major project, the invasion of France (Operation 'Overlord') which necessarily placed limits upon the resources that could be made available, especially as regards aircraft carriers and landing craft.

It was finally decided that the invasion should take the form of a twofold assault; (1) Operation 'Baytown' by XIII Corps of Eighth Army (General Montgomery) directly across the Strait of Messina, followed almost immediately by (2) Operation 'Avalanche', a landing in force on the beaches south of Naples by U.S. Fifth Army (General Mark Clark) with British X Corps under command. The Salerno beaches were chosen because they were close to Naples, were suitable for amphibious assault and were near enough to Sicily to enable air cover to be provided. The two armies would constitute 15 Army Group under the command of General Alexander, deputy to General Eisenhower, supreme commander of all Allied forces in this theatre.

It was expected that at the end of the first phase of the invasion, planned to end after twenty-five days, the whole of the provinces of Calabria, Lucania and Apulia would have been overrun by Eighth Army and that the airfields about Foggia would have been secured.

OPERATION 'BAYTOWN'—TACTICAL PLAN

XIII Corps would assault on a two-divisional front, Canadian 1st Division on the right, 5th Division on the left, landing on the Italian mainland immediately north of Reggio. The artillery of XXX Corps, aided by American heavy guns positioned about Messina in Sicily, would support the assault, as would also the Air Force.

- (1) Canadian 1st Division, supported by a regiment of Canadian 1st Tank Brigade, would capture a beach in sector Fox and the high ground overlooking this. Thereafter it would capture Reggio and its airfield.
- (2) 5th Division, supported by a regiment of Canadian 1st Tank Brigade, would capture beaches in sectors How and George and the high ground east of these. Thereafter it would move northward and capture S. Giovanni.
- (3) Special Raiding Sqn. S.A.S. Regt. would land between Scilla and Bagnara, demolish the coast road and then withdraw by sea.
- (4) 3rd Commando would land in the vicinity of Melito, south of Reggio, demolish the coast road and thereafter withdraw by sea.
- (5) 231st Inf. Bde., with 40th Commando under command, would remain in reserve and be prepared to make an assault landing further north.

OPERATION 'AVALANCHE'—TACTICAL PLAN

X Corps u/c U.S. Fifth Army

- (1) 46th and 56th Divisions would land on a seven-mile stretch of beach between Salerno and the River Sele, seize Salerno and the Monte-

corvino airfield and establish a firm beachhead which would include the mountain passes to the north-west of Salerno.

- (2) On D-day these divisions would be assisted on their left flank by three battalions of U.S. Rangers and 2nd and 41st Commandos. The Rangers, landing at Maiori, would clear the road to Pagani and seize the Nocera Pass; the Commandos, landing at Vietri, would seize the defile immediately north of Salerno.
- (3) On D-day+4 7th Armd. Division would land.

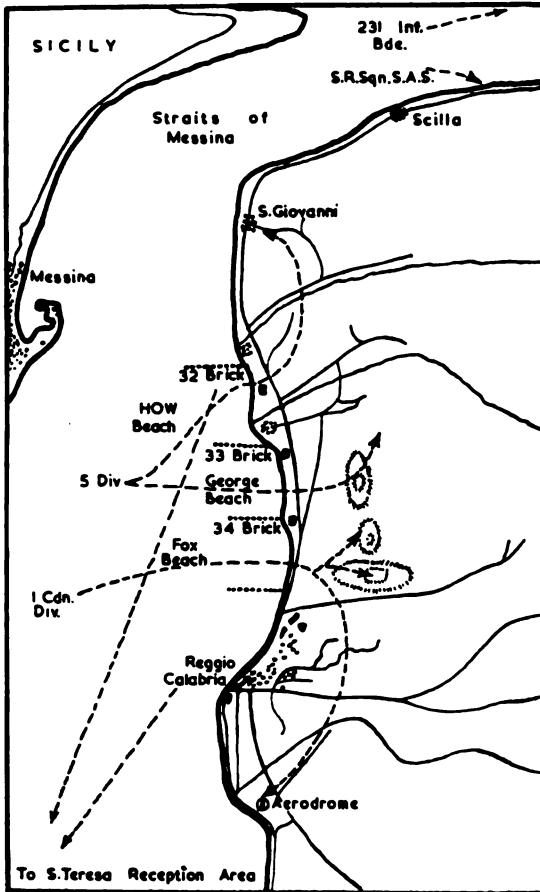


FIG. 19. The Assault Landings on the Calabrian Shore

U.S. VI Corps

- (4) U.S. 36th Division and one tank battalion would assault the beaches south of the River Sele, establish a firm beachhead and secure the right flank by occupying the high ground overlooking the Salerno plain.
- (5) One R.C.T. of U.S. 45th Division would constitute a floating reserve.
- (6) When shipping became available the remainder of U.S. 45th Division would land, followed by U.S. 34th Division.

The beachhead being secured, the force would move to the north and capture Naples, the port facilities of which were needed by the Allies for the supply of a force of a size sufficient for the attainment of the objectives of the campaign.

1st Airborne Division and U.S. 82nd Airborne Division were originally included in this force, but the former was withdrawn for employment in Operation 'Slapstick' and the latter was earmarked for the seizure of the airfields near Rome. This operation was cancelled at the last moment, too late for the division to resume its place in Operation 'Avalanche'.

In the early stages of planning it had been intended that Taranto and the Heel of Italy would be taken by assault, an enterprise of the same order of magnitude as Operation 'Baytown'. But with the armistice and when it became known that only a single German battalion was garrisoning this area, it became possible to cut down the scale of the projected assault (Operation 'Slapstick'). On September 3, a much modified plan was made and on the evening of September 9 elements of 1st Airborne Division landed at Taranto from vessels of 12th Cruiser Squadron.

The Orders of Battle of XIII Corps as on September 3, 1943, and of X Corps as on October 30, 1943, are given in Appendix IV. Eighth Army Medical Units on the former date are shown in Appendix V, while the Medical Orders of Battle for Operations 'Baytown' and 'Avalanche' are shown in Appendices VI and VII at the end of this chapter.

OPERATION 'BAYTOWN'—MEDICAL TACTICAL PLAN

Estimate of Casualties

Total force involved	.	65,000
Assault force	. . .	12,000

Battle Casualties

(1) Estimate by 'G'. 20 per cent. casualties of		
Assault Force for a period of three days	.	2,400
Less 25 per cent. killed and missing	. . .	600
		<hr/>
	Total	1,800

(2) Then 0.25 per cent. per day of Total Force	.	162
Less 20 per cent. killed and missing	. . .	32
		<hr/>
	Total per day	130

At end of twenty-one days—Total	.	1,885
At end of twenty-eight days—Total	. . .	2,513

Sick

At 0.3 per cent. per day	. . . . .	195
At end of twenty-eight days—Total	. . . . .	2,860

Total

Battle Casualties—assault	1,800
later	2,513
Sick—constant figure	2,860
	<hr/>
Grand Total	7,173
	<hr/>
say	7,500
	<hr/>

The plan was prepared on the assumption that strong resistance would be encountered. It was affected by the fact that the amphibious operation was peculiar in that the assaulting troops were to be transported from shore to shore in landing craft.

- (1) Each battalion would have its R.M.O., orderly and regimental S.Bs. distributed among several landing craft.
- (2) Each brigade would be accompanied by one company of a field ambulance with 14 ambulance cars and extra stretchers, blankets and medical comforts split up into sections, each section consisting of one medical officer and 18 O.Rs. R.A.M.C. One such section would be attached to each battalion of the brigade. Equipment etc., sufficient to treat 100 cases, 6 pints of plasma, 6 stretchers and 12 blankets would be carried by each section. The section would move with the battalion until casualties were incurred, when it would halt and look after these casualties.
- (3) Medical sections of the beach bricks would land about H-hour+60 minutes and establish static R.A.Ps. off the beach and open to receive all casualties. Equipment, etc., sufficient for 250 cases would be carried by the medical section personnel in packs. S.M.O. Beach Brick would be responsible for the evacuation of all casualties from the mainland in L.C.T. to Sicily.
- (4) 200 personnel of each field ambulance, less the assault light section, would land about H-hour+4-5 hours. They would carry in packs, equipment etc., sufficient to treat 400 cases, 30 stretchers and 60 blankets.
- (5) Sufficient O.Rs. R.A.M.C. of the Corps field ambulance (132) would report to the S.M.Os. Beach Bricks and accompany landing craft returning to Sicily with casualties.
- (6) 7 and 15 C.C.Ss. would be placed u/c 5th Division for the period of the assault and immediately afterwards until Corps H.Q. became firmly established on the mainland. Since Canadian 1st Division's medical services were according to the new (Hartgill*) organisation and therefore possessed two F.D.Ss. as well as the three field ambulances, these F.D.Ss. would remain u/c Canadian 1st Division and serve as equivalents of C.C.Ss.
- (7) 132 Fd. Amb., a detachment of 8 Mob. Mal. Lab., 19 Fd. Hyg. Sec.

* See Army Medical Services Administration, Volume I, Chapter 13, p. 465.

and 146 M.A.C. would start to cross to the mainland on D-day+3 and complete their landing on D-day+7.

- (8) D.D.M.S., XXX Corps, would undertake the responsibility of receiving casualties on the beaches in Sicily.

In the St. Teresa reception area there were:

Lt. Sec. 3 C.C.S.

149 Fd. Amb. (O.C. to control distribution and evacuation)

20 and 21 F.S.U.s.

Evacuation therefrom would be to:

186 Fd. Amb. at Taormina (light sick)

140 Fd. Amb. at Giardini (staging post to Giarre area)

58 B.G.H. and 4 F.S.U. at Giarre

3 C.C.S., Hy. Sec., plus 3 and 35 F.S.U.s. and 11 F.T.U. at Giarre.

In the north, on the beach at Cape Rasocolmo, there were:

176 Fd. Amb.

29 F.S.U.

35 F.T.U.

Evacuation therefrom would be to:

5 C.C.S. at Milazzo

6 F.S.U.

174 Fd. Amb. at Milazzo (overflow from 5 C.C.S.)

From Milazzo further evacuation would be by hospital ship or to Giarre by 60 M.A.C., less one pln.

MEDICAL TACTICAL PLAN FOR THE ASSAULT LANDING OF 231ST INF. BDE. GP.

- (1) R.M.O.s. and S.B.s., supported by a light section of 200 Fd. Amb. (1 officer and 18 O.Rs.), would accompany their battalions.
- (2) Beach brick medical officers and 18 O.Rs. R.A.M.C. would land at approximately H-hour+180 minutes.
- (3) Assault M.D.S. of 200 Fd. Amb. (3 officers and 49 O.Rs.), 5 F.S.U. (2 officers and 50 O.Rs.), 4 F.T.U. (1 officer and 2 O.Rs.) plus 17 personnel of the R.A.S.C. would land at approximately H-hour+180 minutes.
- (4) The following would accompany the assault M.D.S.:
 - 4 ambulance cars
 - 2 light ambulance cars
 - 6 3-ton lorries (including F.S.U. and F.T.U.)
 - 1 15-cwt. water truck
 - 1 'bantam'

—
14
—

- (5) Sufficient medical stores, etc., would be carried in packs by the personnel and in the vehicles to deal with 300 casualties in the first twenty-four hours.
- (6) 150 gallons of water plus one water truck full would be taken with the M.D.S.

- (7) Casualties occurring in L.C.A. would be landed on the beach and attended by the medical officer of the beach brick should he arrive before the light section of 200 Fd. Amb. Should there be strong opposition, the wounded in the L.C.A. would be brought back to Sicily.
- (8) Two L.C.T. would be available after the second flight for the evacuation of casualties from the beach. 200 Fd. Amb. would provide 1 N.C.O. and 4 O.Rs. with the necessary supplies and comforts to accompany each load of casualties so evacuated. The casualties would be disembarked in the vicinity of Cape Rasocolmo and be received by 176 Fd. Amb. under arrangements with D.D.M.S. XXX Corps.
- (9) 4 Officers and 56 O.Rs. of 200 Fd. Amb. would arrive on the second flight at approximately H-hour + 12-24 hours, together with 3 ambulance cars, 3 3-ton lorries, 1 water truck and 1 'bantam,' to reinforce the M.D.S. and to enable an A.D.S. to move forward as required.
- (10) A thirty-day reserve of medical stores would be landed as soon as possible, followed by a 1-ton beach brick.

As is inevitable in war, many of the details of these plans underwent much modification in the event.

MEDICAL PLANNING AT A.F.H.Q. IN CONNEXION WITH THE INVASION OF THE ITALIAN MAINLAND

On September 2, 1943, a conference between Medical Section A.F.H.Q. and Movements and Transportation was held at Algiers. The following matters were decided :

1. *General Policy*

- (a) To evacuate casualties to North Africa and the Middle East, using Sicily as a transit centre only in an emergency. D.D.M.S. Syracuse would be advised by D.D.M.S. Eighth Army and would keep A.F.H.Q. informed.
- (b) To develop a hospital base in Naples as quickly as possible; cases likely to be discharged within forty-two days to be held there. Forward hospitals to retain short-term cases but if possible to keep 40 per cent. of their beds empty.
- (c) To evacuate casualties from Sicily to North Africa by air as the method of choice. Movements undertook to carry cases to Tunis, Bone or Philippeville.

2. *Details*

Operation 'Baytown'. Preliminary Phase. D-day to D-day + 3.

(a) *Information.*

Syracuse had 3,600 normal beds and 1,100 others, including native sections. These were all occupied, but a malaria centre for afebrile cases had been organised.

Three hospital ships were expected between September 1 and 5.

98 B.G.H. was to move to the Italian mainland and 11 Con. Depot was in transit.

H.S. *Amra*, *Vita*, *Maine* and H.C. *St. David* had been allotted to Eighth Army until D-day+3 of Operation 'Avalanche', when all ships would revert to A.F.H.Q. control.

(b) Disembarkation Ports.

The first two hospital ships would be accepted at Philippeville. Subsequent destinations would be notified later.

(c) Air Evacuation.

200 cases a day could be accepted at Tunis and thence cleared to Constantine.

Operation 'Avalanche'. Preliminary Phase. D-day to D-day+3.

(a) Ships would sail to Philippeville as under :

	<i>British Casualties</i>	<i>U.S. Casualties</i>
D-day .	H.C. <i>St. David</i> (400)	
D-day+1 .	H.S. <i>Aba</i> (484) H.C. <i>St. Julian</i> (356)	
D-day+2 .	H.S. <i>Somersetshire</i> (486)	
D-day+3 .	H.S. <i>Tairea</i> (483) H.C. <i>Leinster</i> (500)	H.S. <i>Oxfordshire</i> or H.S. <i>Newfoundland</i> (383)
D-day+4 .	as required	H.S. <i>Amarapoora</i>

After D-day+3 the control of all ships would revert to A.F.H.Q.

(b) U.S. beds in Sicily.

9 and 77 Evac. Hosps. were open in the Palermo area. In them a proportion of the beds would be available to British casualties if necessary.

D.D.M.S. 'Fortbase' (Sicily) would co-ordinate action and keep A.F.H.Q. informed.

3. *North Africa*

Beds vacant.

(a) It was expected that 5,500 vacant beds would be available in the hospital centres of Constantine and Philippeville. D.D.M.S. Tunis District and D.D.M.S. L. of C. would clear all cases fit for discharge to light duty. 10 Con. Depot would be used as a convalescent hospital for afebrile malaria cases.

(b) Tunis Area and Bone would have 1,500 and 300 vacant beds available.

(c) Tripoli would have 2,300 vacant beds after H.S. *Oxfordshire* had cleared to the Delta.

(d) It could be expected that in North Africa and Tripoli there would be 8,800 beds and the crisis expansion would provide a further 2,400.

(e) Crisis expansions.

Philippeville group . . .	600 beds
Constantine . . .	600
Bougie . . .	200
Algiers . . .	1,000
	<hr/>
	2,400
	<hr/>

(f) Hospital trains.

Tunis to Constantine and Philippeville—one per day.

Constantine and Philippeville to Algiers—two per week.

4. Operation 'Avalanche' subsequent to D-day+3

Evacuation policy.

- (a) An evacuation board, meeting daily and composed of representatives of the U.S. and British medical sections A.F.H.Q. under the chairmanship of D.M.S., would advise Movements of requests and priorities.
- (b) Sicily would be used as a medical base and would be kept clear by air evacuation assisted by hospital ships and carriers. This arrangement would speed up the turn-round at Naples and the ships thus freed would be used for evacuation to the Delta and to the United Kingdom.
- (c) Evacuation to North Africa and the Middle East would be in the ratio 1 : 2.

5. Hospitalisation forecasts

- (a) Eighth Army 12,000 casualties in thirty days
- (b) U.S. Fifth Army 12,500 " "
- (c) Or 2,000 cases from each of these armies every four to five days.
- (d) There might be difficulty about D-day+12 until the Naples hospital base was well established.

6. Naples. Hospital build-up

D-day+30: 76 B.G.H. (600) plus:

one 100-bed expansion from 100 B.G.H.	
two " " " 104 "	
three " " " 5 "	

Later: 103 B.G.H. (1,200) plus:

three 100-bed expansions from 67 B.G.H.
H.Q. 9 Con. Depot from Tunis District
10 Base Depot Medical Stores
104 B.G.H. (1,200) plus three 100-bed expansions
98 B.G.H. (1,200) from Sicily plus three 100-bed expansions from 67 B.G.H.
9 Con. Depot (1,000)

7. Medical maintenance

Operation 'Avalanche'.*

- (a) X Corps units would be provided with seven days' reserve.
 (b) 46th Division would be provided with 1-ton expendible bricks, plus reserve.
 (c) Hospital ships and carriers and store-ships would carry sixteen 1-ton bricks, 2,400 stretchers and 7,200 blankets would be on hospital ships and carriers by D-day+3.

First month: 10 Base Depot Medical Stores and increment of 60 tons.

Second month: 30 tons *ex* Middle East.

Thereafter: D-day+86 30 tons *ex* United Kingdom

D-day+96 30 " " "

D-day+106 30 " " "

D-day+116 50 " " "

The estimated reserve at D-day+116 was ten days' maintenance and twenty days' reserve. By this time 10 Base Depot Medical Stores would be in Naples.

Operation 'Baytown'.

D-day+96 20 tons *ex* Middle East

D-day+106 20 " United Kingdom

D-day+116 30 " " "

The actual number of beds available on D-day was:

	Total Beds	Available		Total Available
		U.S.	Br.	
Tripoli . . .	6,000	—	2,000	2,000
Bizerta . . .	6,000	3,000	—	3,000
Philippeville . . .	6,000	—	4,000	4,000
Bone . . .	1,100	—	500	500
Tunis . . .	1,500	—	1,500	1,500
Algiers . . .	8,000	—	2,000	2,000
Oran . . .	8,000	2,000	—	2,000
Sicily . . .	12,000	2,000	2,000	4,000
	48,600	7,000	12,000	19,000

Additional beds were available at the A.B.S. at Casablanca.

If necessary further hospital accommodation could be borrowed from the French.

* At H.Q. U.S. Fifth Army and also at H.Q. U.S. VI Corps there was a British Increment with a medical component headed by an A.D.M.S. whose chief function was that of representing at H.Q. U.S. Army or Corps, the medical interests of the British, Dominion and Colonial formations and units serving under command of the U.S. Army or Corps. He was the link connecting the medical branches of H.Q. Army Group and H.Q. Eighth Army with those of U.S. Fifth Army and U.S. VI Corps.

The base hospitals were cleared as follows :

- By air from Sicily to North Africa
- By sea from Tripoli to the Delta
- By rail and air from Tunis westwards in North Africa
- By sea from Algiers to the United Kingdom
- By sea from Oran to the United States.

Air evacuation was under the control of D.Q.M.G. (Movements) A.F.H.Q. and was operated by Q (Movements) Tunis Sub-district (Northmoves) in conjunction with Movements and Transportation officers on the staffs of army and district commands.

Demands for medical transportation were made by the medical branch of the formation concerned to the air transport officer (A.T.O.) of the airfield, who sent on the demand to Northmoves for action twenty-four hours later. Notification of the next day's outward bound freight-carrying planes was given to the A.T.O. daily and he notified the medical branches.

The main requirements were :

	<i>Number daily</i>
(1) 'Avalanche' and 'Baytown'	
To Palermo and Catania, Bone, Bizerta, Tunis	4-6
(2) Sicily	
Palermo to Bizerta	1
Catania to Tunis	1
Cassibile to Tripoli	1
Catania to Tripoli	occasionally
(3) North Africa	
Bizerta to Oran	} special through journeys
Bizerta to Telergma	
Tunis to Algiers	
(4) Other Routes (exceptional)	
North Africa to Gibraltar	
Italy and Sicily to Malta	
North Africa to the United King- dom or to the United States	

At the end of each day Northmoves notified Medical Section A.F.H.Q. of numbers carried, origins and destination. The responsibility for maintaining this air medical transportation service lay with G.4 (Mov. & Tn.) A.F.H.Q.

The following formations supplied aircraft :

- Mediterranean Air Transport Service. Algiers. 26 carriers
- 216 Gp. R.A.F. in Sicily. Lentini. 45 carriers

The North African Air Force. Tunis. 50 carriers

Air Transport Command. Algiers. 100 carriers.

OPERATION 'SLAPSTICK'—MEDICAL PLANNING

Although, as stated earlier in this Chapter, Operation 'Slapstick' was much reduced in scope, the Medical Plan for the operation is detailed below, as it affords an interesting example of medical planning:

V Corps. Medical Order of Battle. September 23, 1943.

V Corps

216 Fd. Amb.

8 Fd. Hyg. Sec.

1st Airborne Division

16 Para., 133 Para., 181 A/L & 127 Fd. Ambs.

78th Division

11, 152, 217 Fd. Ambs.

47 Fd. Hyg. Sec.

Indian 8th Division

29, 31, 33 (Ind.) Fd. Ambs.

20 (Ind.) Fd. Hyg. Sec.

4th Armoured Brigade

14 Lt. Fd. Amb.

1. Total strength of Force 90,000

British units	70,000
Indian units	20,000
If 78th Division is added	+15,000
	<u>=105,000</u>

2. Hospital beds at 3 per cent. of Force

British	2,100
Indian	600
If 78th Division is added	+450
	<u>=3,150</u>

3. General Hospitals required

British 1 X 200	200
1 X 200	200
1 X 600	600
1 X 1,200	1,200
	<u>2,200</u>

If 78th Division is added

1 X 200	+200
	<u>=2,400</u>

leaving a deficiency of 750 (1,200-bed hospital will take sixteen days to open).

Indian 1 I.G.H. }
 1 C.G.H. } 1,200 at 6 per cent. of 20,000

4. Order of Priority

Phase A.1. following landing of 1st Airborne Division and before landing of Indian 8th Division

- (1) 19 C.C.S.
 1 sec. Pioneers
- (2) F.S.U.
- (3) F.S.U.
- (4) F.T.U.
- (5) Fd. Hyg. Sec. with A.M.C.U. for Base
- (6) 3 secs. A.F.S. A.C.C.
- (7) Port detachment R.A.M.C.

Phase A.2. D-day+16 to D-day+46. Strength 41,000+2,500=43,500 (Airborne and Indian 8th Divisions)

From M.E.

- 1st flight 31 F.S.U.
 34 F.T.U.
- 2nd flight 9 (Mob.) C.C.S.
 1 (Ind.) Mob. Surg. Unit
 30 I.S.S.
 80 A.M.C.U.
 81 A.M.C.U.
- 3rd flight 2 M.D.U.
 15 (Ind.) Dental Surg. Unit
 3 (Ind.) Dental Mech. Unit
- 4th flight Indian X-ray unit.

From North Africa

- Priority 1 Sec. Mal. Lab.
 2 H.Q. and 2 plns. 112 M.A.C.
 3 one general hospital (200 beds)
 one sec. Pioneers
- 4 one general hospital (1,200 beds) with fire-fighting section
 two secs. Pioneers
- 5 216 Fd. Amb. (Corps)
 6 8 Fd. Hyg. Sec. (Corps) with A.M.C.U.
 7 3 Adv. Depot Med. Stores

If 78th Division is phased in at this stage then the following additional units will be required (strength 58,000):

- one C.C.S. with one sec. Pioneers
 F.S.U.
 F.S.U.
 F.T.U.

one general hospital (200 beds)
 one pln. M.A.C.

Priorities will then read as follows :

From M.E.

1st flight 31 F.S.U.
 34 F.T.U.
 2nd flight 9 (Ind.) C.C.S.
 1 (Ind.) Mob. Surg. Unit
 30 I.S.S.
 80 A.M.C.U.
 81 A.M.C.U.
 3rd flight 2 M.D.U.
 15 (Ind.) Dent. Surg. Unit
 3 (Ind.) Dent. Mech. Unit
 4th flight 9 (Ind.) X-ray Unit.

From North Africa

Priority 1 one C.C.S. with one sec. Pioneers
 2 sec. Mal. Lab.
 3 112 M.A.C.
 4 one general hospital (200 beds)
 one sec. Pioneers
 5 one general hospital (200 beds)
 one sec. Pioneers
 6 one general hospital (1,200 beds) with fire-fighting
 section
 two secs. Pioneers
 7 216 Fd. Amb. (Corps)
 8 8 Fd. Hyg. Sec. (Corps) with A.M.C.U.
 9 3 Adv. Depot Med. Stores.

Phase B. D-day + 46 + 14 days = D-day + 60. Strength 58,000 + 5,000
 = 63,000

From M.E.

4th flight 30 I.G.H.
 14 C.G.H.
 12 (Ind.) Fd. Lab.
 6 M.A.S.

From North Africa

Priority 1 Mob. Bact. Lab.
 2 two secs. A.F.S.
 3 Fd. Hyg. Sec. for L. of C.
 4 one M.D.U. for Airborne Division
 5 Mob. Ophthal. Unit for Corps
 6 one pln. 112 M.A.C.

If 78th Division is already phased in, the following will be the order of priorities :

From M.E.

- 4th flight 30 I.G.H.
- 14 C.G.H.
- 12 (Ind.) Fd. Lab.
- 6 M.A.S.

From North Africa

- Priority 1 Mob. Bact. Lab.
- 2 two secs. A.F.S.
- 3 Fd. Hyg. Sec. for L. of C.
- 4 one M.D.U. for Airborne Division
- 5 one M.D.U. for 78th Division
- 6 Mob. Ophthal. Unit for Corps.

Phase C. D-day + 60 + 14 days = D-day + 74. Strength 63,000 + 5,000 = 68,000

- 1 one C.C.S. for 1st Division
one sec. Pioneers
- 2 F.S.U.
F.S.U.
- 3 F.T.U.
- 4 Detach. Neurosurg. Unit
- 5 M.D.U. for 1st Division
- 6 M.D.U. for L. of C.
- 7 Mob. Ophthal. Unit for Base.

If 78th Division is already phased in, priorities will be as follows :

- 1 one C.C.S. for 1st Division
one sec. Pioneers
- 2 F.S.U.
F.S.U.
- 3 F.T.U.
- 4 Detach. Neurosurg. Unit
- 5 one pln. M.A.C.
- 6 M.D.U. for 1st Division
- 7 M.D.U. for L. of C.
- 8 Mob. Ophthal. Unit for Base.

Phase D. D-day + 74 + 14 days = D-day + 88. Strength 71,000 + 36,000 = 107,000

- 1 18 C.C.S. for 6th Armoured Division
one sec. Pioneers
- 2 F.S.U.
- 3 F.S.U.
- 4 F.T.U.
- 5 one general hospital (200 beds)
one sec. Pioneers
- 6 one general hospital (600 beds) with fire-fighting
section
two secs. Pioneers

- 7 M.D.U. for 6th Armoured Division
- 8 one pln. A.F.S.
- 9 one wing Con. Depot.

B.T.U. in M.E. or N.A. will supply to Force.

Adv. Depot Med. Stores may not open until D-day + 50. Therefore divisions must be maintained by medical bricks as follows :

1st Airborne Division for six weeks requires $6 \times 3\frac{1}{2}$ -ton bricks at one brick per division per week

Indian 8th Division for four weeks requires $4 \times 3\frac{1}{2}$ -ton bricks

78th Division for four weeks requires $4 \times 3\frac{1}{2}$ -ton bricks

Total = $14 \times 3\frac{1}{2}$ -ton bricks required by D-day + 50, i.e. possible time of opening of Adv. Depot Med. Stores.

(ii)

The Invasion of Italy

At 0430 hours on September 3, 1943, 13th and 17th Bdes. of 5th Division and 3rd Bde. of Canadian 1st Division, the first flight of XIII Corps, under cover of an exceedingly heavy bombardment from land, sea and air, crossed the narrow strait and landed on the Calabrian shore to the north of Reggio and quickly established their beachheads. Of opposition there was none. Reggio and San Giovanni were entered and 5th Division moved to the north and Canadian 1st Division to the south along Route 106 and to the east towards Gambarie and Delianova to seize and hold the Calabrian peninsula. During the night of the 3rd/4th, 3rd Commando landed near Bagnara, met German troops there and drove them northward. 15th Bde. of 5th Division, moving along the coast road (Route 18) under cover of the guns of the Navy, made contact with the commando on the 4th and continued to advance to the north. 13th Bde., landing from the sea south of Gioia Tauro, passed through 15th Bde. to reach Rosarno.

On the 4th the nucleus of 86 Area was established in Reggio. During the Sicilian campaign Eighth Army had evolved a very useful administrative headquarters in Tripoli. This had relieved General Montgomery of much administrative detail. H.Q. 'Tripbase' was now brought to Sicily, to become 'Fortbase.' On the 6th H.Q. Eighth Army opened in Reggio.

The Canadians, moving through the middle of the Toe, advanced as far as Cinquefrondi without meeting much opposition.

On the night of the 7th/8th, 231st Inf. Bde. Gp. landed at Porto S. Venere south of Pizzo, on the coast some sixty miles to the north of



FIG. 20. Southern Italy.

Reggio, to come under heavy fire. Holding its ground it was soon joined by 13th Bde. and thereupon thrust into and beyond Pizzo.

On the 8th the armistice was announced to the world.

On September 9, 1st Airborne Division (1st, 2nd and 4th Para. and 1st Airlanding Bdes.) was transported by units of the Royal Navy to Taranto and at about 0400 hours on this day U.S. Fifth Army with its British component, X Corps, having embarked at Bizerta and Tunis on September 6, began to land on the Salerno beaches. It was hoped that the direct outcome of this would be that the Germans, moving southwards to oppose Eighth Army, would find it desirable to move swiftly northwards again, since the landing would constitute a direct threat to Naples.

The Salerno plain has the form of an irregular triangle with its base resting on the seashore and its apex in the valley of the River Sele overlooked by the dominating height of Mont' Eboli, under the southwestern and southern slopes of which the little towns of Battipaglia and Eboli nestle. Towering over the beaches at Paestum, the ancient Greek city of Neptune, and Agropoli rises the 3,000 ft. Monte Soprano. The Salerno plain itself is flat and cultivated, covered with tree-lined fields and groves of olives and oranges. It is well watered by many rivulets and is drained by many canals.

Under cover of fire from Allied warships, landings were made on a strip of coast about thirty-six miles long from Maiori, to the west of Salerno, to Paestum and Agropoli. The assaulting troops encountered stubborn resistance, for the Germans had lost no time in disarming the Italians in this area and in manning the defences. 2nd and 41st Commandos and U.S. Rangers seized the high ground near Maiori on the extreme left and the commandos then moved on towards Salerno, famous in the Middle Ages for its medical school. 46th and 56th Divisions landed at two points flanking Montecorvino airfield. By night-fall Salerno, part of Montecorvino and the outskirts of Battipaglia were in British hands. During the night the fighting continued in X Corps sector. Between the right flank of 56th Division and U.S. 36th Division, which had landed between Paestum and Agropoli and had advanced into the hills towards Altavilla, Albanella, Roccadaspide and Agropoli, there was a gap of some ten miles.

By September 10, 5th Division and 231st Inf. Bde. Gp. of XIII Corps had advanced rapidly along the west coast road, as had also Canadian 1st Division along the general axis Reggio-Delianova through the Aspromonte range of the Apennines, so that XIII Corps had reached the line Nicastro-Catanzaro, a hundred miles away from its starting-point. It now became desirable to pause for a while mainly for administrative reasons. But General Alexander required General Montgomery to maintain the maximum possible pressure against the Germans facing him so that these could not be used for reinforcing

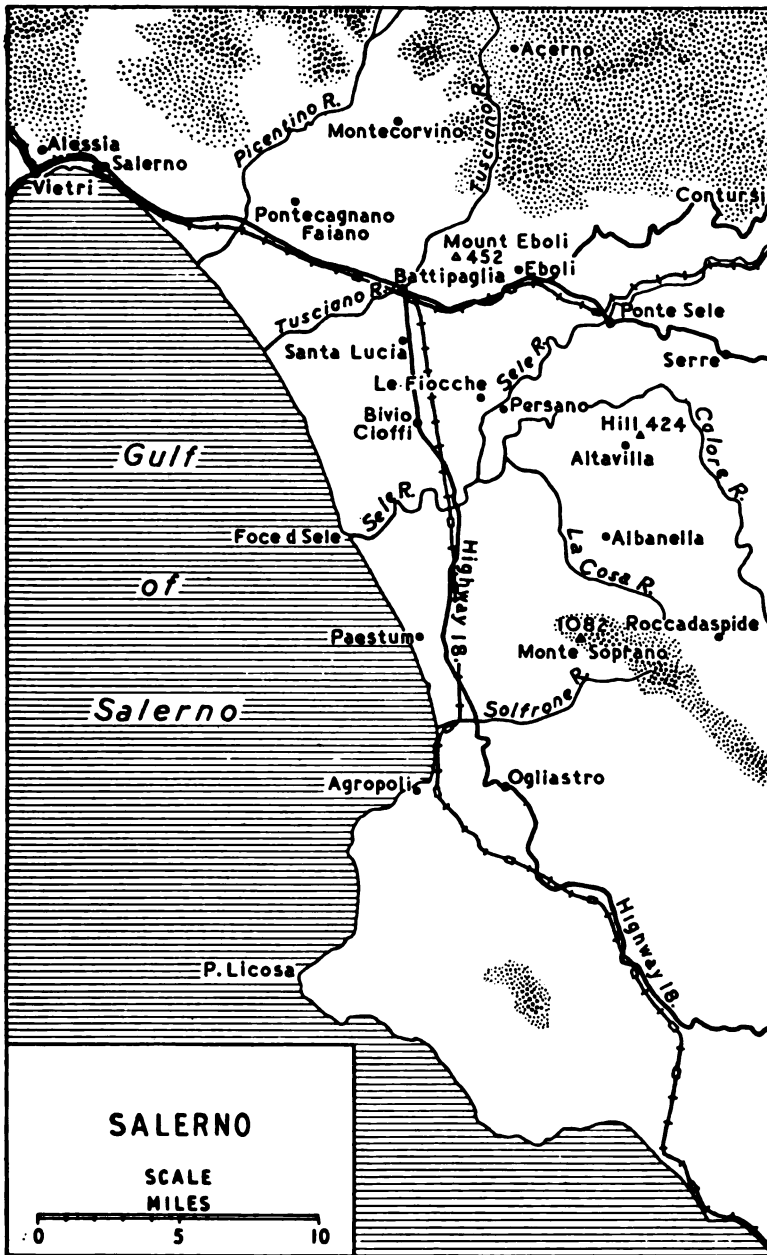


FIG. 21. Salerno.

those now closing in on Salerno. General Montgomery therefore ordered light forces to move northward beyond the Nicastro-Catanzaro line, accelerated the provision of resources for the establishment of the Desert Air Force in the Crotone area on the east coast and took steps to secure at the earliest possible moment the port of Crotone in order that Eighth Army supplies might reach the forward area by sea rather than by road.

On the 10th, at Salerno, X Corps met with very stubborn resistance as it attempted to press inland. The Royal Fusiliers of 167th Bde of 56th Division captured Battipaglia at 0400 hours. Throughout the day there was much fighting around the town and the nearby tobacco factory and in the early evening German armour and infantry, counter-attacking in force, thrust the Royal Fusiliers out of the town. On the left of X Corps 169th Inf. Bde. of 56th Division cleared the Montecorvino airfield. Orders were then issued for an assault upon Mont' Eboli, which dominated the roads in its vicinity. In a night attack 167th Inf. Bde. was to seize a small hill north of the Battipaglia-Eboli road and due south of Mont' Eboli. In the centre 201st Guards Bde. prepared to recapture Battipaglia and the tobacco factory west of the town and then advance up Mont' Eboli and on to the nearby hill west of the River Tusciano while, on the left, 169th Inf. Bde. advanced north of the Montecorvino airfield to a hill halfway to the village of Montecorvino itself.

On this day the Americans on the right were able to occupy the range of hills from Altavilla to Ogliastro, some ten miles from the shore. The Germans were now massed in considerable strength on the high ground directly overlooking the beaches.

In the Taranto area the Germans had withdrawn to the general line Altamura-Matera-Ginosa.

On September 11 Crotone was occupied by Canadian 1st Division. The port was undamaged.

In the Salerno bridgehead the German guns were searching every yard of the area. German bombs and shells and Allied heavy traffic created a permanent cloud of dust which hung like a fog over everything.

On the 12th a new defensive line three thousand yards south-west of Battipaglia was established. This line, which ran from the hamlet of Santa Lucia to the vicinity of Montecorvino station, was held by 167th Inf. Bde. on the right and 201st Guards Bde. on the left. 169th Bde., further to the north, was reinforced by two squadrons of tanks to hold the positions it had won. The right flank of 56th Division was guarded by 44th Recce. Regt. which was probing southwards to make contact with the Americans.

While this new line was being established 46th Division was strongly attacked in its positions in the hills above Salerno and Nocera. German thrusts down the Avellino-Salerno road (Route 88) on the 12th and from

Nocera (Route 18) on the 13th gained ground and a battalion of Oxf. Bucks. was transferred from 167th Bde. of 56th Division to 46th Division to provide reinforcements.

On the 13th, 14th and 15th there was much fighting along the whole front. During its course X Corps was regrouped. H.Q. 167th Bde. and 8th R.F. moved north to pass u/c 46th Division; 23rd Armd. Bde. with the rest of 167th Inf. Bde. took over the area thus vacated and two battalions of U.S. 141st R.C.T. moved in on the left of U.S. VI Corps to close the gap between the American and British forces.

During the evening of the 13th the Germans attacked the front of 56th Division, thrusting down the line of the River Tusciano. They were checked by the Coldstream Guards. Forty-eight hours later the attack was resumed and again repulsed. A smaller attack on the tobacco factory was also defeated and in the vicinity of Santa Lucia a counter-attack by the Scots Greys drove back German troops who had infiltrated through the defensive line.

During these days the battle reached its most perilous phase in the U.S. sector in the valleys of the Sele and Calore and on the high ground above Altavilla. But time was fighting on the side of the Allies for Eighth Army was rapidly approaching from the south. Unless the Germans quickly succeeded in separating and destroying the U.S. and British forces in the bridgehead, they must perforce retire, for with the coming of Eighth Army their southern flank would be turned. On the 13th, the Americans were forced back to within a thousand yards of the beaches but a new defensive line was manned and held.

On the 14th the Allied Strategic and Tactical Air Forces combined to drop a great weight of bombs on the German positions at Eboli and Battipaglia and the battleships offshore searched widely for targets. Thus it was that U.S. VI Corps and X Corps, by their own exertions and with this abundant assistance, survived the crisis.

During the night of September 14/15 two battalions of U.S. 504th Parachute Infantry of U.S. 82nd Airborne Division were dropped in the beachhead, while a third was dropped behind the German lines.

On September 15, while 46th Division of X Corps was still hotly engaged south-east of Salerno, 5th Division of XIII Corps reached Belvedere and its patrols were in the Sapri area, about fifty miles south of the beachhead, and on the following day these joined up with patrols of U.S. VI Corps five miles west of Vallo. The Canadians were threatening Potenza. The Germans left flank on the Salerno front began to swing northward and the threat to the bridgehead was finally removed. In it X Corps had lost 531 killed, 1,195 wounded and 589 missing (of whom most rejoined X Corps later). Of the 738 officers and men of 2nd and 41st Commandos who had landed, 376 were killed, wounded or missing.

On September 19, 5th Division reached Auletta and Canadian 1st

Division, on the 20th, captured the important hill town of Potenza, the capital of the province of Lucania. XIII Corps had advanced three hundred miles in seventeen days and had joined up with U.S. Fifth Army, now preparing to thrust towards Naples. To Taranto from North Africa had come Tactical H.Q. V Corps on September 17 to take command of 1st Airborne Division and to come under command of Eighth Army on September 19. 6 B.S.A. was established in Taranto and came u/c Eighth Army on this date. It had been decided that Eighth Army should be based on Taranto instead of Reggio and should operate on the eastern side of Italy, while U.S. Fifth Army, having established its base in Naples, should advance up the western side. Eighth Army's immediate task was that of securing the general line Termoli-Campobasso-Vinchiaturio in order that the Foggia airfields might be covered.

On September 22/23 the leading elements of 78th Division (11th, 36th and 38th Inf. Bdes.) and 4th Armd. Bde. were brought over from Sicily to Bari and Indian 8th Division (17th, 19th and 21st Inf. Bdes.) from the Middle East to Taranto on September 23 and 24. These formations all came under command of V Corps.

On September 23, under pressure of 1st Airborne Division from the south and Canadian 1st Division from the west, the Germans about Altamura withdrew and patrols following them pushed northward through Spinazzola to reach Canosa di Puglia on the 26th. Elements of 78th Division and 4th Armd. Bde. (Force 'A') moved north to make contact with German rearguards at Barletta and Andria. Patrols reached the Ofanto River on the 24th. On the 27th Foggia, abandoned by the Germans, was entered and by the 29th the leading elements of 78th Division had established themselves in the hills beyond San Severo and Lucera.

By September 18, the Germans had withdrawn from Battipaglia and the Americans were once more in possession of Altavilla and Albanella. On the 22nd the Americans were in Acerno and on the 27th reached Route 7, east of Avellino. Meanwhile X Corps had been fighting hard for the passes north of Salerno. The Rangers, with 23rd Armd. Bde. with the Scots Greys under command, were astride the secondary road from Maiori to Pagani. 46th Division was moving up the Vietri-Nocera road (Route 18) to attack the villages of Pecorari and Camerelle while 56th Division was moving up the axis of the road from Salerno to San Severino Rota (Route 88).

The way from Vietri to Nocera was stoutly defended, but by the morning of the 23rd a battalion of the Foresters of 46th Division was on the lower slopes of 'Telegraph Hill', four thousand yards north of Vietri. Alessia, to the south, was surrounded by the Leicesters but still held out. West of the road the D.L.I. had established themselves on a line from Corpo di Cava to Cava dei Tirreni, while on the road itself the Y. & L. had entered Le Molina.

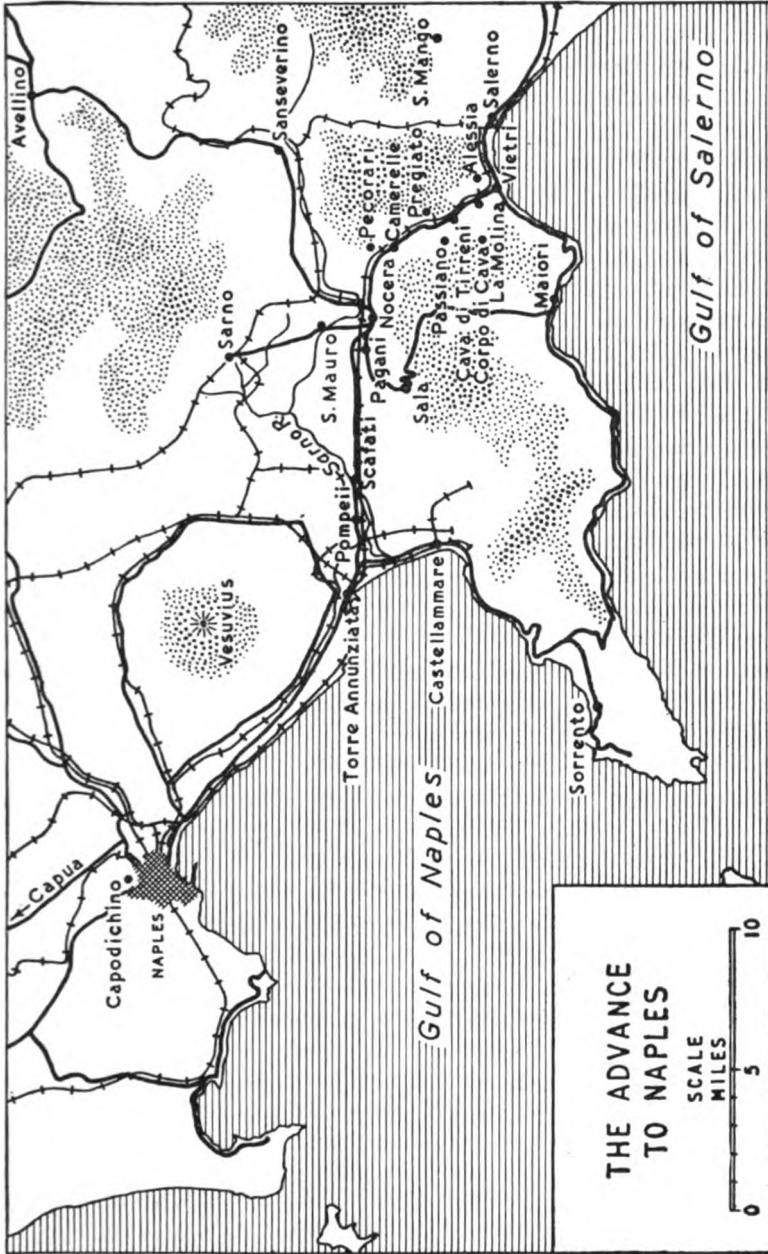


FIG. 22. The Advance to Naples.

On September 24 Le Molina was taken and the Foresters and the K.O.Y.L.I. made considerable progress in the hills south-west of Pregiato. On the left the D.L.I. and Y. & L. took Passiano.

On the 25th first the Hampshires, then the armour and, finally, the whole of the 128th Bde. attacked Epitaffia but the village remained in German hands. Overnight, however, the whole situation changed. All along X Corps' front the Germans withdrew and the advance was resumed. By midday of the 26th the leading troops were within a mile of the Camerelle defile.

During the night of September 27/28 there was fighting on the heights about Camerelle and Pecorari and at dawn a motorborne brigade of the Queen's pushed on to seize and to hold the Nocera pass. Camerelle was captured during the early morning. 128th Bde. and elements of 23rd Armd. Bde. advanced without opposition through the Sala defile to reach the Naples plain. The bridge at Scafate was captured intact by 7th Armoured Division.

Orders were now issued for 46th Division to pass through Force 'A' to concentrate north-west of Nocera and for 56th Division and 7th Armoured Division to move round the inland shoulder of Mount Vesuvius to Capua and thence northwards towards the line of the river Volturno, while reconnaissance units pushed round Vesuvius along the coast road towards Naples.

Then the weather broke. The rain, the demolitions and the opposition offered by the German rearguards impeded but did not halt the advance. It was not until October 1 that the K.D.G., closely followed by U.S. 82nd Airborne Division, entered Naples and that 7th Armoured Division left Vesuvius behind. Over the Castel dell' Ova, where Lucullus had dined and the Emperor Frederick had kept his treasures and which Nelson had known, the white ensign now flew.

In Naples it was found that the electric power, water and sewage systems had been severely damaged, the railway facilities destroyed, the port area completely wrecked and that widespread in the city were hidden many delayed-action bombs. The Germans in front of the U.S. Fifth Army withdrew beyond the River Volturno, twenty miles to the north of Naples.

In this fashion the opening phase of the invasion of Italy ended. Its cost had been 6,847 British and 4,870 Americans killed, wounded and missing.

OPERATION 'BAYTOWN' AND THE ADVANCE OF THE EIGHTH ARMY MEDICAL COVER

141 Fd. Amb., less one company, established its A.D.S. in the school in the village of Gallico, about a quarter of a mile from 'How' beach. One

F.S.U. accompanied each field ambulance of 5th Division. 2 (Cdn.) F.D.S. and 2 (Cdn.) F.S.U. with 9 (Cdn.) Fd. Amb. opened in a school building in Reggio to form an advanced surgical centre.

As the Canadians moved forward A.D.Ss. were opened in the Aspromonte, near Gambarie, on September 6 by 5 (Cdn.) Fd. Amb. and at Delianova by 4 (Cdn.) Fd. Amb. on the 7th. To each of these in turn 1 (Cdn.) F.S.U. and 1 (Cdn.) F.T.U. were attached. When Catanzaro was occupied a staging post was established at Locri by 1 (Cdn.) F.D.S. 158 Fd. Amb., serving 15th Bde. of 5th Division, opened in Scilla where it was joined by Lt. Sec. 7 C.C.S.

D.D.M.S. XIII Corps landed on D-day + 1 and established his office in Gallico. On D-day + 2 Lt. Sec. 15 C.C.S. landed, to open in a training college in Reggio, and on D-day + 3 14 Fd. Amb. joined this light section. 231st Bde. sustained 190 casualties. These were sent by L.C.T. to S. Teresa. The attached F.S.U. operated on 33 casualties during the thirty-six hours that passed before 13th Bde. arrived. On September 8 Lt. Sec. 7 C.C.S. opened in Palmi, on the coast road some twenty-five miles north of Reggio, whence, on the 9th, evacuation was by hospital ship. The Canadian units in Reggio now closed down and joined the main body of Canadian 1st Division.

By the 11th the light section of 15 C.C.S. had been joined by its heavy section and Lt. Sec. 7 C.C.S. moved to Vibo Valentia, some thirty miles further north, where it received many casualties—mostly cases of malaria—from both divisions. On the 14th H.C. *Dinard* arrived at Pizzo and cleared the C.C.S. On the 15th 4 C.C.S. (Army) opened in Reggio and evacuation by air from the Reggio airfield started. 15 C.C.S. moved to Sapri on the 17th.

The field ambulances accompanied their brigades as these went forward. 5 (Cdn.) Fd. Amb. stayed behind near Crotona until it was certain that during the advance casualties would be few. 1 (Cdn.) F.D.S. also remained behind at Catanzaro until some 130 patients whom it was holding had safely been evacuated. By September 20, 9 (Cdn.) Fd. Amb. had reached Potenza, to be joined there next day by 2 (Cdn.) F.S.U. 1 (Cdn.) F.D.S. moved from Catanzaro to Anzi, ten miles south of Potenza.

The ambulance journey to the subdued and melancholy little port of Crotona had now become stretched to a hundred miles. Canadian casualties were therefore evacuated in the L.C.I. that were plying between Crotona and the beaches near the divisional maintenance area near Rotondella, and a company of 4 (Cdn.) Fd. Amb. was detailed to function as a beach evacuation centre.

After September 21, evacuation was partly to 15 C.C.S. at Sapri and partly by the sea route to 5 (Cdn.) Fd. Amb. at Crotona. On the 25th air evacuation from Scanzano commenced. From Crotona evacuation

was by air to Sicily or else to 7 C.C.S. at Vibo Valentia until this unit moved to Bari, a large modern city enclosing an ancient one of narrow streets. Thereafter the line of evacuation from Potenza was through Matera to Taranto or from Gravina to 7 C.C.S. at Bari. Up to the end of September, Canadian casualties totalled 32 killed and 146 wounded.

On the 17th, 60 M.A.C. crossed to the mainland and Army assumed responsibility for evacuation by road from 7 C.C.S. at Vibo Valentia.

At the end of September 7 C.C.S. (XIII Corps) moved from Vibo Valentia to Bari and 15 C.C.S. from Sapri to Barletta, noted for its huge bronze statue of a Roman emperor, its castle and its Norman cathedral. 83 B.G.H. reached Reggio to relieve 4 C.C.S. which, in its turn, relieved 7 C.C.S. at Bari, 7 C.C.S. moving to Foggia on October 11/12.

The Medical Order of Battle and Location Statement of the units of XIII Corps, on September 30, are given in Appendix VIII.

D.D.M.S. V Corps landed in Taranto on September 17. In the beginning the only medical units available were the field ambulances of 1st Airborne Division. 127 Fd. Amb. was in reserve in Taranto, 181 A/L open in Taranto, 16 Para. open in Palagianò and 133 Para. in Rondinella. These therefore had to hold all their patients. With 6 B.S.A. to Taranto came 'A' Coy. 159 Fd. Amb. This at once took over a naval hospital at Grottaglie, near an aerodrome, and thereafter about 100 patients a day were evacuated by air to Catania. Then, on September 25, 151 Lt. Fd. Amb., 8 F.S.U., 35 F.T.U. and the advance party of 70 B.G.H. reached Taranto. The last took over a hospital in Rondinella with 300 patients from 133 Para. Fd. Amb.

The field ambulances of Indian 8th Division on arrival in Italy moved, together with 20 (Ind.) Fd. Hyg. Sec. and 30 I.S.S., to a divisional concentration area near Taranto. The non-divisional units accompanying the division were 9 (Ind.) C.C.S., 30 I.G.H. and 14 C.G.H. The C.C.S. opened in an Italian hospital in Taranto, taking over from 181 A/L Fd. Amb. The I.G.H. moved to a camp on the outskirts of Taranto on September 27. It was instructed to establish 200 beds but its equipment was not yet complete and the site lacked water and electricity supplies. However, by October 3, 300 beds were available. On October 7 a storm played havoc with the hospital; the tents were levelled to the ground and the stores soaked. The 300 patients had to be transferred to a hospital ship lying in the harbour while the damage was repaired. The Indian field ambulances moved to Corato in the second week of October, there to set up a divisional A.D.S. and M.D.S. and to undergo further training.

H.Q. 86 Area moved across from Reggio to Bari and H.Q. 'Fortbase' moved to Taranto on September 29 and assumed control of the Heel of Italy. All the general hospitals in this area were to be placed u/c of this

H.Q. Two Italian hospital ships lying in Taranto harbour were taken over.

The arrival in Taranto of 70 B.G.H. and 9 (Ind.) C.C.S. brought much needed relief to the field ambulances of 1st Airborne Division and restored to them their mobility. This experience indicated that in an operation of this kind it is necessary to ensure that a 600-bed hospital should land within the first week.

During the northward advance of 1st Airborne and 78th Divisions casualties were few in number. On October 1, 5th Division in the Potenza area came under command of V Corps. Its field ambulances were holding up to 600 patients and they were becoming immobilised. But at this time the only major medical unit under V Corps was 9 (Ind.) C.C.S. and, moreover, no M.A.C. was yet with this corps. D.D.M.S. XIII Corps lent ten, and then twenty cars of 146 M.A.C. and these were used to evacuate casualties to 70 B.G.H. at Taranto.

The Order of Battle of the medical units of V Corps on September 23, 1943, is given in Appendix IX.

OPERATION 'AVALANCHE' MEDICAL COVER (BRITISH COMPONENT)

A medical section was an integral part of each of the three beach groups of X Corps and for the assault the field ambulances were brigaded. The medical section of 3rd Beach Group had a United Kingdom establishment and consisted of a F.D.S. with a F.T.U. attached. The light section of the F.S.U. landed early to form a beach dressing station in conjunction with the personnel of the casualty embarkation point. Then the heavy section and the F.T.U. landed to form a surgical centre in a farmhouse. The medical section of 21st Beach Group had a North African establishment, consisting of a field ambulance, less one company, with a F.S.U. attached. The medical section of 35th Beach Group had a Middle East establishment and consisted of a S.M.O., four medical officers, including one I.M.S. officer, two sanitary sergeants, 45 O.Rs. R.A.M.C., 21 S.Bs., one D.R. and two ambulance cars.

Evacuation was through all these beach groups. Casualties from the U.S. Rangers on the extreme left were evacuated daily by L.C.I. under X Corps arrangements either to X Corps beaches or direct to hospital ships. 10 F.S.U., plus a corporal and four N.Os., opened 40 beds in the Rangers sector.

A hospital ship or carrier arrived off the beaches each day, but since the time of their expected arrival was never known, there was often a considerable delay in loading. Large numbers of stretcher cases had to be held on the beaches for long periods and without cover. Air evacuation was not possible at this time.

The transport of lying cases to the beaches presented much difficulty. The beach exits were choked with vehicles that had just been landed and one-way traffic was the rule. All lying cases had to be hand-carried over long distances and so the strain on the limited number of R.A.M.C. personnel was considerable. Even when P.o.W. were used the stretcher-bearing problem was not completely solved.

Evacuation from the beaches was by L.C.I., L.C.T., water ambulances and by D.U.K.W. Of these the last proved to be the most satisfactory for the purpose.

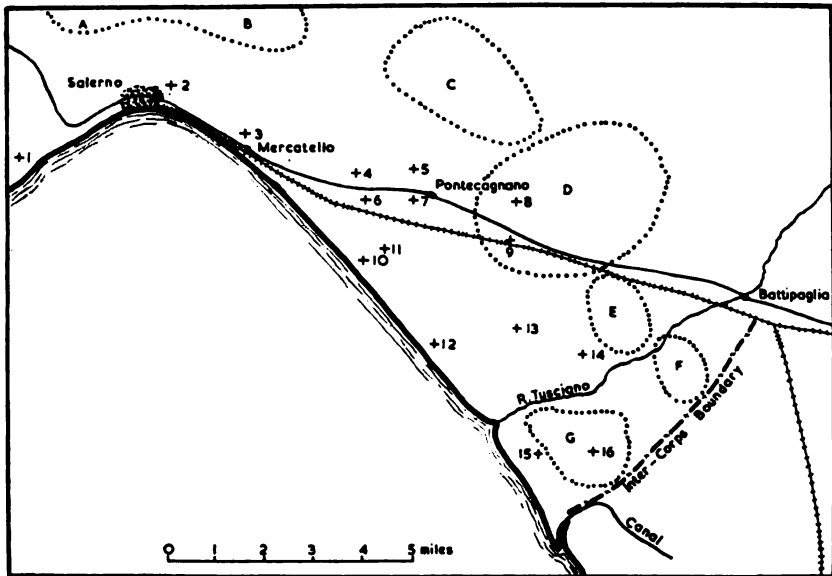


FIG. 23. The Distribution of the Medical Units of X Corps, September 12, 1943.

A. 139th Bde.
B. 128th Bde.
C. 167th Bde.

D. 169th Bde.
E. 201st Guards Bde.
F. 131st Bde.

G. 7th Armoured Division

1. 10 F.S.U.
2. 183 Fd. Amb. A.D.S.
184 Fd. Amb.
3. 185 Fd. Amb.
4. 184 Fd. Amb.
5. 'B' F.D.S.
6. 21 C.C.S. 3 F.S.U. 1 F.T.U.
7. 8 C.C.S.
28 F.S.U.
12 F.T.U.
8. 25 M.A.C.

9. 'A' F.D.S.
10. B.D.S. 35 Beach Gp.
11. 185 Fd. Amb.
123 Fd. Amb. 24 F.S.U.
12. B.D.S. 21 Beach Gp.
13. 14 C.C.S. 9 F.S.U.
25 F.S.U. 25 F.T.U.
214 & 220 Fd. Amb.
14. 5 Lt. Fd. Amb.
15. 3 F.D.S. 36 F.S.U.
16. 131 Fd. Amb. 'A' Coy.

865 and 866 F.D.Ss. had been formed on July 1, 1943, out of 12 Lt. Fd. Amb. in Tripoli. The personnel of 865 landed on D-day, its transport on D-day+1. 866, complete with its transport and equipment, moved from Tripoli in one L.S.T. 865 opened in Italian barracks and 866 in a tobacco factory in Pontecagnano to receive sick and lightly wounded. 865 also took over and issued the battle bricks of medical stores pending the arrival of 10 Adv. Depot Med. Stores.

The distribution of the medical units in the beachhead on September 12 is shown in Fig. 23. 8, 14 and 21 C.C.Ss. were all ashore and functioning. X Corps requirements remained one hospital ship or carrier per day.

On September 12, H.S. *Newfoundland*, lying off the beaches at Salerno, was bombed but suffered no damage. At 1700 hours she put out to sea and joined a group of hospital ships and carriers, all brightly illuminated and steaming at eight knots. At 0500 hours on the 13th she was again attacked by German aircraft. She was hit and fire broke out. There were no patients aboard at the time but five medical officers, five nurses and six O.Rs. R.A.M.C. lost their lives. The survivors, including 99 American nurses and 3 Red Cross workers who were being taken to the bridgehead to join their units, were rescued by the other ships.

The officer commanding 866 F.D.S., commenting upon the experience of his unit on the Salerno beaches, records that it was found advisable to adopt the following organisation :

1. *H.Q. Section*

- (a) C.O., office, administration and reception staff
- (b) Q.M., stores, cookhouse, water sanitation transport

2. *Medical Section*

- (a) Medical Ward. 28 beds
- (b) M.I. Room
- (c) Dispensary
- (d) Dental Centre

3. *Surgical Section*

- (a) Operating theatres for attached F.S.U.s.
- (b) Resuscitation Ward. 6 beds
- (c) Pre-operation and minor surgical ward. 6 stretchers
- (d) Post-operation and major surgical ward. 20 stretchers

4. *Light Section* (self-contained and always ready to move) 26 beds

- (a) Overflow Ward. 30 stretchers

The following additional equipment was carried :

Tents, hospital marquee, extending	2
Beds (Italian regimental pattern)	60
Lorries, 3-ton	1

The F.D.S. was called upon, at very short notice and at different times, to function as :

- (a) a holding unit for large numbers of sick;
- (b) a light field ambulance to accompany an armoured brigade (formed out of two sections);
- (c) a divisional F.D.S.;
- (d) an advanced surgical centre;
- (e) a miniature C.C.S.

It was found that the unit was sufficiently flexible and adaptable to undertake all of these tasks without loss of efficiency.

On September 22, when the fighting in the beachhead had died down, 866 F.D.S. moved to Montecorvino airfield. There it functioned as an air evacuation centre from which as many as 150 patients a day were flown to Catania. By the 29th, when the unit had been reinforced by 5 Q.A.I.M.N.S. and 10 O.Rs. R.A.M.C. from 92 B.G.H., Naples, it was holding more than 400 patients.

TABLE 23
865 F.D.S. Salerno. September 15-30, 1943

	Officers				Other Ranks			
	Sick	B.C.	B.C. (accident)	Totals	Sick	B.C.	B.C. (accident)	Totals
Admitted .	22	1	2	25	375	54	12	441
R.T.U. .	2			2	82	22	7	111
Evacuated	3	1		4	39	9	1	49
Transferred	17		2	19	254	23	4	281

Of the sick about 120 were cases of malaria.

866 F.D.S. Salerno. September–November 1943

	Battle Casualties	Others	Totals
Admitted . . .	498	1,465	1,963
Evacuated . . .	468	1,391	1,859
R.T.U. . . .	24	377	401
Died	11	—	11

	Battle Casualties	Others	Totals
Daily average			
Admitted	7	20	27
Evacuated	6	19	25
Remaining			60
Total Daily Sick treated in M.I. Room			907

TABLE 24

*X Corps. Casualties treated in the Salerno Beachhead
by Medical Units, September 9-18
(Average Strength of Corps—74,032)*

	Battle Casualties	Sick
September 9 .	449	
10 .	303	
11 .	340	
12 .	229	
13 .	314	
14 .	290	
15 .	109	87
16 .	290	127
17 .	282	115
18 .	128	145
	2,734	474

TABLE 25

*Salerno. Numbers evacuated through the Medical Sections
of the Beach Groups. September 1943*

	3 F.D.S.	21 Beach Gp.	35 Beach Gp.	Totals
September 9 .	60	—	245	305
10 .	67	167	—	234
11 .	73	217	230	420
12 .	40	43	140	223
13 .	30	45	114	289
14 .	24	45	179	248
15 .	9	62	117	188
16 .	—	10	190	200
	303	589	1,215	2,107

Awaiting evacuation on September 18 :

Sick	118
Battle Casualties	304
	<u>422</u>

(iii)

The Advance to the Winter Line

EIGHTH ARMY

While the leading elements of U.S. Fifth Army were approaching Naples, Eighth Army prepared to strike northwards and westwards

from Foggia. The Germans were holding a line that ran from a few miles east of Termoli, on the Adriatic coast, through Motta and Alberona to the vicinity of Arcano di Puglia. At this time it seemed that the Germans were intending to withdraw, if but slowly, from the Leg of Italy and to stand on the Rimini-Pisa Line north of Florence. They evacuated Sardinia when they withdrew from their positions at Salerno, and in so doing exposed their right flank to seaborne attack. It began to look as though 15 Army Group would be able to enter Rome without serious opposition and to move up to a line covering the capital city running from Benedetto del Tronto, on the Adriatic, through Terni, the most important industrial town in central Italy, to Civitavecchia, on the Tyrrhenian coast north of Rome. But by October 5 it had become apparent that the Germans, strongly reinforced and in complete control of northern Italy, meant to hold on to Rome and to oppose the Allied advance on the line along and behind the Rivers Garigliano in the west and Sangro in the east—their Winter Line—which ran across the narrowest part of the Leg.

The natural strength of the German positions was enormous. Moreover, the autumnal rains and winter snows could be relied upon to swell the very numerous mountain streams into torrents and to transform the valleys into swamps. Behind the Garigliano were the Aurunci mountains, near the Tyrrhenian coast, and further inland the dominating Monte Cassino and the massif of Monte Cairo. In the centre of the line the Abruzzi mountains precluded any manoeuvre by large forces. In the east large rivers ran at right angles to the axis of Eighth Army's advance at intervals of about ten miles. The only good and useful roads forward from Foggia were the coast road, Route 16, through Termoli and Vasto and Route 17, forty miles inland, running through the mountains through Lucera, Vinchiaturo and Isernia. Connecting these were several first and second class lateral roads twisting along the valleys and over the mountains.

By October 1 Eighth Army had cleared the Gargano peninsula and on this day 4th Armd. Bde. captured Serracapriola, less than twenty miles from Termoli, and on the following day Canadian 1st Division captured Motta. Eighth Army's next tasks were to seize with light forces the line of the Termoli-Larino-Campobasso-Vinchiaturo lateral road (Route 87) and thereafter to move on towards the river Sangro.

While V Corps protected its landward flank, XIII Corps advanced from Foggia with Canadian 1st Division, moving through mountainous country along the axis of Route 17, and 78th Division along that of Route 16. On the night of October 2/3 the S.S. Bde. (1st S.R. Sqn., 3rd and 40th Commandos), u/c 78th Division, sailed from Manfredonia in L.C.I. to land a mile to the west of Termoli and to seize the railway station, the town, the harbour and the road junction south-east of the

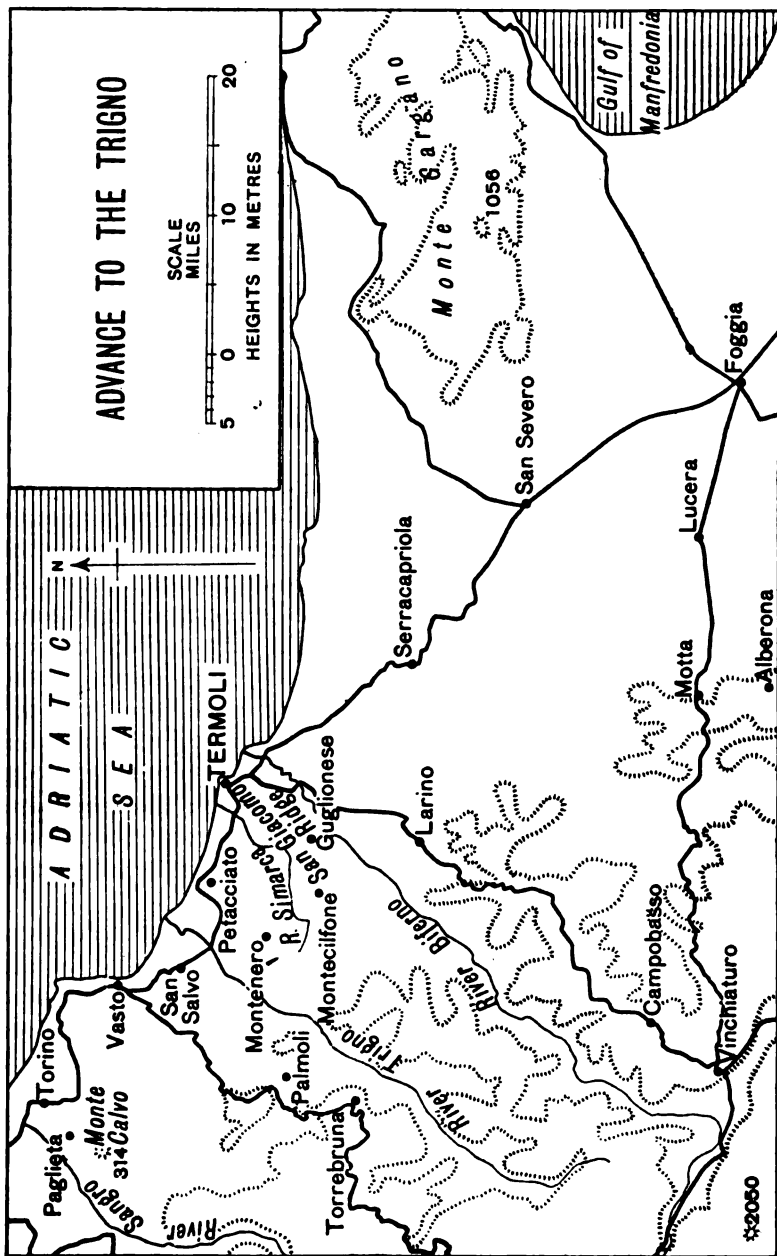


FIG. 25. The Advance to the River Trigno.

town where Routes 16 and 87 meet. They surprised a German battle group and by 0730 hours on the 3rd were in possession of the town and harbour. They beat off a sharp counter-attack and made contact with 11th Bde. of 78th Division which had reached the River Biferno and had crossed it although the bridges over it had been blown. The Germans withdrew to positions south-west of Termoli. While 11th Bde. strengthened its bridgehead and the river was bridged, 36th Bde. embarked at Barletta to land in Termoli in the early morning of the 4th. Early on the 5th the remaining brigade of the division, 38th Bde., sailed from Barletta for Termoli. By the time it reached its destination the Germans were counter-attacking and had achieved considerable success. At dawn on the 6th both sides attacked, but without success. 38th Bde. and a squadron of Canadian tanks were then launched against the San Giacomo Ridge. By 1500 hours the right half of the ridge had been taken. Two hours later the left half was also taken and by nightfall the brigade was on the line of the River Simarca. Termoli was now securely held. The Germans, thoroughly beaten, withdrew to their main position beyond the River Trigno. 11th Bde. took Larino, twenty miles to the south; 36th Bde. occupied Guglionesi. V Corps (78th and Indian 8th Divisions and 4th Armd. Bde.) was then brought up to the right sector while XIII Corps (5th and Canadian 1st Divisions and Cdn. 1st Tk. Bde.) moved to the left. N.Z. 2nd Division, now arriving in the Taranto area from Egypt, was placed in Army reserve.

For the crossing of the Trigno the general plan was that V Corps would thrust strongly in the coastal sector while 5th Division of XIII Corps would attack towards Cantalupo, far inland to the south-west beyond Campobasso. Indian 8th Division moved up to the forward zone on October 18 to become inserted between 78th Division at Larino and 5th Division on the left. On October 19/20 the Indian Division assumed command of the Larino sector and on the following night crossed the Biferno and the Termoli-Palata-Civitacampomarano lateral road to seize Montemitro and Montefalcone and to press against the line of the Trigno. The Germans used the river itself merely as an obstacle. Their main positions were on the San Salvo ridge, some five thousand yards beyond it. The Trigno ran in a broad bed about a hundred yards wide between precipitous banks of fifty to eighty feet in height. The river line was commanded from either side by wooded heights and the town of San Salvo, the pivot of the defensive line, was situated in very thickly wooded country.

78th Division was ordered to take San Salvo by night attack on October 27/28. Under cover of a heavy barrage 38th (Irish) Bde. at first made headway but was ultimately checked and was withdrawn into the bridgehead. In the early morning of November 3, 36th Bde. resumed the attack. San Salvo was entered and German counter-attacks

repelled. 11th Bde. was across the Trigno but was checked in an attempt to take the railway station a mile and a half beyond it. 36th Bde. pushed forward to the high ground beyond San Salvo, soon to be stopped, however. The Germans then withdrew and the station was occupied. 11th Bde., passing through 36th Bde., captured the road junction south-west of Vasto.

Indian 8th Division, some twenty miles inland, fought over very difficult country for the rain had made the roads unusable by M.T. and supplies had to be transported by Indian 13th and 34th Mule Companies. The axis of advance cut the Trigno at a point about fifteen miles from the Adriatic coast. The divisional objectives were the village of Tuffillo, beyond the river, and the 2,000-ft. peak, Monte Farano, beyond the village.

Following the withdrawal of the Germans on 78th Division's front Indian 8th Division was able to occupy Tuffillo, Palmoli and Monte Farano and thereafter turned southwards towards Torrebruna on Route 86 while 78th Division occupied Vasto. Ind. 17th Bde. u/c 78th Division captured Cupello on Route 86 on the night of November 5/6 and entered Furci, on the same lateral road, on the 6th. On the 7th, Ind. 21st Bde. captured Torrebruna.

After Motta had been captured on October 2, Cdn. 1st Bde., having taken Volturara, advanced on Campobasso while Cdn. 2nd Bde. on its left moved forward along the minor roads of the Sannio mountains. The villages of San Marco and Baselice were taken on the 4th and 5th and on the 7th Cdn. 3rd Bde. forced the crossing of the Fortore and captured Pietracatella and Gambatesa. On the 8th, the Canadian Recce. Regt., covering the gap between V and XIII Corps, entered Colletorto, there to be relieved by 15th Bde. of 5th Division now u/c XIII Corps. This brigade entered Bonefro and on the 13th, after heavy fighting, took Casacalenda. On October 14, Cdn. 1st Bde. entered Campobasso and Cdn. 2nd Bde. captured Vinchiaturro on the following day.

The advance of XIII Corps was resumed on the 17th when 15th Bde. of 5th Division cleared the area to the north-west of Casacalenda and the Canadians set out on the difficult road to Isernia. There was fierce fighting at San Stefano, Baranello and Campochiaro before they were captured, but thereafter resistance slackened and Cdn. 2nd Bde. took Colle d'Anchise and Spinete on the 23rd. On the following day Cdn. 3rd Bde. captured Boiano and Cdn. 1st Bde. entered Castropignano.

On October 27, 5th Division went into the lead and of the Canadian Division only Cdn. 1st Bde. remained engaged in active operations in this sector to take Torella and Motise. Cdn. 4th Recce. Regt., relieving 15th Bde. of 5th Division, covered the gap between 5th and Indian 8th Divisions on the left of V Corps.

5th Division, pushing forward in foul weather along the Isernia road,

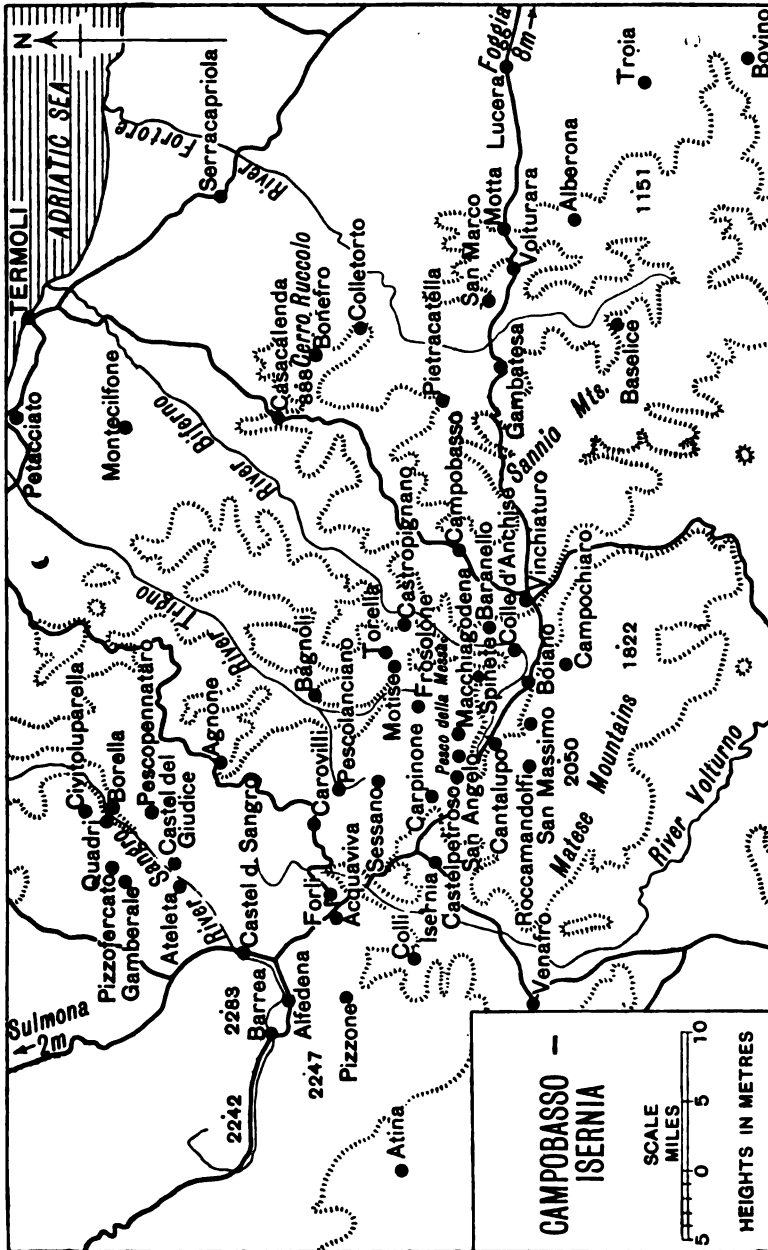


FIG. 26. Campobasso-Isernia.

quickly occupied Macchiagodena, San Massimo and Cantalupo during the morning of the 30th, and on the following day entered Roccamandolfi. On November 3, after losing the villages of San Angelo and Castelpetroso, the Germans disengaged and Isernia was taken on the 4th.

Extensive demolitions impeded 5th Division's further advance, but on the 9th Forli was entered. Then torrential rain made movement impossible except on the roads. It was not until November 22 that patrols of 5th Division reached Alfedena, to find it empty of Germans.

On the right of 5th Division the Canadians were, during this time, advancing towards the headwaters of the Trigno and being equally impeded by demolitions and rain. They took Pescocolanciano on November 7 and Agnone on the 10th. The Germans facing them withdrew behind the Trigno and were laying waste the countryside. On December 2, Canadian 1st Division was relieved by 15th Bde. of 5th Division and passed to command of V Corps for the attack on Ortona.

Ind. 19th Bde., after its capture of Palmoli, occupied nearby Carunchio and, on November 12, crossed the River Osento to link up with Ind. 17th Bde. then operating u/c 78th Division in the Atessa area. Snow had fallen on the 10th and the weather was worsening. Road maintenance demanded so much labour that the forward units became greatly depleted. On November 13 Atessa was captured by Ind. 17th Bde. which then reverted to the command of Indian 8th Division. Ind. 19th Bde. then relieved Ind. 17th Bde. and, continuing the advance, took Perano and compelled the Germans to give up their positions at Archi and Tornareccio. This success screened the move of N.Z. 2nd Division up to the forward zone. Its headquarters were near Gissi and it took over the left section of XIII Corps area and command of Ind. 19th Bde. The rest of Indian 8th Division went into reserve to a concentration area near Paglieta.

MEDICAL COVER

78TH DIVISION

When the commando units landed at Termoli on the night of October 2/3, they suffered heavy casualties (3 officers and 29 O.Rs. killed, 7 officers and 78 O.Rs. wounded and 1 officer and 22 O.Rs. missing). A signal was received from them at 1600 hours on the 3rd to the effect that some 70 seriously wounded urgently required medical attention. A company of 11 Fd. Amb. of 78th Division, with 29 F.S.U. attached, moved into Termoli as soon as the river had been bridged and opened an A.D.S. On the morning of the 4th, 217 Fd. Amb., with 4 F.S.U. attached, moved in to open a M.D.S. During the day heavy fighting in the town isolated the A.D.S. and M.D.S. although these were only a quarter of a mile from one another.

On October 5, 152 Fd. Amb. took over the M.D.S. site from 217 Fd. Amb. and, on the 29th, 18 C.C.S. in its turn took over from 152, which

moved on to Petacciato, seven miles further north along the coast road, Route 16. On this day 103 casualties endured by 1st R.Ir.F. were evacuated under shellfire by hand-carriage across the Trigno to Bren carriers on the far side. They were then conveyed by A.F.S. cars to 132 Fd. Amb. at Foggia.

On November 11, 11 Fd. Amb. established its M.D.S. in Casalbordino, near the coast to the north-west of Vasto, and 217 Fd. Amb. its A.D.S. in Torino, on the River Sangro on Route 16 to the north of Casalbordino. On the 19th, 152 Fd. Amb., on wheels, moved up to rear divisional H.Q., one mile east of Casalbordino, to cross the Sangro when opportunity offered and to open on the far side.

INDIAN 8TH DIVISION

When Indian 8th Division moved to the forward area the divisional medical units accompanied their respective brigades. On October 25 they were distributed as follows :

29 (Ind.) Fd. Amb.	.	.	Foggia
31 " " "	M.D.S.	.	Larino (two F.S.U.s. and two F.T.U.s. attached)
			'B' Coy.. with 181 Airlanding Fd. Amb. at Termoli
33 " " "	M.D.S.	.	Acquaviva
20 " " "	Fd. Hyg. Sec.	.	Larino

(9 (Ind.) C.C.S. was at Torremaggiore; 30 I.G.H. at Taranto and 14 C.G.H. at Bari.)

On November 2 the distribution of the field ambulances was as follows :

- (1) One company of 31 (Ind.) Fd. Amb. was with Ind. 17th Inf. Bde.
- (2) Detachments of 29 (Ind.) Fd. Amb. were attached to the different United Kingdom medical units along the evacuation chain to Taranto.
- (3) 33 (Ind.) Fd. Amb. had established its A.D.S. close to the Trigno to serve Ind. 19th Inf. Bde.
- (4) A Company of 33 (Ind.) Fd. Amb., later reinforced by a company of 29 (Ind.) Fd. Amb., was stationed at 'Doll's House' north-west of Acquaviva to provide a light M.D.S.
- (5) At Acquaviva 33 (Ind.) Fd. Amb. had established its M.D.S. and to this were attached 7 F.S.U. and 26 F.T.U.

Because of the impossibility of using ambulance cars, porter parties and mules had to be used in the forward area. Each R.A.P. had six S.Bs. and three mules attached to it. 189 casualties passed through the M.D.S. during November 2 and 3 on their way to 9 (Ind.) C.C.S., now at Larino. The M.D.S. was cleared by 146 M.A.C. From the C.C.S. evacuation was to San Severo, the ambulance railhead, and thence by ambulance train to Bari and Taranto.

5TH DIVISION

While 5th Division was in reserve in the Foggia plain between October 5 and 26, 141 and 158 Fd. Amb. were first in Potenza, closed, and 164 Fd. Amb. was open in Foggia. Later both 141 and 158 moved to Foggia, 141 opening there. 1 F.S.U. was attached to 158 Fd. Amb. up to October 5 and thereafter to 164. Evacuation was first to 15 C.C.S. at Barletta and then to 7 C.C.S. which opened in Foggia on October 8.

When 5th Division moved forward to capture Isernia, 158 Fd. Amb. opened in Vinchiaturo and 164 in Boiano (both on Route 17). An A.D.S. accompanied each brigade. When 17th Inf. Bde. advanced over the

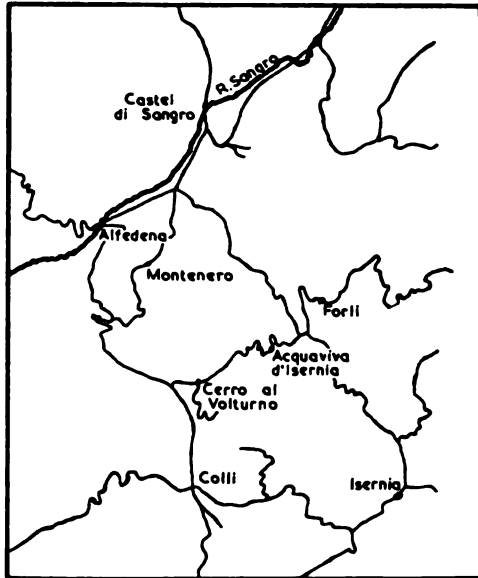


FIG. 27. 5th Division. Isernia—Castel di Sangro.

mountains from Vinchiaturo to capture Alfedena, on the River Sangro to the south-west of Castel di Sangro, 141 Fd. Amb., with 5 F.S.U., 4 F.T.U. and 139 M.D.U. attached, established its M.D.S. in Isernia. In front of this, pack transport had to be used. 42 mules were allotted to the divisional medical services. These were grouped into two sections of 21, 12 for the transport of equipment and 9 carrying three pairs of cacolets and six pairs of litters. In addition 6 'bantams', fitted to carry 2 stretchers each, were loaned to the divisions of Eighth Army.

The following arrangements were made :

- (1) The R.A.P. of 2nd R.S.F. of 17th Inf. Bde. was reinforced by the addition of one medical officer, 12 S.Bs. and one 180-lb. tent from the mountain A.D.S.

- (2) A 'mountain' A.D.S. (one company of 141 Fd. Amb.) accompanied 2nd R.S.F. and established itself about four miles along the track leading to Montenero, south-east of Alfedena.
- (3) A rear A.D.S. (one company of 164 Fd. Amb.), with 31 F.S.U. and 20 additional S.Bs., was established in the neighbourhood of Cerro a Volturmo.
- (4) A car post was established at Acquaviva d'Isernia, where casualties were transferred from 'bantams' to the ambulance cars of 567 A.F.S.
- (5) The M.D.S. of 141 Fd. Amb., with 5 F.S.U. and 4 F.T.U. and 139 M.D.U. attached, remained at Isernia.
- (6) Eighteen mules were allotted to the mountain A.D.S. for evacuation purposes.

The equipment of the mountain A.D.S. was carried forward by 10 mules, that of the rear A.D.S. at Cerro by 18 in one journey. The equipment of 31 F.S.U. was carried on 2 mules and in 6 Everest packs carried by the unit's personnel. A mule-load was about 200 lb. The equipment of the mountain A.D.S. included :

180-lb. tents	2
Blankets	40
Water Pakhals (8 gal.)	2
Plasma, bottles	16
Giving sets	8
Stretchers (carried by S.Bs.)	10

On November 22, 20 casualties were received by the mountain A.D.S. The terrain was so difficult that the interval between the time of wounding and of surgical intervention sometimes extended to nearly twenty-four hours. It was necessary to have 8 stretcher-bearers with each group of 3 or 4 mules, and litters proved to be more useful than did the cacolets. When Montenero was captured on November 23, evacuation by jeep became possible along a track to a road along which the ambulance cars of 567 A.F.S. could travel.

CANADIAN 1ST DIVISION

The resistance which Canadian 1st Division encountered in its advance on Campobasso and Vinchiaturio is reflected in the casualties which it suffered. In the first fortnight of October 147 Canadians were killed and 401 wounded.

Until Campobasso was captured casualties were cleared by the forward field ambulance companies to an A.D.S. maintained well forward on the divisional axis by 4 (Cdn.) Fd. Amb., first at Lucera and then in succession at Motta Montecorvino, Volturara along Route 17, and Riccia, south of this. 1 (Cdn.) F.D.S. opened at Motta on October 5 and moved to Volturara on the 10th. 5 (Cdn.) Fd. Amb. remained at Lucera to hold fever and jaundice cases. One Canadian F.S.U. and the F.T.U. were attached to the A.D.S. of 4 (Cdn.) Fd. Amb.

When Campobasso was captured a Canadian medical centre was established there. 9 (Cdn.) Fd. Amb. opened there on October 16 and to it 1 (Cdn.) F.S.U., 2 (Cdn.) F.S.U. and 1 (Cdn.) F.T.U. were attached. On the 22nd it was joined by 2 (Cdn.) F.D.S. from Foggia. 2 (Cdn.) F.D.S. and 1 (Cdn.) F.S.U. had been sent, at the request of D.D.M.S. XIII Corps, to Foggia on October 5/6 to help the British medical units there in dealing with the casualties suffered in the fighting around Termoli. 1 (Cdn.) F.S.U. was first attached to 132 Fd. Amb. but joined 2 (Cdn.) F.D.S. when this opened. 1 (Cdn.) F.T.U. was also sent to Foggia. During the forty-eight hours of its stay in Foggia the F.D.S. performed 31 operations. These Canadian units then joined the Canadian advanced surgical centre (A.S.C.) at Motta. In this centre all Canadian casualties were collected. Evacuation therefrom was by A.F.S. ambulance car to Volturara and thence by 146 M.A.C. 132 Fd. Amb. provided a staging post in Volturara. 5 (Cdn.) Fd. Amb. ran a convalescent centre at Lucera.

With Canadian 3rd Bde. to the Sangro sector in November went 4 (Cdn.) Fd. Amb. and 2 (Cdn.) F.S.U. The A.D.S. was established at Civitanova and from here evacuation was to Campobasso, forty miles away.

2 (Cdn.) Lt. Fd. Amb., with Cdn. 1st Tk. Bde., opened a M.D.S. on Route 17, midway between Lucera and Foggia, early in October with sections attached to the widely dispersed regiments. When late in October the whole tank brigade was concentrated about Campobasso, the light field ambulance established its M.D.S. first at Ielsi, on Route 17 south-east of Campobasso, and later at Riccia, south-east of Ielsi. When in November the brigade passed u/c V Corps and moved to Termoli, all patients were evacuated to 15 C.C.S. at Campobasso.

Canadian patients were sent direct, or *via* British general hospitals, to 5 Cdn.G.H. in Catania in Sicily or to 15 Cdn.G.H. at El Arrouch in Tunisia. From 15 Cdn.G.H. Canadian patients were normally sent to 1 (Cdn.) Con. Depot or else discharged directly to the Canadian Base Reinforcement Depot, both of these units being in the Philippeville area. From Philippeville cases requiring further evacuation were sent to the United Kingdom by hospital ship.

At this time, it is to be noted, there was no Canadian C.C.S. in Italy. It was difficult, therefore, to give effect to the policy of providing a completely Canadian evacuation chain for Canadian casualties. The Canadian hospitals in Sicily and North Africa were far away. 5 Cdn.G.H. had been sent as a contribution to the total resources of Eighth Army and 15 Cdn.G.H. had been sent to North Africa for the specific purpose of receiving Canadian casualties arriving there. Neither of these hospitals could be moved to Italy until a base had been established. However, other Canadian medical units were soon to reach Italy.

In November, H.Q. Canadian I Corps, Canadian 5th Armd. Division and corps troops reached the Italian theatre. The armoured division with 24 (Cdn.) Fd. Amb., 7 (Cdn.) Lt. Fd. Amb., 13 (Cdn.) F.D.S. and 13 (Cdn.) Fd. Hyg. Sec. landed at Naples and proceeded to Gravina, Altamura and Matera, when 24 (Cdn.) Fd. Amb. opened in Altamura, 7 (Cdn.) Lt. Fd. Amb. in Matera and 13 (Cdn.) F.D.S. in Gravina. Evacuation from these units was to be to 1 Cdn.G.H. which was due to open in Andria on December 1. The Canadian field units took over the equipment and vehicles of 7th Armd. Division but found them deficient and in bad repair. They were obliged to make good by using captured equipment and vehicles.

H.Q. Canadian I Corps and corps troops remained in Sicily for the time being. The corps troops included, in addition to those mentioned below, 16 (Cdn.) F.D.S., 4 (Cdn.) F.S.U., 5 (Cdn.) Fd. Hyg. Sec., 1 (Cdn.) Mob. Hyg. Lab., 1 (Cdn.) Mob. Bact. Lab., 1 (Cdn.) Adv. Depot Med. Stores and 1 (Cdn.) M.A.C. 4 (Cdn.) C.C.S. opened in Catania, 5 (Cdn.) C.C.S. in Messina, 3 (Cdn.) F.D.S. in Lentini and 8 (Cdn.) F.D.S. in Taormina. Evacuation from these units was to 5 Cdn.G.H. in Catania, 33 B.G.H. in Syracuse and 2 Fd. Hosp. in Messina.

3 (Cdn.) F.S.U. and 2 and 3 (Cdn.) F.T.U.s. were attached to 14 C.C.S. serving with X Corps.

NEW ZEALAND 2ND DIVISION

While New Zealand 2nd Division was still in Egypt preparing for its next task, its 4th Brigade was transformed into an armoured brigade. It was decided, however, not to convert 4 (N.Z.) Fd. Amb. into a light field ambulance for the reasons that it was already very mobile and that it was not intended that the armoured brigade should be used as part of a larger and solely armoured formation. This field ambulance, however, received special training in such matters as the removal of casualties from A.F.Vs. and was given four additional ambulance cars and three jeeps.

On September 13 the division moved to Burg el Arab for further training and the N.Z. Consulting Surgeon was sent to Italy on medical reconnaissance. The troops were inoculated against typhus and were given four mepacrine tablets a week. First-aid kits were issued to every A.F.V. and to every gun, and chloroform craquettes and half-grain morphia tubunics were made ready. The first flight of the division sailed from Alexandria for Italy on October 5 and the second on the 17th.

With the first flight went :

A.D.M.S. N.Z. 2nd Division and staff
6 (N.Z.) Fd. Amb.
2 (N.Z.) F.T.U.
4 (N.Z.) Fd. Hyg. Sec.

With the second went :

4 (N.Z.) Fd. Amb.
 5 " " "
 1 " C.C.S.
 1 " M.D.U.
 102 (N.Z.) V.D.T.C.
 one sec. N.Z. M.A.C.

They reached Taranto on October 9 and 22 respectively. Unit transport followed later.

In Taranto 6 (N.Z.) Fd. Amb. opened at once in the Museum in order to hold New Zealand patients and so preclude the possibility that these, being admitted to a United Kingdom medical unit, might be passed along the chain of evacuation to Sicily and beyond.

On October 31, 3 N.Z.G.H. reached Bari and opened on November 6 in the vast polyclinic there. The building itself had been completed but its equipment and furnishing had not. In it there came to be accommodated also :

98 B.G.H.
 14 C.G.H.
 30 I.G.H. (later replaced by 102 S.A. G.H.)
 4 Base Depot Med. Stores

while one block continued to be used for a time by the medical services of the Italian army. For the first half of November 64 New Zealand sisters and nurses were loaned to 98 B.G.H., which at this time lacked its Q.A.I.M.N.S. personnel. 1 (N.Z.) Con. Depot arrived shortly after this to open at Casamassima, fifteen miles inland from Bari.

U.S. FIFTH ARMY

By October 3 the engineers of the U.S. Fifth Army had brought the port of Naples into partial use. A public health department had been established and a fire-fighting unit organised. The water, electric power and sewage systems were being hastily repaired and the citizens were now proffering unrestrained welcome to their liberators. Without pause U.S. VI Corps and X Corps pressed on to the line of the River Volturno.

Rising in the mountains north-east of Isernia this river pursues a tortuous course south-eastwards and then westwards to the Tyrrhenian sea. East of Capua it flows through hilly and thickly wooded country, but west of this town its convolutions twist their way through flat fields that stretch for several miles on either side. The whole of this area is overlooked by the commanding heights of Monte Massico, near the coast to the north.

In X Corps sector in the fertile coastal plain, 7th Armd. Division continued the advance in the centre directed on Aversa, with 56th

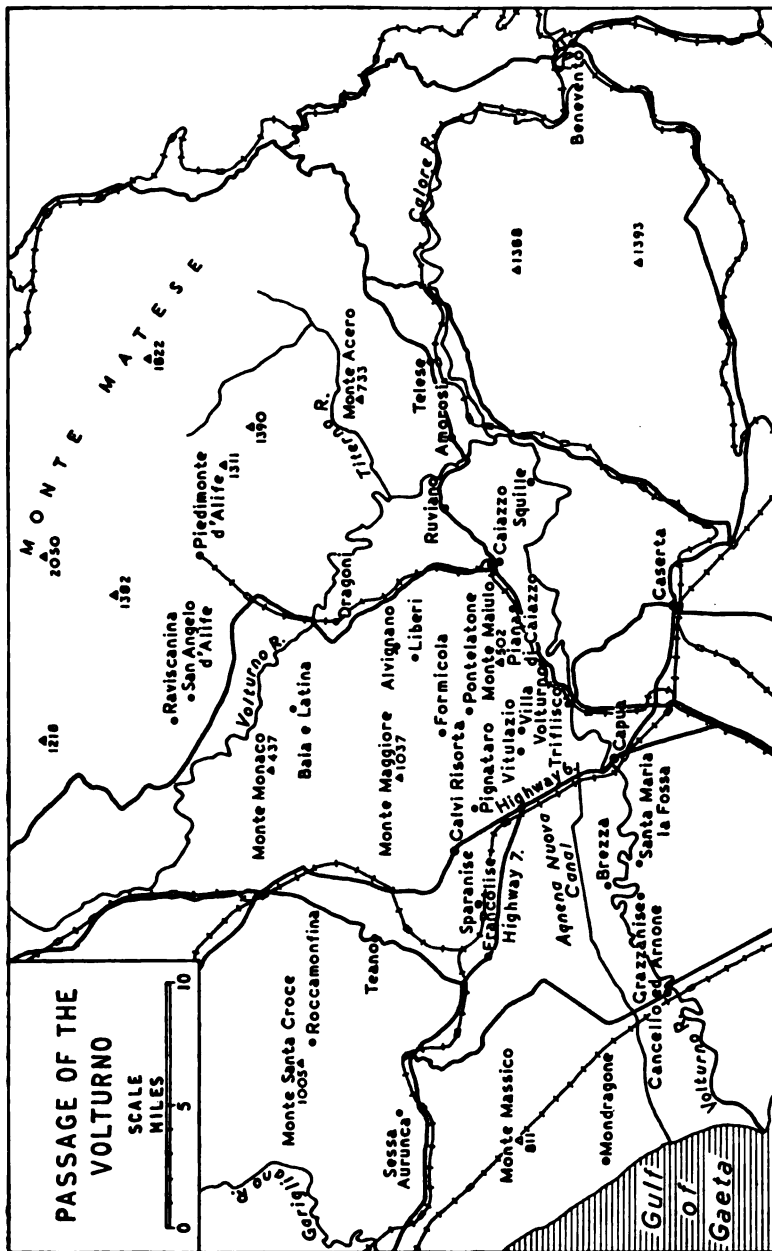


Fig. 28. The Passage of the Volturno.

Division on the right and 46th Division on the left, on the general line Caserta-Aversa-Qualiano. Acerra fell to 56th Division on October 3, the outskirts of Caserta were entered on October 5 and Capua occupied on the 6th.

On the right of X Corps, U.S. VI Corps moved forward through mountainous country. U.S. 34th Division entered Benevento on October 3 and, on the 4th, U.S. 45th Division passed through and crossed the River Calore.

By October 8, X Corps was on the general line of the River Volturno from the sea to the Triflisco Gap, east of Capua. In the coastal sector 46th Division relieved 23rd Armd. Bde. and held the road to Cancellò; in the centre 7th Armd. Division was in Santa Maria la Fossa and Grazzanise; on the right 56th Division occupied the line from west of Capua, through Capua to the Triflisco Gap. In the U.S. VI Corps sector U.S. 3rd Division was on the right of 56th Division and further east were U.S. 34th and U.S. 45th Divisions on the line of the Volturno.

The tactical plan was as follows :

1. U.S. VI Corps would launch the main attack east of Capua.
2. X Corps, in a secondary rôle, would establish bridgeheads across the river and secure the ridges north and north-east of Mondragone.
3. A R.C.T. of U.S. 36th Division would make a seaborne landing to assist X Corps.
4. The attack would be launched on October 9.

The attack was delayed for three days by ceaseless rain. At midnight on October 12/13 the artillery laid down a heavy barrage on the German positions across the river and an hour later, under a full moon, the infantry pushed their rafts and boats down the bank into the icy water and began to cross. In X Corps sector 7th Armoured Division vainly attempted to cross the river north of Santa Maria la Fossa and east of Grazzanise. 56th Division, near Capua, also failed to get across, but on the left 46th Division took the Germans by surprise and made good progress. East of Capua the American divisions crossed the river and thrust northwards. The advance of U.S. 3rd Division threatened to expose its left flank, for its neighbour, 56th Division, was still held south of the river. The inter-corps boundary was therefore adjusted so as to include in X Corps sector the bridge that the Americans had thrown across the river at the Triflisco Gap. 56th Division crossed by this bridge on the 15th and 201st Guards Bde. advanced to secure the flank of the U.S. 3rd Division. On the 15th, 7th Armoured Division entered Brezza and occupied the town on the following day. The Germans then withdrew, but because of demolitions and the rain, and because of the mountainous nature of the country in VI Corps sector, the pursuit was necessarily tardy.

To begin with, water, rations and supplies had to be ferried across the Volturno for the reason that the river line was still well within reach of the German guns. Before the railway could be used enormous damage had to be repaired, for the Germans had used a huge iron claw which, being dragged behind an engine, not only tore up the track but also fractured every sleeper.

U.S. 34th Division entered Alvignano on the 17th, Alife on the 20th and San Angelo d'Alife and Raviscanina on the 23rd after bitter fighting. U.S. 45th Division entered Piedimonte d'Alife on the 19th, U.S. 3rd Division took Dragoni on the 18th and on the 21st drove the Germans from the slopes of Monte Monaco.

In X Corps sector the main axis of advance was Route 6, the Via Casilina, running north through Capua. On October 17, 201st Guards Bde. took Monte Grande and a stubbornly defended height above Vittrilazio and reached Formicola by the afternoon of the 18th. 169th Bde. advanced through Villa Volturno to reach Pignataro to come into line with the Guards Bde., to reach the bifurcation of the Via Casilina into Routes 6 and 7 and to advance thereafter to Calvi Vecchia and towards Sparanise. 168th Bde., from Sicily, now joined 56th Division and moved into the line. 7th Armoured Division made slow progress over the rain-sodden ground to reach Sparanise and Francolise on the 25th.

It was now intended that U.S. Fifth Army should advance to a line running from Isernia through the mountains beyond Venafro to the confluence of the Rivers Liri and Garigliano west of Mignano and thence along the Garigliano to the sea. The immediate objectives of X Corps were Monte Santa Croce and Monte Massico which separate the plain of the Volturno from the valley of the Garigliano. On the wet flats overlooked by these mountains there were few roads and many bridges, the former in poor condition, the latter all blown. As the ground in the centre of X Corps sector was unsuitable for armour, 46th and 7th Armoured Divisions changed places, the armour moving towards the coast. It was intended that 56th Division should attack from Teano while 46th Division opened the defile at Cascano and advanced to capture the road junction below Sessa Aurunca. 7th Armoured Division was to protect the left flank of the attack and threaten the coast road through Mondragone. The main attack went in on October 30. 56th Division drove the Germans out of Teano; in the centre 46th Division made steady progress; but on the left 7th Armoured Division quickly became mud-bound. However, on the 31st Mondragone and the hill behind it were captured. Then Monte Cicoli was cleared and the coast road opened. 7th Armoured Division then moved inland behind Monte Massico towards Carano.

46th Division took Roccamonfina on November 1 and occupied Giusti. On November 2, while 56th Division continued to advance

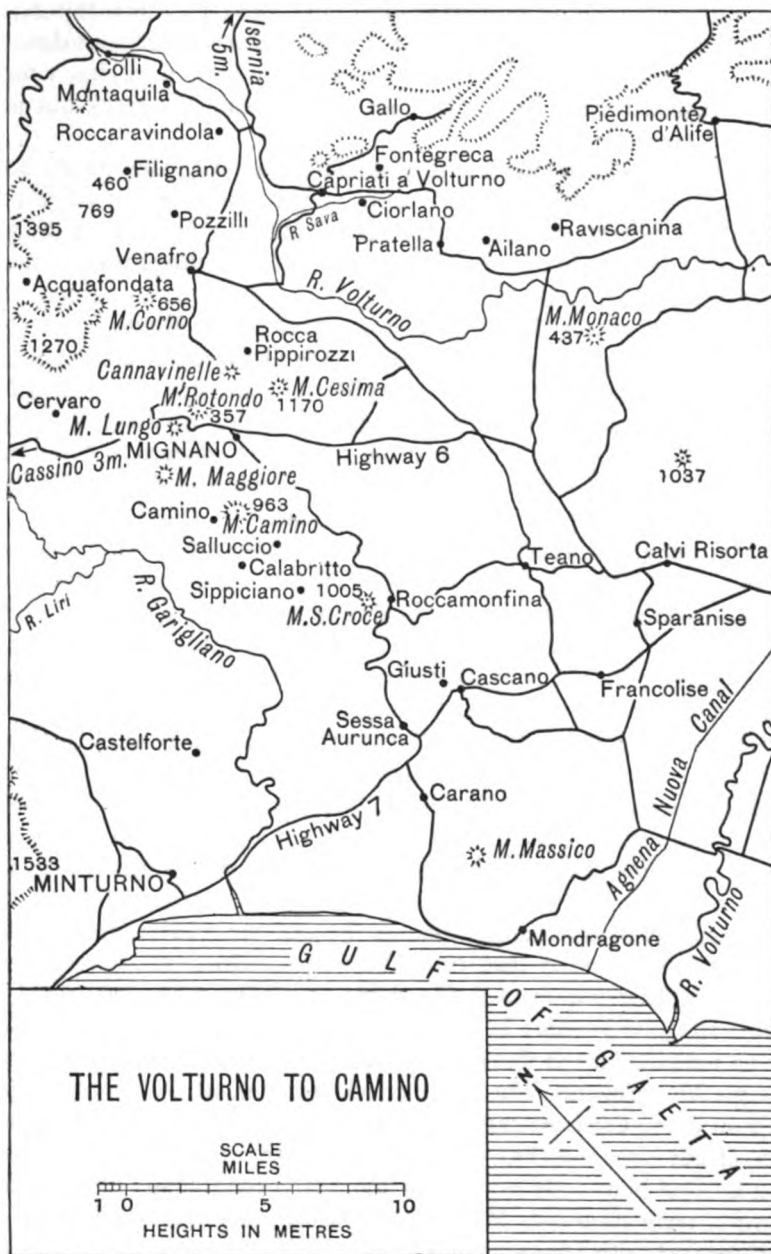


FIG. 29. The Volturno to Camino.

through the mountains, 46th and 7th Armoured Divisions reached the Garigliano. X Corps was now in position for its projected assault on the great mountain mass of Camino, La Difensa and Monte Maggiore which dominated the road to Rome.

Meanwhile U.S. VI Corps had been fighting its way from Isernia westward for some fifteen miles to Monte Passero and thence south-westward through the mountains to Cervaro and the Garigliano west of Mignano.

To 56th Division was allotted the task of capturing Camino, La Difensa and Monte Maggiore. From Galluccio, whence the attack would start, two parallel ridges climbed steeply toward the crest. The westerly ridge rose from the village of Cavelle to Point 819, the easterly—the 'Razorback'—to a solitary building called the 'Monastery'.

168th Bde. took Sipicciano and 201st Guards Bde. captured Cavelle on November 5. By early morning on the 7th the Coldstream had captured Calabritto, west of the Cavelle ridge and the Grenadiers were on the lower slopes of Point 819. The Scots Guards climbed a goat track in the cleft between the two ridges to assault the 'Razorback'. They encountered very stubborn opposition and were checked but held on to their positions for five days, during which they were supplied by mule teams led by Basuto, Mauritian and Italian muleteers.

In Calabritto on November 10 the Coldstream were relieved by the Royal Berkshires and went uphill to relieve the Grenadiers who had endured severe losses. Then through the Coldstream the Oxf. Bucks. passed to capture Point 819. A strong counter-attack forced them to give ground. Difficulties of supply and paucity of reinforcements made it necessary to withdraw from Camino and to give up all the ground gained.

On U.S. VI Corps front the situation was comparable. U.S. 3rd Division was checked on the eastern slopes of La Difensa, west of Mignano, and on the southern aspect of Monte Lungo. West of Venafro U.S. 45th Division advanced over the mountains, slowly driving the Germans before them to Pozzilli and thence towards Filignano and Acquafondata. U.S. 34th Division captured Montaguila and made contact with U.S. 504th Parachute Regt. at Colli, on the river bank.

Along the whole front of U.S. Fifth Army the advance now came to a standstill in front of the ramparts of the Winter Line. On November 15 General Alexander instructed General Clark to halt his advance and regroup his forces. Since landing at Salerno U.S. Fifth Army had lost in killed, wounded and missing, nearly 22,000 officers and men, of whom more than 10,000 were in X Corps. The divisions had been continuously in action, some without any rest at all, since September 9 and sickness was now exacting a heavy toll. How grievously the infantry had suffered is shown by the numbers of killed, wounded and missing

in certain of the battalions of 46th and 56th Divisions of X Corps from September 9 to October 31.

	<i>Officers</i>	<i>O.Rs.</i>
2nd Hamps. . . .	11	354
1/4th „	16	287
5th „	22	426
2/4th K.O.Y.L.I. . . .	20	383
5th Foresters	23	537
16th D.L.I.	13	367
9th R.F.	25	547
2/5th Queens	16	410
3rd Coldstream Guards	24	282
2nd Scots Guards . . .	27	304

The smallest number of casualties endured by any battalion in these two divisions was 11 officers and 115 O.Rs.

MEDICAL COVER (BRITISH COMPONENT)

Late in September an Italian medical officer reported that it was rumoured that there were many British wounded in a hospital at Caserta. On October 5 a patrol of carriers entered the town and discovered 140 of them, the Germans having withdrawn. 'A' Company 214 Fd. Amb. of 56th Division went in and took over the hospital.

During the course of X Corps' advance across the Volturno to the line of the Garigliano the functioning of the medical services of X Corps provided nothing of unusual interest.

The medical services of X Corps, like those of Eighth Army, had adjusted themselves to the conditions of a theatre very different from Libya and Tunisia. The terrain was mountainous, the roads tortuous. Heavy rains transformed the soil into deep thick mud. To leave the road, as had to be done repeatedly in order to circumvent the many demolitions, was to court disaster. Before doing so it was necessary to put chains on the wheels of all vehicles, to park vehicles on ground higher than the road itself and to ensure that their bonnets pointed downwards towards the road. There was but one way through the village perched on its hill-top—along its single narrow street—and this at once became a bottleneck for vehicular traffic. The autumn wet and cold forced the medical units to make use of buildings for billets and dressing stations. It was rare, however, to find a building in the rural areas that was at all suitable for either purpose. Since as the Germans withdrew they systematically destroyed roads, bridges and culverts, and mined and booby-trapped anything they did not destroy, the evacuation of the sick, and especially of the severely wounded, was an ordeal for all concerned. It became necessary to push surgical facilities as far forward as possible, even up to the A.D.S. on occasion.

From the experience gained by the medical services of X Corps during the crossing of the Volturno it was learnt: that when any river crossing is contemplated, a medical officer should accompany the R.E. Recce. party to inform himself of the project and of the conditions pertaining thereto; that provision for the holding of casualties on the far side of the river must be established quite early during the operation; that a dump of stretchers and blankets should be maintained on each side of the river at the site of the crossing; that a medical detachment consisting of one medical officer and eight O.Rs. R.A.M.C. should be with the party in charge of the crossing in order to supervise evacuation until such time as units were established and normal evacuation could proceed; that entrenching tools should be in the possession of R.A.M.C. orderlies so that they might be able to dig slit trenches in order to afford some cover for casualties; that two-seater, four-wheel-drive ambulance cars should be made available to each field ambulance since larger vehicles approaching the river in the early stages of the crossing were too vulnerable; that if at all possible there should be a definite allotment of assault boats to medical units, say six to a division, to be manned by R.A.M.C. personnel, and that in view of the very heavy stretcher-bearing involved in such an undertaking medical units should be at full strength at the time of such an operation.

When the advance of U.S. Fifth Army and X Corps towards the Volturno began, 94 B.S.A. was established in Salerno. Lt. Sec. 14 C.C.S. and 5 Lt. Fd. Amb. were open in school buildings in Salerno and 21 C.C.S. was holding some 300 patients in comfortable buildings in Castellammare, in which drab little town two F.S.U.s. were dealing with accidental injuries.

On October 1, 865 F.D.S. moved to the civil hospital at Nocera, on the 8th to a school in Tavernanova, on the 13th to a military hospital in Aversa and on the 18th to a School in Santa Maria. To this F.D.S. 25 F.S.U. was attached. On October 2, 866 F.D.S. formed an A.S.C. in a nursing home at Torre del Greco along with 10 and 36 F.S.U.s. On the 7th this centre moved to Parete.

On October 25, X Corps Medical Order of Battle and Location Statement was as follows:

<i>Type of Unit</i>	<i>Unit No.</i>	<i>Location</i>
C.C.S.	21	Aversa moving to S. Maria
	3 F.S.U. & 132 & 133 M.D.U.s. attached	
	14	Aversa
	5 & 23 General Surgical Teams and detachs. U.S.	
	2 Aux. Surg. Gp. & 25 F.T.U. attached.	

<i>Type of Unit</i>	<i>Unit No.</i>	<i>Location</i>
	8	S. Maria
	9 & 23 F.S.U.s., 12 F.T.U., 155 M.D.U., 25 General Surgical Team & Detach. U.S. 2 Aux. Surg. Gp. attached.	
Fd. Amb. (corps)	150 Lt.	Afragola on duty at Pomigliano airfield
F.D.S.	'A' (865)	S. Maria
	25 F.S.U. attached	
	'B' (866)	Parete moving to Aversa
	10 & 36 F.S.U.s. attached	
Fd. Hyg. Sec. (corps)	52	Aversa
A.M.C.U. (corps)	78	Aversa
with divisions and areas:		
F.S.U.	6	7th Armd. Division
	24	46th Division
F.T.U.	1	56th Division
M.D.U.	140	46th Division
	135	56th Division
	153	57 Area Naples
M.A.C.	25	Corps Area, S. Maria
A.F.S.	485	Corps Area, S. Maria

in the Naples Base 92 B.G.H. was established.

At the end of October and during the early part of November forward movement had produced changes in this distribution (Fig. 30). 21 C.C.S. had joined 8 C.C.S. in S. Maria; 'A' F.D.S. (865) had moved up to the vicinity of Sparanise and 'B' F.D.S. (866) to that of Pignataro.

(iv)

The Assault on the Winter Line

EIGHTH ARMY

Beyond the River Sangro the Germans had constructed the strongest defensive positions yet faced by Eighth Army, the eastern section of their Winter Line in places twenty miles deep and studded with strong-points, which, though not continuous, stretched across the width of Italy between the mouth of the Sangro and the mouth of the Garigliano on the Tyrrhenian shore. This line was not one on which a mere delaying action was to be fought; it was to be a closed frontier between

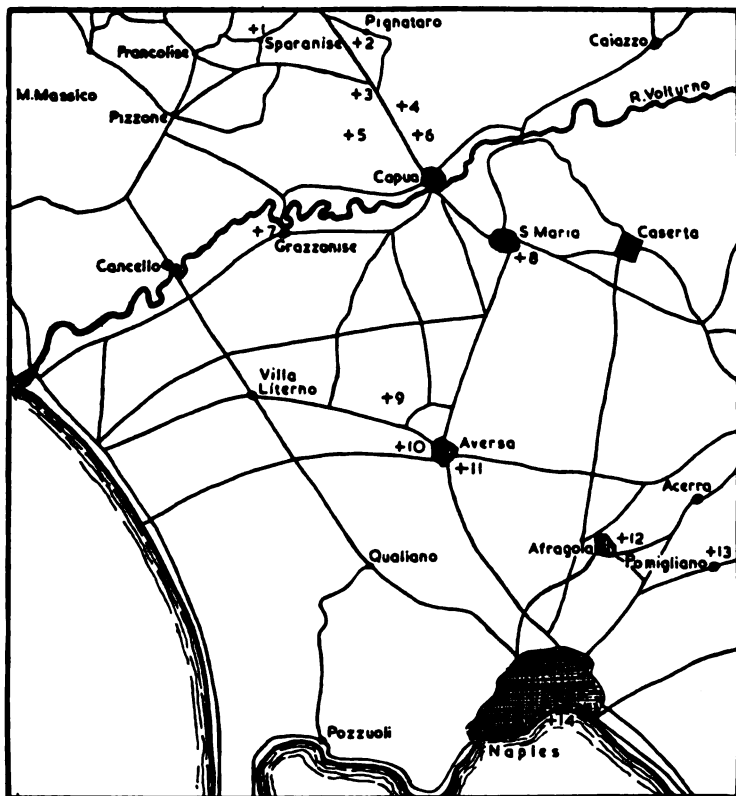


FIG. 30. The Distribution of the Medical Units of X Corps.
Early November 1943

- | | |
|------------------------------|---------------------------------|
| 1. 5 Lt. Fd. Amb. 865 F.D.S. | 8. 8 C.C.S. 21 C.C.S. 25 M.A.C. |
| 2. 866 F.D.S. | 9. 2 Lt. Fd. Amb. |
| 3. C.P. 25 M.A.C. | 10. 131 Fd. Amb. |
| 4. 185 Fd. Amb. | 11. 14 C.C.S. |
| 5. 184 Fd. Amb. | 12. 150 Lt. Fd. Amb. |
| 6. 167 Fd. Amb. | 13. 150 Lt. Fd. Amb. Detach. |
| 7. 183 Fd. Amb. | 14. 92 B.G.H. |

German-occupied northern Italy and the south. The line of the Sangro itself was only lightly defended and 36th Bde. of 78th Division, advancing from Torino, had no great difficulty in clearing the southern bank and establishing a number of small bridgeheads. The river, five to six feet deep, ran in a bed a hundred yards wide between sheer sides about ten feet high. Beyond the river the ground rose gently to an escarpment about fifty feet high from which an upland slope, studded with farms and olive groves, climbed to a ridge—the Sangro ridge—on which stood the fortified villages of Fossacesia, near the coast, Santa Maria and Mozzagrona, about four miles inland.

TACTICAL PLAN

78th and Indian 8th Divisions (V Corps) were to launch the main attack in the coastal sector with the object of breaking through the German defences along the Sangro ridge on a narrow front. N.Z. 2nd Division, under Army command, to the left of V Corps was to launch an attack on its own front, primarily of a diversionary nature although provision was made to exploit any success that might be achieved. The main diversionary attack was to be conducted by XIII Corps still further to the left, while U.S. Fifth Army in the western sector was to be requested to increase its pressure on its own front. All efforts were to be made to keep the direction of the main thrust a closely guarded secret. In the uplands about Castel di Sangro and Alfedena XIII Corps did its utmost to create the impression that the main assault was to be unleashed in that sector. A bogus Army H.Q., dummy gun positions and dumps were constructed and a leakage of information, suggesting that XIII Corps' attack would be on a date actually two days after the real attack by V Corps, arranged.

The main objective for the attack was the general line Ortona a Mare-Lanciano and D-day was to be November 20. 36th Bde. of 78th Division was to enlarge its bridgeheads and capture the German positions on the escarpment. Then Indian 8th Division would attack the German main positions, moving along the road to Mozzagrogna. 4th Armd. Bde. and 38th Bde. of 78th Division, following, would wheel right towards Fossacesia.

The N.Z. Division, having taken up its position in the line between the confluence of the Sangro and the Aventino Rivers on the Adriatic coast, was to cross the river and press on at all speed, piercing the Winter Line and capturing Castelfrentano, Guardiagrele, Orsogna and, finally, Chieti, standing high upon its hill and dominating the lateral road to Rome (Route 5).

THE ASSAULT

36th Bde. of 78th Division secured control of the southern bank of the river and enlarged its bridgehead by November 15. On the 20th the brigade quickly secured most of its objectives on the escarpment. Attempts to bridge the greatly swollen river failed and the attack by Indian 8th Division had to be postponed. The bridgehead was reinforced with great difficulty by 11th Inf. and 4th Armd. Bdes. and on the 22nd the river was bridged. The Germans withdrew to their main positions on the ridge. On the 23rd the river was in full flood and none of the bridges could be used. D.U.K.Ws. had to be used to maintain the troops across the river and to evacuate their casualties. After the 24th the weather improved and the river fell, making it possible to resume the operation.

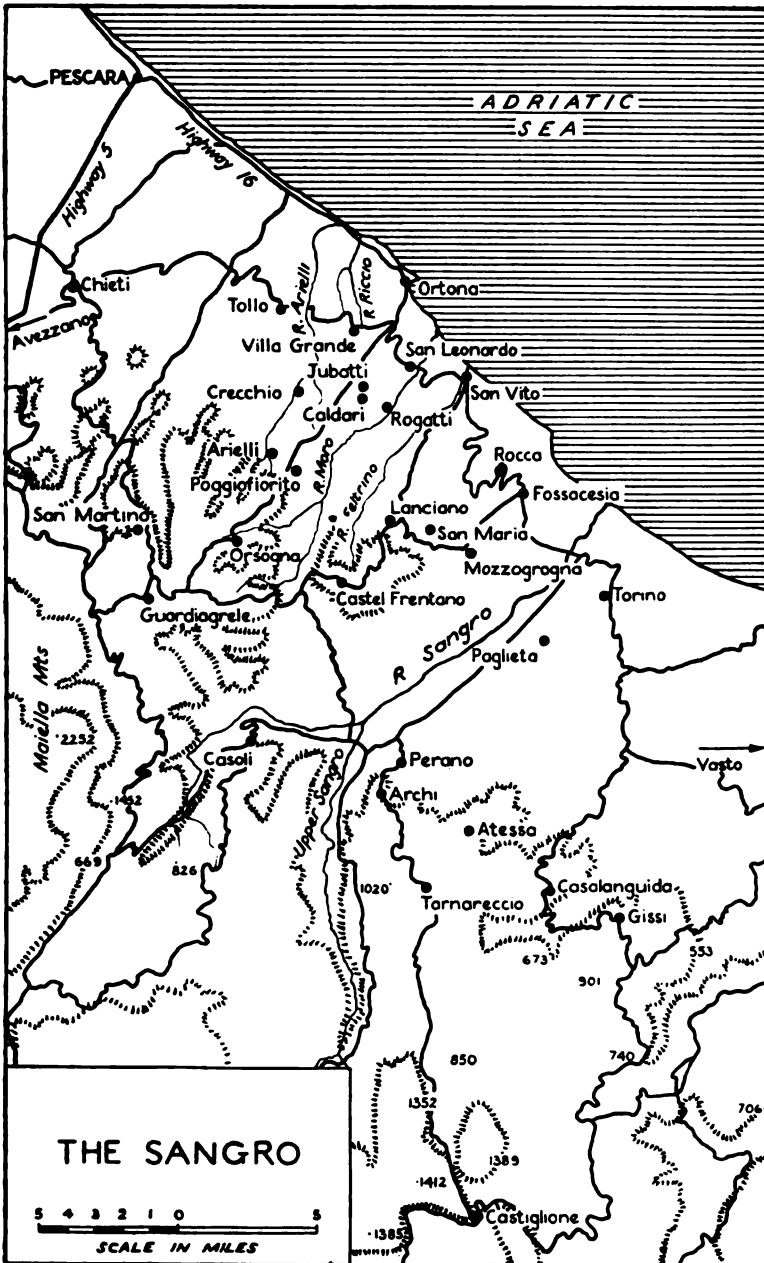


FIG. 31. The Sangro.

In the early morning of November 27 Indian 8th Division captured a spur a thousand yards south-east of Mozzagrogna. On the left of Indian 8th Division, N.Z. 2nd Division crossed the Sangro on the night of the 27th and captured Castelfrentano. Then Ind. 17th Bde. went in to capture Mozzagrogna and Santa Maria. Mozzagrogna was taken but craters and demolitions prevented tanks and supporting weapons from reaching the infantry in this village and also those who were advancing on Santa Maria and a German counter-attack at dawn on the 28th forced them to withdraw.

At dawn on November 29, 38th Inf. and 4th Armd. Bdes. attacked and ultimately captured the Li Colli position and Santa Maria. On the morning of the 30th they stormed into Fossacesia and so pierced the Winter Line and thereafter cleared the ridge between this village and the sea. On December 1, Rocca was captured and on the 2nd the outskirts of San Vito were entered. After fierce fighting San Vito was cleared and 38th Bde. and the armour moved up to the line of the Feltrino, a small stream north of San Vito, in preparation for an advance to the River Moro. The Feltrino was crossed and at daybreak on the 4th tanks went forward with the infantry into the wooded and undulating country beyond to reach the line of the Moro.

78th Division was now relieved by Canadian 1st Division, the commitments of which were taken over by 5th Division. 78th Division went to the Foggia area to rest. Cdn. 2nd Bde. was concentrated near Fossacesia, Cdn. 1st Bde. at Petacciato and Cdn. 3rd Bde., awaiting relief by 5th Division, in the mountains north of Isernia. Until December 5 the advance to the Moro was maintained by 38th Bde. of 78th Division u/c of Canadian 1st Division with Cdn. 2nd Bde. on its left between Sant' Apollinare and Rogatti and with Indian 8th Division on its right.

On December 6 the Canadians, in the face of fierce resistance, crossed the Moro near its mouth and opposite Rogatti. Ind 21st Bde. relieved Cdn. 2nd Bde. in front of Rogatti. On the 8th, Cdn. 1st Bde. attacked San Leonardo to secure a firm bridgehead from which Cdn. 2nd Bde. might attack and secure the crossroads on the ridge beyond. San Leonardo was captured. Cdn. 2nd Bde. encountered very determined resistance and Cdn. 3rd Bde. was sent in but was likewise checked. However, on the 13th progress was made and by nightfall on the 14th Berardi was captured and held against counter-attack.

On December 7, N.Z. 2nd Division forced its way into Orsogna but was forced to withdraw. The New Zealanders attacked again, and again were thrown back. Indian 8th Division reached and cut the Ortona-Orsogna lateral secondary road in two places but the Germans still held, and were determined to hold, this road near the sea.

On December 18, the Canadians resumed their attack and reached the outskirts of Ortona. Meanwhile, on the left, Indian 8th Division had

made progress. The near bank of the river was so steep that from it a bridge could not be built. So an area on the opposite bank was seized, the bridging material carried across and the bridge built in reverse. Across this 'Impossible Bridge', as it was called, passed Ind. 21st Bde., tanks and supporting weapons, to secure a low ridge overlooking the Ortona-Orsogna road. Ind. 17th Bde., crossing the river further to the left, captured the village of Caldari after a costly engagement. Ind. 19th Bde. then advanced to occupy Jubatti and make contact with the left flank of the Canadians. Thereafter, while Ind. 19th Bde. patrolled towards Villa Grande, the Canadians concentrated on the forcing of a passage along the highway to Ortona. They found Ortona and Tollo to be strongly held but broke into Ortona on the 21st. Savage house-to-house fighting ensued and it was not until the 28th that the town was cleared.

Heavy fighting had likewise been taking place at Villa Grande. On December 22, Ind. 19th Bde. moved to the assault under cover of a heavy barrage. Every inch of the ground was contested, but by the 27th the village, save for a few houses on its northern fringe, was taken. Ind. 21st Bde. seized the high ground north of the village and the Germans still in the village withdrew on the 28th.

In the meantime N.Z. 2nd Division had succeeded in reaching to within a quarter of a mile of the centre of Orsogna whence, being strongly counter-attacked, they were forced to withdraw to Castelfrentino. On December 7, the New Zealanders attacked again, having passed u/c of XIII Corps and having been reinforced by 17th Bde. of 5th Division, but little ground was gained. 78th Division was called forward from reserve to relieve 5th Division.

A third assault was then launched against Orsogna on an axis to the right of it. Patrols of 17th Bde. entered Poggiofiorito but the advance was too costly to be maintained. On December 23 a fourth and final attack was launched by XIII Corps reinforced by 5th Division from V Corps. 15th Bde. of 5th Division took Arielli and N.Z. 5th Bde. advanced a thousand yards but failed to break through the German defences.

The worsening of the weather and the unexpected dourness of the German resistance persuaded General Montgomery that the offensive in the Adriatic sector should be halted. For some considerable time to come the ground was likely to remain too soft to permit the extensive use of armour, in respect of which Eighth Army was superior. The fighting had been and was likely to remain very costly, more costly to Eighth Army than to its opponents. For example, since crossing the Sangro the New Zealanders had suffered more than 1,600 casualties. It was impossible that a decisive battle could be fought and won in this sector until winter had given way to spring.

The line held by the Germans in this sector followed the course of the River Riccio from its mouth, about two miles north of Ortona,

crossed the River Arielli, passed through the villages of Crecchio and Arielli, ran east of Orsogna and climbed the foothills of Maiella.

Eighth Army's task was that of preventing the Germans reducing their strength in this sector by transferring formations to the western sector against U.S. Fifth Army, where large offensive operations remained possible. But this task was made difficult by the steady reduction of its strength. 1st Division, newly arrived in Italy and assigned to Eighth Army, was diverted to U.S. Fifth Army. N.Z. 2nd Division was to be transferred to U.S. Fifth Army as soon as it was relieved by Indian 4th Division, on its way from the Near East.

On December 30, General Montgomery left for the United Kingdom to take up command of 21 Army Group. He was succeeded by General Leese.

MEDICAL COVER

78TH DIVISION

An A.D.S. of 152 Fd. Amb., wholly mobile on six Bren gun carriers, crossed the Sangro on the night of November 26 and opened under the escarpment on the night of the 27th/28th. Evacuation therefrom was by carrier across the river and thereafter by four-wheel-drive ambulance cars to the A.D.S. of 217 Fd. Amb. at Torino di Sangro and to the M.D.S. of 11 Fd. Amb. at Casalbordino.

When Fossacesia was captured, field ambulance S.Bs. were attached to each of the battalions of 38th (Irish) Bde.; one of these battalions rode into battle on the tanks of 4th Armd. Bde.

Throughout the action the river was rising and many R.E. bridges were washed away. The water, bitterly cold, was four to seven feet deep, fifty to one hundred and fifty feet wide and sometimes running at fifteen knots. A D.U.K.W., an amphibious 3-ton vehicle taking 6 lying or 20 sitting cases, was used for the crossing of the river and another, flying Red Cross flags, was held in reserve. Attempts were made, with the help of R.E.M.E., to devise a satisfactory method for getting casualties back across such a river as the Sangro then was by overhead carriage. One promising method took the following form: The patient was strapped to the stretcher with a stretcher sheet. The stretcher was slung in a cradle hung from large 'snatch blocks' which ran on a $\frac{3}{4}$ -inch steel cable of a R.E.M.E. Recovery Schammel Winch, 120 yards long. The far end of this cable was anchored across the river to a Bren gun carrier. Ropes attached to the cradle were used to pull the stretcher across. When the river was over fifty yards wide the Bren gun carrier was anchored.

On December 28, when 36th Inf. Bde. moved to the Sangro sector, a M.D.S. was opened in Atessa by 11 Fd. Amb. For evacuation, ski-stretchers, stretchers with improvised wooden skis attached, were used.

During this period the weather was so bitterly cold that in this division there were 113 cases of 'exposure', including five deaths.

Special medical supplies were distributed to all R.A.Ps. and C.Ps. for use should the units become snowbound.

The issue of two jeeps to each field ambulance, together with 14 divisional medical pool jeeps, fitted with two-stretcher gears, greatly advantaged the divisional medical services. Casualties which otherwise would have been at least twelve hours on their way to the M.D.S., reached there in less than four. Moreover, the jeep greatly reduced the hand-carriage distances. The four-wheel-drive A.F.S. ambulance cars were always used at the forward A.D.Ss., the gradients and the mud proving too much for the standard K.2 ambulance cars.

CANADIAN 1ST DIVISION

Canadian 1st Division, relieving 78th Division at the end of November, assumed full responsibility for V Corps coastal flank along the River Moro. It was set the task of securing Ortona and for ten days was engaged in a fierce struggle.

When the relief took place 5 (Cdn.) Fd. Amb. took over the M.D.S. of 152 Fd. Amb. at Fossacesia and the A.D.S. at Rocca San Giovanni. On December 4, it established a casualty collecting post at San Vito Chietino. To the A.D.S. were attached 1 (Cdn.) F.S.U., 28 (Br.) F.S.U. and 1 (Cdn.) F.T.U. By December 8, 4 (Cdn.) Fd. Amb. and 1 (Cdn.) F.D.S. were across the river but until the 11th, 5 (Cdn.) Fd. Amb. carried most of the casualty load. In the interval 2 (Cdn.) F.S.U. relieved 28 F.S.U. and 4 (Cdn.) Fd. Amb. established a casualty collecting post on the north bank of the Feltrino River in front of San Vito and 1 (Cdn.) F.D.S. provided nursing orderlies to assist 5 (Cdn.) Fd. Amb.

The A.D.S. at Rocca admitted over 900 British and Canadian casualties up to the end of December 10. These were evacuated to 5 C.C.S. at Vasto. When the bridges were down a detachment from 5 (Cdn.) Fd. Amb. set up a beach evacuation centre at Fossacesia Station on the coast. Thence they were cleared by D.U.K.W. to Casalbordino Station further down the coast, whence they were transferred to Vasto by M.A.C.

On December 11, 4 (Cdn.) Fd. Amb. opened an A.D.S. at San Vito in place of the casualty collecting post of 5 (Cdn.) Fd. Amb., which unit moved to Sant' Apollinare on the south bank of the Moro. 1 (Cdn.) F.D.S. moved from Fossacesia to Rocca to relieve 5 (Cdn.) Fd. Amb. The casualty collecting posts now began to evacuate to San Vito. From San Vito, Priority I and II cases (those requiring resuscitation and those requiring urgent surgery) were evacuated to the advanced surgical centre of Rocca based on 1 (Cdn.) F.D.S. Priority III cases (all others) were sent to 5 C.C.S. at Vasto, seriously sick to 216 (Br.) Fd. Amb. at Cupello, minor sick to 2 (Cdn.) Lt. Fd. Amb. at San Vito and exhaustion

cases to Rocca, where the divisional psychiatrist was running a treatment centre in conjunction with, first, the field ambulance and, later, with the field dressing station.

2 (Cdn.) F.S.U. and 1 (Cdn.) F.T.U. joined the A.D.S. at San Vito, as did 1 (Cdn.) F.S.U. on the 19th. Four nursing sisters from 1 C.C.S. had also joined the field dressing station. Thus on the 19th, when the German resistance ended in this sector,

9 (Cdn.) Fd. Amb. had a company running a casualty collecting post at San Leonardo across the River Moro.

5 (Cdn.) Fd. Amb. was at Sant' Apollinare with one company running a casualty collecting post.

4 (Cdn.) Fd. Amb. had an A.D.S. at San Vito

{	Resuscitation, Urgent Surgery, Triage.
---	--

9 (Cdn.) Fd. Amb., less one company, and 2 (Cdn.) F.D.S.	}	were in reserve.
--	---	------------------

On December 26 these arrangements were modified for Ortona was not yet in Canadian possession. 5 (Cdn.) Fd. Amb. opened in Sant' Apollinare to relieve 4 (Cdn.) Fd. Amb. of responsibility for triage and to enable it to deal with all resuscitation and urgent surgical cases. The more serious Priority III cases were sent to 1 C.C.S. at Rocca, the rest to 5 C.C.S. at Vasto. 2 (Cdn.) F.D.S. opened at Sant' Apollinare to receive a proportion of the minor sick. On December 29, 5 (Cdn.) Fd. Amb. was at last able to establish its A.D.S. in Ortona itself.

In the new year further changes were made. 1 (Cdn.) F.D.S. closed at Rocca, 2 (Cdn.) F.D.S. relieved 4 (Cdn.) Fd. Amb. as parent unit to the field surgical and field transfusion units and the ambulance now dealt with minor sick, exhaustion and V.D. cases. Canadian nurses relieved the two British in the advanced surgical centre at San Vito. 5 (Cdn.) Fd. Amb. remained open in Ortona and from it evacuation was to other Canadian medical units in San Vito, to 1 C.C.S. at Rocca, to 216 Fd. Amb. now at Casalbordino or to 5 C.C.S. at Vasto. 2 (Cdn.) Lt. Fd. Amb. continued to hold minor sick. In Ortona 1 (Cdn.) F.D.S. and 9 (Cdn.) Fd. Amb. formed a mobile reserve.

On December 1, 1 Cdn.G.H. (600 beds), arriving from the United Kingdom, opened in Andria in the civil hospital and schools. 14 Cdn.G.H. (1,400), also from the United Kingdom, lost all personal equipment when the transport *Santa Elena* was bombed and sunk off Philippeville. The personnel were all rescued. The stores were on another ship. The unit opened in Caserta in the cavalry barracks on December 5 alongside U.S. 16 Evac. Hosp.

INDIAN 8TH DIVISION

The forward medical units of Indian 8th Division accompanied their respective brigades on the move forward to the Sangro, after crossing the Trigno. On November 14, 33 (Ind.) Fd. Amb. passed under command of N.Z. 2nd Division. On the 16th, Indian 8th Division H.Q., as well as the H.Qs. of 29 and 31 (Ind.) Fd. Ambs., reached Scerni where H.Q. 29 (Ind.) Fd. Amb. opened a divisional M.D.S. 20 (Ind.) Fd. Hyg. Sec. reached Scerni the following day. 31 (Ind.) Fd. Amb. remained on wheels in reserve.

For the assault upon the Sangro ridge the following medical cover was provided :

- (a) The M.D.S. established by 29 (Ind.) Fd. Amb. at Scerni acted as the divisional M.D.S. and to it 2 F.S.U. was attached.
- (b) 31 (Ind.) Fd. Amb. was in reserve on wheels.
- (c) One company of each of 29 and 31 (Ind.) Fd. Ambs. were brigaded with Ind. 21st and 17th Inf. Bdes. Each of these companies was reinforced with 36 extra S.Bs. for attachment to the battalions. 24 mules and 3 jeeps fitted with stretchers were also attached to each of these companies for the assault.
- (d) 31 (Ind.) Fd. Amb. established a car post on the river crossing with 1 medical officer, 1 N.C.O. and 12 S.Bs.

These dispositions were effected by the 24th. On the following day 31 (Ind.) Fd. Amb. moved to Paglieta, remaining in reserve. When Ind. 17th Inf. Bde. launched its attack across the Sangro on the night of November 27, it was followed by one reinforced company of 31 (Ind.) Fd. Amb. A light M.D.S. of the same medical unit also moved across the river with four ambulance cars. It was equipped with extra plasma, stretchers and blankets. The sending of this light M.D.S. was a precautionary measure taken lest communications with the southern bank of the river were cut by flood.

By first light on November 28 the first casualties arrived at the car post, being brought thereto by mules and jeeps. The evacuation of casualties proceeded smoothly, and before midday on the 28th some 120 casualties had been evacuated to the M.D.S. at Scerni. Throughout the 29th casualties reached the M.D.S. in a steady stream. On this day the bridge across the river was destroyed by shellfire and casualty traffic therefore had to be diverted to a footbridge further up the river. Ambulance cars from the A.D.S. on the south side of the river drove up the river bank and casualties brought across by S.Bs. were loaded into these and taken to the A.D.S. The bridge was repaired by 1000 hours on the 30th and ambulance cars were able to go across the river once again. Though these cars were under heavy shellfire most of the time very few casualties among field ambulance personnel were incurred.

On November 30, 33 (Ind.) Fd. Amb., with Ind. 19th Inf. Bde., rejoined Indian 8th Division.

By December 1 a total of 400 battle casualties had been admitted to the divisional M.D.S.

On the morning of December 2, 31 (Ind.) Fd. Amb. established a light M.D.S. at Mozzagrogna and the M.D.S. at Scerni continued to function as the rear M.D.S. On December 3 H.Q. 31 (Ind.) Fd. Amb. joined its light M.D.S. at Mozzagrogna together with 2 F.S.U. and opened a divisional M.D.S. in this place.

Medical cover for Ind. 19th Inf. Bde. was arranged as under :

M.D.S.	4 (N.Z.) Fd. Amb. and 33 (Ind.) Fd. Amb. conjointly at Atessa
33 (Ind.) Fd. Amb. (one coy.)	with Ind. 19th Inf. Bde.
Staging Post	One company 4 (N.Z.) Fd. Amb. and one company 33 (Ind.) Fd. Amb. conjointly at Gissi.

When, on the night of November 23/24, Ind. 19th Inf. Bde. attacked in order to protect the left flank of N.Z. 2nd Division, 33 (Ind.) Fd. Amb. established an A.D.S. near Perano and a car post on the southern bank of the Sangro. But very heavy rain made the evacuation route to the A.D.S. through a diversion near Perano impassable to motor traffic and it was therefore decided to hold all casualties at Perano itself. Sufficient medical equipment was therefore man-handled to Perano by a detachment of 20 (Ind.) Fd. Hyg. Sec. Incessant rain during the night made it necessary to hold casualties on the north bank of the river on the morning of the 23rd. Later that day some 70 were hand-carried and brought to the south bank.

Fighting continued with unabated fierceness during November 23 and 24 and the evacuation of casualties was attended by exceedingly great difficulty. The level of the river was rising, crossing points were under shellfire, but nevertheless evacuation proceeded and on the whole casualties among medical personnel were surprisingly light.

When Lanciano was captured on December 3, an A.D.S. of 29 (Ind.) Fd. Amb. moved into the town to deal with the casualties of Ind. 21st Inf. Bde. As the division moved forward, following the crossing of the Sangro, certain changes in the locations of the forward medical units of Indian 8th Division occurred, so that by December 10 they were distributed as follows :

M.D.S. 31 (Ind.) Fd. Amb., 28 F.S.U. and 26 F.T.U. attached	at Mozzagrogna.
33 (Ind.) Fd. Amb.	closed and in reserve at Lanciano.
29 " " "	closed at Scerni.
A.D.S. 29 (Ind.) Fd. Amb., one coy.,	at Frisa.
31 (Ind.) Fd. Amb. (one coy.)	brigaded with Ind. 17th Inf. Bde.

33 (Ind.) Fd. Amb. brigaded with Ind. 19th Inf. Bde.
(one coy.)

When the advance across the Moro began the following medical arrangements were made for Ind. 17th and 21st Inf. Bdes. which were participating in this operation :

- (a) Each of the R.A.Ps. of the battalions participating was reinforced by three S.B. squads, each of these being under the charge of a N.C.O. Mule transport was provided.
- (b) The A.D.S. of 31 (Ind.) Fd. Amb. was established on the north bank of the river on the axis of the divisional advance. Casualties were to be evacuated in the first instance to the A.D.S. of 29 (Ind.) Fd. Amb. at Frisa, whence they would be cleared to the M.D.S. of 31 (Ind.) Fd. Amb. at Mozzagrona.

On December 13, however, 33 (Ind.) Fd. Amb., which had moved to Lanciano, opened the divisional M.D.S., so that the M.D.S. of 31 (Ind.) Fd. Amb. at Mozzagrona was thereupon closed, its attached units moving forward to the M.D.S. at Lanciano. Casualties were very heavy and among medical personnel began to assume serious proportions. A medical officer and three O.Rs. who had gone forward from the A.D.S. of 31 (Ind.) Fd. Amb. to collect casualties were killed by shell-fire and the M.D.S. at Lanciano was bombed, 7 being killed and 22 wounded.

On December 19 the A.D.S. of 33 (Ind.) Fd. Amb. was opened in Caldari to deal with casualties from the forward area in the advance toward the Ortona-Orsogna lateral road. Casualties on their way back to the M.D.S. at Lanciano were staged at Frisa by the A.D.S. of 29 (Ind.) Fd. Amb. On December 23 this A.D.S. moved to Caldari. Between December 13 and 31 the M.D.S. at Lanciano dealt with more than 1,000 casualties. On December 23, 11 I.G.H. arrived in Taranto.

At this time the roads in the rear became quite impassable after heavy rain, and in the early part of December casualties had to be hand-carried. On December 6 the rains caused the Sangro to overflow its banks and the bridges were swept away. Casualties had to be transhipped by amphibious craft to Fossacesia. By December 10 the bridges had been rebuilt and the evacuation of casualties became easier. Evacuation was by 112 M.A.C. and 6 M.A.S. to the C.C.S. area at Vasto, where 9 (Ind.) C.C.S., 1 (N.Z.) C.C.S. and 5 C.C.S. were open. To 9 (Ind.) C.C.S. were attached 7 F.S.U., 9 F.T.U., 1 (Ind.) Mob. Surg. Unit, 24 (Ind.) Surgical Unit (E.N.T.), 25 (Ind.) Ophthal. Unit, 2 British Dental Unit and 3 (Ind.) Dental Mechan. Unit. On December 15 'the specialist trinity' (2 Mob. Ophthal Unit, 1 M.F.S.U., 4 M.N.S.U. detach.), joined 5 C.C.S. and 34 F.T.U. was attached to 9 (Ind.) C.C.S. From Vasto evacuation was by ambulance car to Termoli (Railhead) and thence by ambulance train to 14 C.G.H. in Bari or to 30 I.G.H. in Taranto. 30 I.G.H. in Taranto at this time consisted of H.Q. and two sections only.

It had but 200 beds. Two of its sections were in Rondinella, one section in Andria functioning as a detention hospital, and another was still in Barce in Cyrenaica attached to 82 B.G.H.

After the fall of Villa Grande on December 28, only Ind. 21st Inf. Bde., in so far as Indian 8th Division was concerned, was in action until the close of the year. The A.D.S. of 29 (Ind.) Fd. Amb. continued to function at Caldari. Casualties were evacuated to the M.D.S. of 33 (Ind.) Fd. Amb. at Lanciano. The A.D.S. of 33 (Ind.) Fd. Amb., which had opened in Caldari on December 19, was withdrawn to Frisa on December 29.

NEW ZEALAND 2ND DIVISION

When N.Z. 2nd Division moved up to the forward zone, N.Z. 4th Armd. Bde., with 4 (N.Z.) Fd. Amb. attached, went to San Severo on November 4. On the 13th this medical unit moved to Furci, there to establish a small M.D.S. under canvas. Here sick were received from all the divisional units and evacuated to 5 C.C.S. at Vasto. On November 15, 4 (N.Z.) Fd. Amb. opened its A.D.S. in Casalanguida and on the following day 1 (N.Z.) C.C.S. opened in San Severo. On November 19, 4 (N.Z.) Fd. Amb. proceeded to Gissi and there established a M.D.S. to serve troops fighting forward of Atessa. Since the road between Gissi and Atessa was narrow and tortuous, and since the bridges that carried it had been demolished so that very many detours had to be made, 4 (N.Z.) Fd. Amb. moved up to Atessa on November 20, taking with it the N.Z. Surgical Team and 2 F.T.U., and leaving at Gissi a detachment which took over a building vacated by 33 (Ind.) Fd. Amb. Meanwhile 5 (N.Z.) Fd. Amb. moved to Lucera on November 10 and thence to San Severo and Gissi. To this unit 102 V.D.T.C. was attached. 6 (N.Z.) Fd. Amb. remained in Taranto until November 19 when it moved to Gissi to remain in reserve.

Medical cover for both N.Z. 6th Inf. Bde. and Ind. 19th Inf. Bde. was provided conjointly by 4 (N.Z.) Fd. Amb. and 33 (Ind.) Fd. Amb. at Atessa in a damaged school building. Here all light cases were dealt with and those requiring surgery were sent on to the damaged civilian hospital building where two operating theatres had been established by 4 (N.Z.) Fd. Amb. and the attached N.Z. surgical teams.

The formation of what amounted to a forward operating centre was primarily the result of the lack of suitable buildings. Nevertheless, it was found to be a great advantage as operative treatment and nursing of the serious cases proceeded unhampered by the turmoil of a busy C.C.S. Thus abdominal cases could be nursed under good conditions in hospital beds.

Battle casualties were evacuated *via* Scerni and Cupello to Vasto to Lt. Sec. 1 (N.Z.) C.C.S. This evacuation route was for the most part

identical with the supply route of Indian 8th Division and special permission for its use by N.Z. ambulance cars was granted. This was an immense advantage as the long winding route *via* Casalanguida, Gissi and Furci would have been an intolerable ordeal to badly wounded men. Sick were evacuated through Casalanguida to 5 (N.Z.) Fd. Amb's. M.D.S. at Gissi and thence direct to Termoli.

When 4 (N.Z.) Fd. Amb. reached Atessa it took over from 'B' Coy. of 6 (N.Z.) Fd. Amb. which then moved on to form an A.D.S. for N.Z. 6th Inf. Bde.

For the crossing of the Sangro, the R.M.Os. with their staffs and equipment were to move forward on foot and so, between the R.A.Ps. and the A.D.Ss. of 5 and 6 (N.Z.) Fd. Ambs. on the lateral road on the south bank of the Sangro, there would be a swiftly flowing, icy cold river fordable only with considerable difficulty even in the most favourable places.

The general plan called for a crossing on foot in several places on a two-brigade front, the seizing of a fairly extensive bridgehead up to several miles in depth and the building, when this was secured, of two temporary bridges. Thus, if all went well, several hours must elapse before ambulance cars could collect from the R.A.Ps. It was decided that while the collection of casualties forward of the R.A.Ps. would follow the usual practice with the use of regimental S.Bs. augmented when possible by jeeps, evacuation from R.A.Ps. to A.D.S. would have to be by a combination of hand and mechanical carriage. The R.M.Os. would have to hold their casualties for rather a longer time than was customary and the A.D.Ss. would have to be prepared to deal with patients more shocked than usual owing to the longer lapse of time and the cold wet conditions.

While the infantry were crossing the Sangro toward Altino to establish the bridgehead on the north side, it would not be possible to bring ambulance cars nearer to the Sangro than the Strada Sangritada, which ran parallel to the river and about a mile from the south bank. It was along this road opposite the assault area that N.Z. 5th and 6th Inf. Bdes. assembled before the assault.

On the evening of the operation, a car post with 2 four-wheel-drive ambulance cars and 1 jeep fitted with a two-stretcher frame was established at each battalion R.A.P. on this road. Two A.D.S. stretcher squads and four other squads, recruited from the battalion 'B' echelons, were detailed to cross the river with each R.M.O. to carry back the wounded prior to and during the actual river crossing. The A.D.S. bearers were also to be prepared to carry back across the river to the car posts at any time any casualty whose chances of survival would, in the opinion of the medical officer, be endangered by an enforced wait at the R.A.P. The A.D.S. area was in full view of the German positions

and was frequently shelled. No Red Cross signs were displayed lest these should give away the positions of troops and indicate the points selected for the river crossing. At the A.D.Ss. were large quantities of blood and plasma and plentiful ambulances for evacuation to the M.D.S. of 4 (N.Z.) Fd. Amb. five miles away.

At 1930 hours on November 27 the A.D.S. stretcher-bearers proceeded to the battalion positions. Two and a half hours later they moved in pitch darkness with the infantry to cross the Sangro. The main stream was waist-deep with a swift and powerful current. Struggling with their stretchers and paralysed with cold it was only with the utmost difficulty that these men managed to get across.

When, at 0245 hours on November 28, the infantry advanced, the R.M.Os. and S.Bs. followed to establish their R.A.Ps. in any suitable farm building. The A.D.S. personnel worked with those of the R.A.P. until about 0430 hours, when the infantry was nearing its final objective. They then, in the dark, began to search for casualties left lying in the wake of the advance, including those lying in minefields. Throughout the night the engineers laboured, and a Bailey and a pontoon bridge were constructed. At 0810 hours on the 28th the latter received a direct hit and was thereafter subjected to continuous accurate shellfire which made its use impossible. There remained, however, the Bailey bridge which, having to suffice for both brigades, made the evacuation of casualties across it exceedingly difficult and tardy. However, at 1030 hours the first ambulance car made its appearance at a R.A.P. and, after a long waiting period, other ambulance cars and jeeps began to clear all three.

At the M.D.S. of 4 (N.Z.) Fd. Amb. at Atessa 131 battle casualties were admitted on the 28th, 110 of these being evacuated to the C.C.S. A surgical team from 6 (N.Z.) Fd. Amb. was temporarily attached to the C.C.S. to reinforce this unit during the rush periods. During the next two days, as the N.Z. Division extended its bridgehead, the total admissions of battle casualties amounted to 80.

On December 1, 'B' Coys. of all three N.Z. field ambulances crossed the Sangro to establish their A.D.Ss. in their respective brigade areas. A car post was established by 'A' Coy. 6 (N.Z.) Fd. Amb. on the south side of the Bailey bridge. Evacuation to R.A.Ps. and A.D.Ss. was now by Bren carrier and jeep, and from the A.D.Ss. to the car post by four-wheel-drive ambulance cars, including ten of the A.F.S. From there two-wheel-drive cars could be used on the road.

Stretcher fittings for the jeeps were made in the divisional workshops after the pattern of those designed by Indian 8th Division. These stretcher-bearing jeeps in use compared very favourably indeed with most types of ambulances, the only difference being that the patients were exposed to the weather. This fault was later rectified, however, by the erection of a canvas canopy. Because the vehicle had a four-wheel

drive, was fast, manoeuvrable and capable of operating in all conditions in almost any kind of country, the jeep ambulance proved itself to be one of the most valuable of all innovations.

It was decided to bring two N.Z.A.N.S. sisters from 1 (N.Z.) Mob. C.C.S. forward to Atessa to assist in the nursing of the serious abdominal cases whose condition was aggravated by the development of post-operative pneumonia and for whom the highest possible standard of nursing was necessary. These sisters took up their duties in the M.D.S. of 4 (N.Z.) Fd. Amb. in the civil hospital on December 1. This was the first time members of the Nursing Service had worked so far forward in a battle area. Their presence added greatly to the efficiency of this M.D.S.

On December 2, 'B' Coy. of 6 (N.Z.) Fd. Amb. moved to Castelfrentano alongside the R.A.Ps. of N.Z. 24th and 25th battalions. This A.D.S. of 'B' Coy. 6 (N.Z.) Fd. Amb. admitted 61 cases on December 3 and evacuated them to the staging post south of the Sangro.

A daylight attack on Orsogna was planned for the afternoon of December 7. During this day the A.D.S. of 5 (N.Z.) Fd. Amb. therefore moved into Castelfrentano alongside the A.D.S. of 'B' Coy. 6 (N.Z.) Fd. Amb. This unsuccessful attack on Orsogna resulted in more casualties than did the actual crossing of the Sangro itself, and during the 7th and 8th the M.D.S. of 4 (N.Z.) Fd. Amb. at Atessa was working to full operative capacity. A surgical team from 1st Airborne Division (127 Para. Fd. Amb.) and another one from 5 (N.Z.) Fd. Amb. were sent up to join this M.D.S. in order to relieve the pressure.

When 6 (N.Z.) Fd. Amb. moved forward to Castelfrentano on December 14 and established its M.D.S. in a schoolhouse, the surgical team of 1 N.Z.G.H., 2 (N.Z.) F.T.U. and the surgical team from 127 Para. Fd. Amb. were transferred from 4 (N.Z.) Fd. Amb. to this unit. The nursing sisters did not accompany it, but a special male nursing team of 1 N.C.O. and 2 orderlies was sent forward from 1 (N.Z.) Mob. C.C.S.

For the attack across the Orsogna-Ortona road on December 15, 'B' Coy. 5 (N.Z.) Fd. Amb. left Castelfrentano to establish a resuscitation post on the Sfasciata ridge. There was no complete A.D.S. forward of the M.D.S. and most casualties went direct from the R.A.Ps. to the M.D.S., though some passed through this resuscitation centre. Casualties admitted to 6 (N.Z.) Fd. Amb. M.D.S. on December 15 numbered 172 and on the 16th, 115.

Medical arrangements for the final attack on the night of December 23/24 remained unchanged. The M.D.S. of 6 (N.Z.) Fd. Amb. on the 24th dealt with 152 casualties and during this rush period three surgical teams worked continuously at this M.D.S. Evacuation from the M.D.S. was by road to 1 (N.Z.) Mob. C.C.S. at Vasto, forty-five miles away. The heavy section had joined the light section of this C.C.S. at Vasto on December 10.

The extremely wet weather and the most difficult country necessitated the return to the employment of large numbers of stretcher-bearing squads for which there had not been any great demand during the operations in the Western Desert. It was found that at least six S.Bs. were required for each stretcher. It was also found that many more blankets and stretchers were required than under the standard conditions. Without the service of the stretcher-carrying jeeps and the four-wheel-drive ambulance cars the time of the evacuation to the M.D.S. would have been increased threefold. In the static warfare that continued into January 1944, the position of the medical units continued very much the same save that on December 25, when N.Z. 6th Inf. Bde. relieved N.Z. 5th Inf. Bde. in the sector east of Orsogna, part of the A.D.S. of 6 (N.Z.) Fd. Amb. moved forward to establish a car post within a thousand yards of the battalion R.A.Ps., while the remainder of the A.D.S. took over from the A.D.S. of 5 (N.Z.) Fd. Amb. back at Sfasciata ridge. When N.Z. 5th Bde. relieved N.Z. 6th Bde. in the line on January 3, the A.D.S. of 5 (N.Z.) Fd. Amb. again took over from the A.D.S. of 6 (N.Z.) Fd. Amb. At Castelfrentano 5 (N.Z.) Fd. Amb. relieved 6 (N.Z.) Fd. Amb. on January 7.

The major factors that affected the work of the medical services during the Sangro and Orsogna battles were the roads and the weather. These decided the extent of surgical treatment to be given in forward areas, the type of transport required, the location of A.D.Ss., M.D.Ss. and C.C.Ss. and the accommodation required for each.

From the medical units great elasticity was demanded. The A.D.Ss. had to be located well forward in a building of some kind, usually the lower rooms, with large fireplaces, of a house. In most instances one section of a field ambulance company was required for an A.D.S. The rest of the company was located further back to act as a car and resuscitation post and to provide S.Bs. for evacuation from R.A.Ps.

The equipment of the A.D.S. was taken forward by S.Bs., jeeps and ambulance cars or mules, according to circumstances. It consisted of full resuscitation equipment with blood, wet and dry plasma, instruments, steriliser, dressings, splints, medical comforts, 40 stretchers, 100 blankets and 20 hot-water bottles. Replenishment was from 7 Adv. Depot Med. Stores at Vasto.

In the case of N.Z. 4th Armd. Bde. the companies of 4 (N.Z.) Fd. Amb. were organised in half-company sections.

For the M.D.S. the practice was to have two field ambulances open in buildings, one forward to sort all cases and treat battle casualties, one in the rear to act as a reception station for sick and such casualties as occurred in its vicinity. As the fighting moved on, the rear field ambulance leap-frogged over the forward one, which then became the reception station in its turn.

The forward M.D.S. consisted of two companies of the field ambulance reinforced by the surgical team from 1 N.Z.G.H., 2 (N.Z.) F.T.U., two relief surgical teams from the third field ambulance (in reserve) and, if necessary, also from the rear M.D.S., relief transfusion teams from the other field ambulances and one section of the mobile dental unit. No limit was put to the surgical work carried out by this forward M.D.S.; it was left to the officer commanding to fix his own limit according to circumstance. The rear M.D.S. held such as were likely to be able to return to their units within eight to ten days. To deal with casualties in the rear areas a surgical team was retained at this M.D.S. It was usual for 102 (N.Z.) V.D.T.C. to be attached. The reserve field ambulance provided reliefs and reinforcements to the other two.

Since 1 (N.Z.) C.C.S. was u/c N.Z. 2nd Division, arrangements could be made whereby New Zealand patients could pass along one continuous and integrated line of evacuation. To the C.C.S. a surgical team from 3 N.Z.G.H. at Bari was attached, as was also for a period another from 8 (Br.) F.S.U.

The mobile section of 4 (N.Z.) Fd. Hyg. Sec. provided an average of 450 showers every day. It could be transported in a single truck. Had there been one for every brigade group then every man in the division could have had a bath at least once a week.

1 (N.Z.) M.D.U. was fractionated into sections, which were attached to brigades and divisional troops throughout the division. By this arrangement its value was greatly augmented.

During these winter months all these medical units had to be accommodated in buildings, usually schools for the M.D.Ss. and C.C.S. Unless they could find room for 200 patients extra attention had to be paid to evacuation facilities. The absence of glass in the windows caused difficulty and the use of blankets to cover these windows was neither satisfactory nor economical. 'Windowlite' was used whenever it could be obtained. Canvas covers were used to render damaged roofs waterproof. The penthouses of the unit vehicles were used as offices, workshops, cookhouses and dispensaries.

Heating remained a major problem; supplies of wood were plentiful in most areas and drum heaters with chimneys were built by units. The primus stove was much used, but constant wear and tear necessitated a continuous supply of spare parts and these were not always forthcoming.

INDIAN 4TH DIVISION

Indian 4th Division, in Egypt following its return from Tunisia, embarked on December 2, 1943, and reached Taranto on the 8th. It then consisted of Ind. 5th and 7th Inf. Bdes. and with it came 17 and 26 (Ind.) Fd. Ambs., 15 (Ind.) Fd. Hyg. Sec., 12 (Ind.) M.D.U., 18

M.A.S., 2 (Ind.) C.C.S. and 16 C.G.H. Ind. 11th Inf. Bde. with 32 (Ind.) Fd. Amb. arrived on January 25, 1944 to join the division.

The division moved up to Potenza. When it was decided to transfer three divisions from the Adriatic to the western sector, Indian 4th Division was called forward and passed u/c XIII Corps on January 11, 1944, relieving N.Z. 2nd Division in the Orsogna sector by the 13th. On the 20th the division was in turn relieved by the Canadians.

When Indian 4th Division moved from Potenza to take over the Orsogna sector from N.Z. 2nd Division on January 13, 17 and 26 (Ind.) Fd. Amb. and Lt. Sec. 2 (Ind.) C.C.S. accompanied the division. Hy. Sec. 2 (Ind.) C.C.S. and 16 C.G.H. remained in Potenza. On arrival in the front line the brigaded companies of the field ambulances opened A.D.Ss. in the forward area. H.Q. 17 (Ind.) Fd. Amb. opened the divisional M.D.S. at Lanciano. Lt. Sec. 2 (Ind.) C.C.S., 32 F.S.U. and 28 F.T.U. were attached to the divisional M.D.S.

Evacuation from the forward area was extremely difficult owing to the bad state of the roads and only jeep ambulances could operate in the forward area.

26 (Ind.) Fd. Amb. opened a M.D.S. at Archi to receive minor sick and wounded from the divisional M.D.S. Evacuation from the M.D.S. area was to 9 (Ind.) C.C.S. or to 5 C.C.S. at Vasto. These two C.C.Ss. were admitting cases alternately, but all Indian O.Rs. were admitted to 9 (Ind.) C.C.S. and all officers and British O.Rs. went to 5 C.C.S. Though the distance between Lanciano and Vasto was only some forty-five miles, it took about two and a half hours for the motor ambulances to complete the journey.

5TH DIVISION

At the beginning of December, 5th Division took over the commitments of Canadian 1st Division in order that the latter might prepare for the offensive in the Ortona sector. The divisional line thus became extended from Alfedena to Villa S. Maria.

158 Fd. Amb. opened its M.D.S. in Agnone to treat the sick of 15th Bde. and to evacuate battle casualties either to the M.D.S. of 141 Fd. Amb. at Isernia or to 15 C.C.S. at Campobasso. A.D.Ss. were established at Forli and Carovilli. The evacuation routes were long and difficult over some twenty miles of mountain roads and these often snowbound.

When, on December 11, 5th Division received orders to take over the Casoli-Lanciano sector, the M.D.S. of 158 Fd. Amb. at Agnone was increased to 220 beds and to it 5 F.S.U. and 4 F.T.U. were attached. 164 Fd. Amb. moved to Lanciano to open its M.D.S. and the M.D.S. of 141 Fd. Amb. closed and moved to S. Buono in reserve.

During the period of the offensive in the Arielli area, December 17, 1943-January 3, 1944, the M.D.S. of 164 Fd. Amb., with 5 F.S.U.,

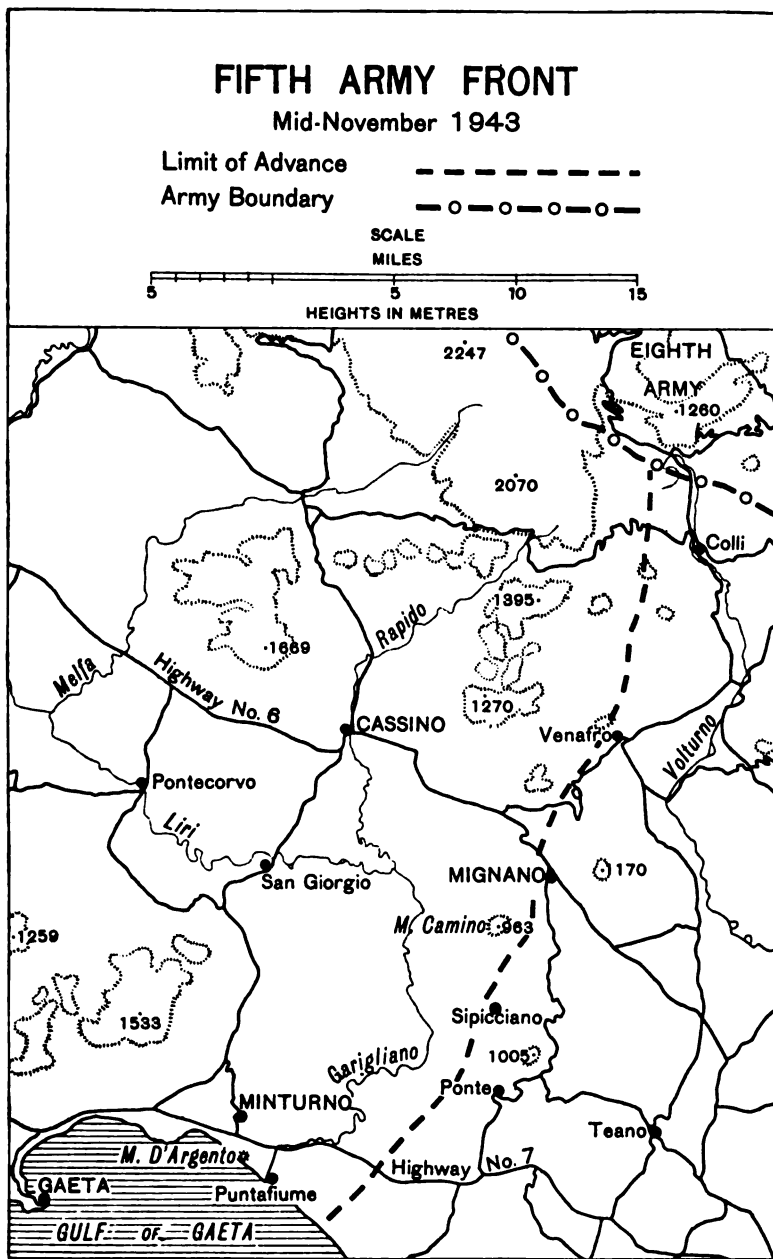


FIG. 32. U.S. Fifth Army Front. Mid-November 1943.

31 F.S.U., 4 F.T.U. and 139 M.D.U. attached, opened in Lanciano and the M.D.S. of 158 Fd. Amb. in Agnone. Evacuation from the R.A.Ps. was exceedingly difficult and either mules or 'bantams' had to be used for fording the River Moro. From December 31 to January 8 the M.D.S. of 158 Fd. Amb. was cut off by heavy snowfalls.

U.S. FIFTH ARMY

By the middle of November, 7th Armoured Division was withdrawn from the line to pass under command A.F.H.Q. Adv. Adm. Ech., its sector being taken over by 46th Division side-stepping to the left with 23rd Armd. Bde. passing from u/c 56th to 46th Division. On November 5, 46th Division, less one brigade remaining in the line to patrol down the river, was pulled out to rest, 23rd Armd. Bde. taking over its commitments.

To U.S. Fifth Army there came on October 31, Italian 1st Motorised Group. U.S. 36th Division and U.S. 1st Armoured Division were arriving and U.S. 82nd Airborne Division was about to leave. The Corps Expéditionnaire Française was expected to join U.S. Fifth Army at the beginning of December.

The problem which General Clark was called upon to solve was that of opening the Liri valley so as to make possible an armoured advance on Rome. His first task was that of capturing Camino. To X Corps, on the left of the line, was assigned the rôle of winning Camino while, in the centre, U.S. II Corps (newly reconstituted with its H.Q. staff recently arrived from Sicily and 3rd and 36th Divisions) on the right captured La Difensa and Monte Maggiore. As soon as these two heights had been taken X Corps would relieve U.S. II Corps on La Difensa and Monte Maggiore. The Americans would then lead the advance to the north. U.S. VI Corps on the right with U.S. 34th and 45th Divisions would stage a feigned crossing of the lower Garigliano. To protect 56th Division's concentration for the assault on Camino, 46th Division was to capture Calabritto the day before 56th Division's attack. Since the Ponte-Sipicciano road which 46th Division had to use was in full view of the Germans, an elaborate plan was devised with the object of persuading them that a seaborne landing in the Gulf of Gaeta was about to take place.

The renewed attack on the Winter Line was so planned that it could be divided into three phases :

1. The capture of the high ground to the south of the Mignano Gap—Monte Camino, Monte La Difensa and Monte Maggiore.
2. The capture of the high ground to the north of the gap—Monte Sammucro—and an attack along the Colli-Atina road.
3. An advance into the Liri valley.

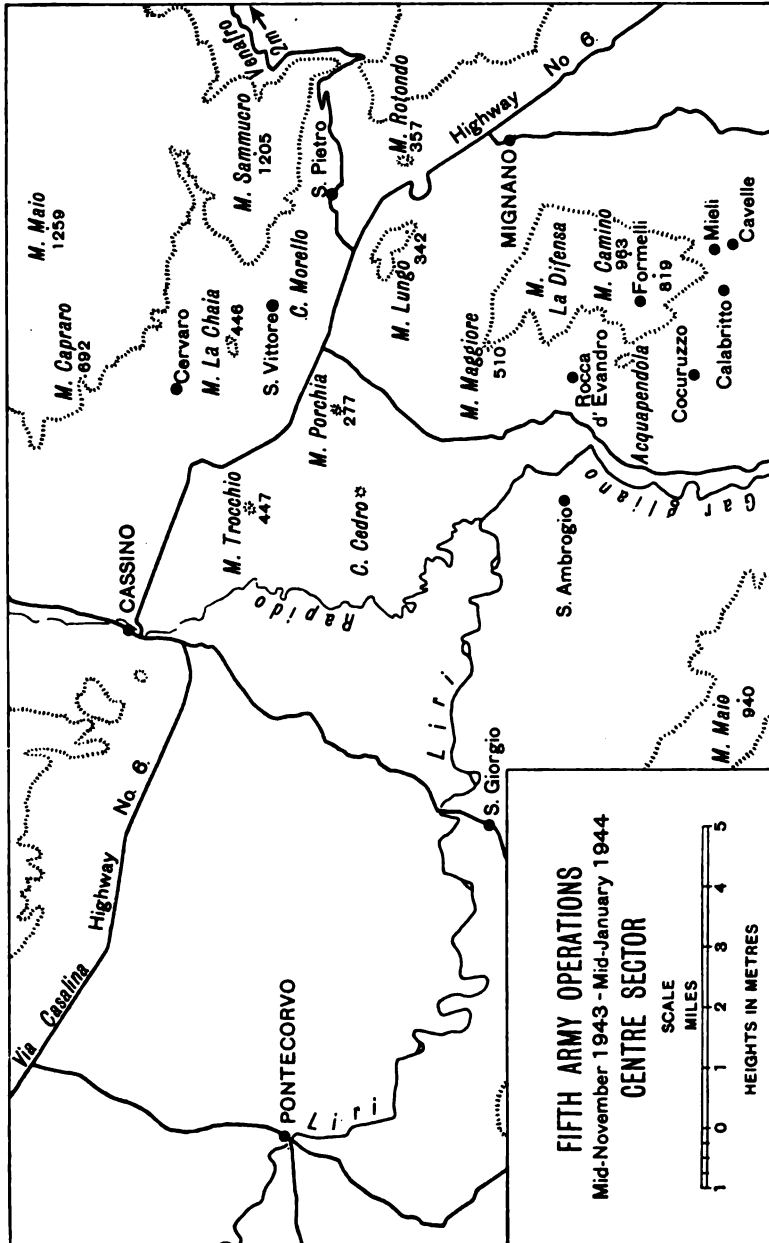


FIG. 33. U.S. Fifth Army Operations. November 1943-January 1944. Centre Sector.

The battle opened on the night of December 1 when the Foresters and Leicesters of 46th Division advanced from Cavelle against the village of Calabritto. They immediately ran into heavy fire and very little progress was made until, in the morning, 40th R.Tks. brought up sappers who opened roads through the minefields while the tanks engaged the machine-guns in Calabritto itself. Then the two battalions were able to advance to within two hundred yards of their objective. They were compelled, however, to withdraw to a position south of the village which, though not wholly satisfactory, did enable them to protect the main assault by 56th Division. This began in the afternoon of December 2. The Oxf. Bucks. and 9th R.F. of 167th Bde. led the attack on the westerly ridge of Camino and made good progress. Then, joined by 8th R.F., they reached Point 819 by 1000 hours. On the right a battalion of the Queens of 169th Bde. gained possession of the 'Razorback' ridge, except for the 'Monastery' and Point 963, by noon. 167th Bde., reinforced by the L.I.R. and the Coldstream Guards, captured a more easterly ridge that points down to Cocuruzzo.

The mule track up the cleft under the 'Razorback' was developed into a jeep track so that supplies could now reach the forward troops. 169th Bde. failed to clear the Germans from the summit of 'Monastery Hill' though the 'Monastery' itself was taken and Formelli captured. On the morning of December 5 a German counter-attack overwhelmed a company of the Queens holding the 'Monastery'. In spite of these setbacks, however, 56th Division was steadily tightening its grip on the massif and the German positions east of the Garigliano were becoming insecure. On the evening of December 5, 56th Division renewed its attack, which was successful everywhere except at Colli. The D.L.I. of 139th Bde., advancing from Formelli, captured the spur above Cocuruzzo while the Yorks. & Lancs. took the hill west of Calabritto. The Grenadiers and the Scots Guards, advancing from the ridge above Cocuruzzo, took the Acquapendola hill, the most westerly part of the massif.

On the 6th the Germans withdrew from 'Monastery Hill' and the battle for Camino had been won. On 46th Division's front German resistance collapsed. A stubborn rearguard action developed in the village of Rocca d'Evandro and the heights around it and it was not captured until December 9, when the Grenadiers entered it a little before noon.

On U.S. II Corps front the northern parts of the Camino massif had been successfully cleared, La Difensa and Monte Maggiore being taken on December 3 and 7. X Corps relieved U.S. II Corps, which now took up the advance. Facing it were Monte Sammucro with the village of San Pietro Infine on its slope overlooking the Via Casilina. U.S. 36th Division was set the task of taking Monte Sammucro and Monte Lungo.

The summit of Monte Sammucro was quickly captured and held during four days of counter-attack. Italian 1st Motorised Group attacked Monte Lungo on December 8 but was sternly repulsed, as was also an attack on San Pietro from the east by U.S. 143rd Infantry. On December 15, 143rd Infantry and 504th Parachute Infantry attacked a trio of heights west of the summit of Sammucro but were quickly checked. Later in the day 143rd R.C.T. attacked San Pietro but made no progress. But 142nd Infantry succeeded in capturing Monte Lungo from the south-west and this event led to the prompt withdrawal of the Germans to a line running south-westwards from San Vittore over Monte Porchia to Colle Cedro.

Meanwhile U.S. VI Corps was involved in a bitter and costly battle for a pair of hills near Filignano. For eight days U.S. 45th Division fought for a nameless peak (Hill 769) and U.S. 34th Division for Monte Pantano. U.S. 34th Division was relieved by 2nd Moroccan Division on December 8. A week later the offensive was resumed. Its two objectives were two hill areas, one east of Cardito, the other south-east of Casale. The former was captured by the French Colonials. U.S. 45th Division advanced without much difficulty to the western slopes of Monte Cavallo.

The advance into the Mignano Gap was blocked by the German positions about the village of San Vittore. The Americans slowly fought their way towards and into the village but it remained in German hands during the rest of the year. The Winter Line had been pierced but it still held. Before the rearmost positions—the Gustav Line—could be reached many miles of mountainous country had to be wrested from their stubborn occupants who firmly held the towering peaks that extended along the north side of Route 6, blocking the way into the Liri valley.

MEDICAL COVER (BRITISH COMPONENT)

The country was sparsely populated, buildings being poor in type and few in number. The M.D.Ss. therefore had to be tented. They were reinforced by surgical teams, by F.S.U.s. and F.T.U.s. Evacuation by motor ambulance car was difficult and slow, the roads being narrow and cratered. Indeed, the roads were almost impassable in many places to two-wheel-drive vehicles. However, rigid traffic control was enforced and ambulance cars were given priority when carrying wounded. There were many places where even the jeep could not go. R.A.P.s. and, in some places, A.D.Ss. moved without vehicles and casualties were hand-carried. During the whole of this period the medical units were seriously handicapped by deficiencies in respect of personnel. Casualties occurred among the fittest, who were operating in the forward area, and the few

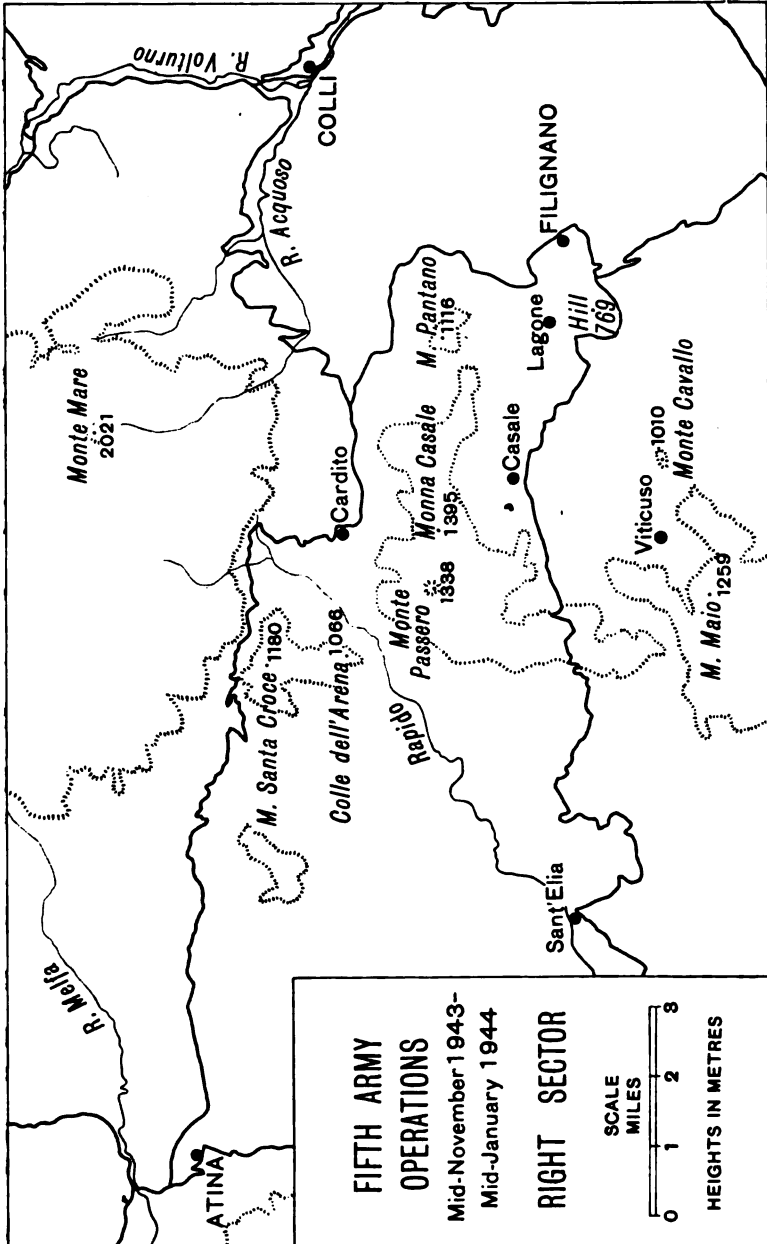


Fig. 34. U.S. Fifth Army Operations. November 1943-January 1944. Right Sector.

reinforcements that were received were physically of a very poor standard and ill-suited to the task of stretcher-bearing in the hills. Furthermore, 5 Lt. Fd. Amb. (201st Gds. Bde.) remained on the war establishment of a light field ambulance although it was serving an infantry brigade. It was therefore short of S.Bs., and when the brigade was engaged in the hills all the personnel of the M.D.S. had to be used as S.Bs. Additional assistance was obtained from 56th Division and at first A.A.P.C. personnel were employed. These proved to be unreliable, however, under shellfire and later a company of A.M.P.C. and then 150 gunners of a corps light A/A regiment were used. At one time, when operating at Monte Camino, there were, exclusive of the regimental S.Bs., 250 R.A.M.C. and 280 non-R.A.M.C. men employed on this task. The carries were all very difficult and were up to five miles in length over very rough tracks or over trackless mountainside and under intermittent enemy fire.

After 201st Gds. and 168th Bdes.' attack on the 'Razorback' ridge, it

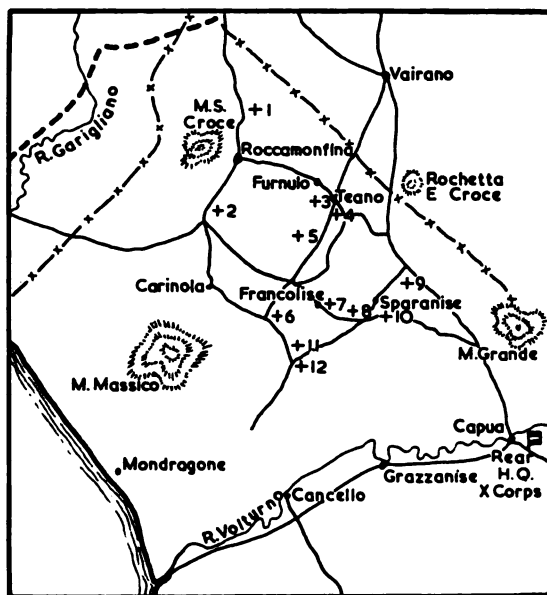


FIG. 35. The Distribution of the Medical Units of X Corps.
November 30, 1943.

- | | |
|--------------------|---------------------------------|
| 1. 140 Fd. Amb. | 8. 8 C.C.Ss. |
| 2. 184 Fd. Amb. | 9. 866 F.D.S. |
| 3. 214 Fd. Amb. | 10. 25 M.A.C. |
| 4. 167 Fd. Amb. | 11. 150 Lt. Fd. Amb. |
| 5. 5 Lt. Fd. Amb. | 12. 183 Fd. Amb. |
| 6. 185 Fd. Amb. | plus 65 & 92 B.G.Hs. at Naples. |
| 7. 14 & 21 C.C.Ss. | and 865 F.D.S. at Amalfi. |

was decided to have *travois** made by the field hygiene section's workshops and to make use of mules, these being requisitioned through A.M.G.O.T. The mules were well trained and were very useful for pack duties, but the *travois* proved useless for the reasons that the wood was too young and the tracks too plentifully strewn with large boulders.

The Medical Arrangements and Location Statement of the units of X Corps as on November 13 is given in Appendix X.

The distribution of the field ambulances of 46th Division (183, 184, 185) and of 56th Division (140, 167, 214) and of the corps field ambulance (150 Lt.) on November 30 is shown in Fig. 35.

At this time evacuation from M.D.S. to C.C.S. and thence to Base presented no serious difficulty in this sector; the main roads were good and ambulance cars sufficient in number. In the Naples Base were 65 and 92 B.G.Hs., continually being cleared to Sicily, the Delta and North Africa.

The Medical Order of Battle of the units of X Corps on December 21, 1943 are given in Appendix XI.

EIGHTH ARMY MEDICAL ARRANGEMENTS. OCTOBER-DECEMBER, 1943

As soon as the armies were firmly established on the mainland, it was intended, as has already been recounted, to form hospital bases on a large scale at Naples and Bari. But the general shortage of shipping caused considerable delay in the transshipment from North Africa of hospitals, C.C.Ss. and M.A.Cs. It became necessary to gut the H.S *Dorsetshire* and use her for this purpose.

By October 2 the hospital bedstate in 2 District was as follows:

Taranto	. 9 (Ind.) C.C.S.	200 beds
	70 B.G.H.	400
	30 I.G.H.	300
Grottaglie	. 151 Lt. Fd. Amb. (detach.)	
	Air Evac. Centre	50
Reggio	. 83 B.G.H.	200
Brindisi	. 159 Fd. Amb. (detach.)	50
		<hr/>
		1,200
		<hr/>

* *Travois*

A wheel-less conveyance for transporting sick and wounded in countries where, owing to the absence of roads, wheeled vehicles cannot be used.

It consists of a frame having two shafts and two crossbars; the front handles of the stretcher are suspended from the forward crossbar, the rear handles rest on the rear crossbar. A horse or mule is yoked between the shafts and pulls the conveyance. The rear ends of the poles, steel shod, drag on the ground and the poles make admirable springs for the litter, as any jar communicated to them is well distributed before it reaches the patient. One pole is always cut slightly shorter than the other in order that, in passing over any obstacle, the shock may be received successively by each pole and thus be reduced by about a half. The most useful *travois* is fitted with a swingletree which eases the pull on the mule and prevents lateral motion.

The *travois* is unsuitable in rocky, mountainous country or where there is much undergrowth. The poles are apt to damage telephone wire lying on the ground.

On October 5, H.Q. V Corps moved to Andria and thence to a site ten miles south of Foggia. 9 (Ind.) C.C.S. passed to D.D.M.S. 6 B.S.A., and for the time being D.D.M.S. V Corps was without any corps medical units.

Evacuation from 1st Airborne Division was to 70 B.G.H. at Taranto. On October 7, Lt. Sec. 9 (Ind.) C.C.S. opened in Andria to serve Indian 8th Division, then concentrating in this area.

The field ambulances and C.C.Ss. of XIII Corps were very hard pressed during the second week of October. The fighting at Termoli and the weather conditions were yielding large numbers of battle casualties and sick. 132 Fd. Amb. in Foggia and 15 C.C.S. in Barletta were working at full pressure. The roads were so smashed and the diversions so many that only the four-wheel-drive A.F.S. cars could be used for evacuation. From 15 C.C.S., holding 1,000 casualties on the morning of October 7, there was no evacuation for the time being for hospital ships and carriers were not available in sufficient numbers.

On October 8, 3 C.C.S. reached Italy to become V Corps C.C.S., and 84 cars of 567 A.F.S. A.C.C. from the Middle East were used to form the Army M.A.C., which was made responsible for evacuation from Bari (4 C.C.S.) to Taranto (70 B.G.H., 30 I.G.H., 14 C.G.H., 9 (Ind.) C.C.S.) whence hospital ships were plying, though with anxiety-provoking irregularity. 3 C.C.S. light section opened in Torremaggiore on October 13. Its heavy section at San Severo could not open until October 15 when Rear H.Q. XIII Corps vacated the site. 14 Lt. Fd. Amb. (4th Armd. Bde.) moved from Lucera to Torremaggiore.

78th Division was concentrated in the area of Termoli and evacuation from its field ambulances was by two platoons of 567 A.F.S. A.C.C. to 3 C.C.S. at San Severo.

About this time U.S. Fifth Army's need for hospital ships for evacuation from the Salerno beachhead was greater than that of Eighth Army. So it was that the hospital ship service for Eighth Army became insufficient and that the C.C.Ss. (7 at Foggia, 15 at Barletta, 4 at Reggio) were required to hold up to 500 patients apiece although they were equipped for only 200.

By October 10, Eighth Army medical units had been augmented. Their distribution was now as follows :

San Severo	. . .	3 C.C.S. (V Corps)
Foggia	. . .	7 C.C.S. (XIII Corps)
Barletta	. . .	15 C.C.S. „
		83 B.G.H.
Andria	. . .	9 (Ind.) C.C.S.
Bari	. . .	4 C.C.S.
		14 Fd. Amb.
Brindisi	. . .	50 B.G.H.
Taranto ('Fortbase')	. . .	151 Lt. Fd. Amb.
		60 M.A.C.

At Foggia there were also :

- 1 (Cdn.) F.D.S. dealing with Canadian patients not requiring urgent treatment.
- 132 Fd. Amb. (one coy.) (XIII Corps) holding up to 200 minor surgical and medical cases.
- 5 V.D.T.C.
- 4 Neurosurgical Unit
- 1 Maxillo-facial Unit
- 2 Ophthalmic Unit
- Two F.S.U.s.
- One F.T.U.
- XIII Corps Psychiatrist

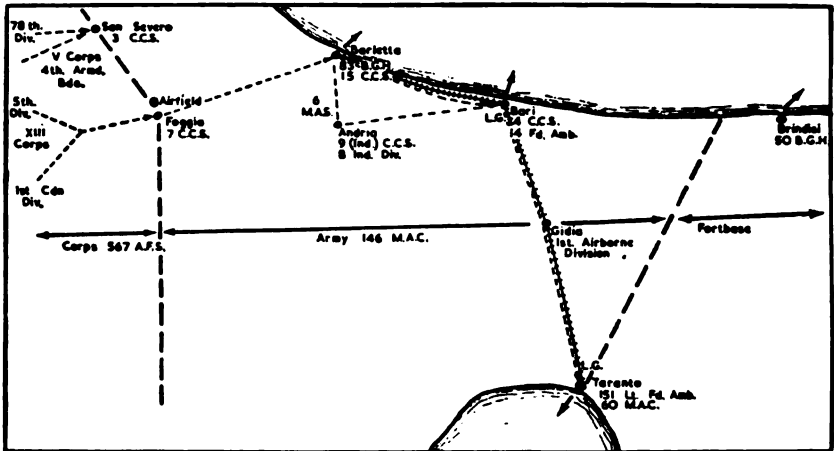


FIG. 36. The Distribution of the Medical Units of Eighth Army. October 10, 1943.

A redistribution of ambulance cars was made. 146 M.A.C. became the Army M.A.C. and to each of V and XIII Corps two platoons of 567 A.F.S. A.C.C. were assigned. To 2 District a detachment of 60 M.A.C. was attached. An ambulance train service, built out of ordinary rolling stock, began to operate between Bari and Taranto.

On October 15, 5 C.C.S. (Army) arrived to relieve 15 C.C.S. at Barletta and 15 C.C.S., with 1 F.S.U. and 35 F.T.U., moved on to Campobasso to open there on the 19th. Evacuation by road from Barletta then became a responsibility of 2 District. At Campobasso too were 9 (Cdn.) Fd. Amb. with 2 (Cdn.) F.D.S. and the Canadian F.S.U.s. and F.T.U. attached.

On October 18, V Corps medical units were distributed as follows :

- | | | |
|------------|---|--|
| Termoli | . | 2 and 4 F.S.U.s. |
| | | 11 F.T.U. with M.D.S. of 78th Division |
| San Severo | . | 3 C.C.S. |
| | | 29 F.S.U. |

Andria . . . 9 (Ind.) C.C.S., Hy. Sec.
 Torremaggiore . . 9 (Ind.) C.C.S., Lt. Sec.
 14 Lt. Fd. Amb.

Evacuation was by 567 A.F.S. A.C.C. D.D.M.S. was at Serracapriola.

Then 18 and 19 C.C.Ss. reached Italy from Tunisia. 18, u/c V Corps, was established in Termoli on October 29 and 19, u/c Army, relieved 7 C.C.S. in Foggia. 132 Fd. Amb. moved from Foggia to Volturara, there to establish a staging post.

On October 25, 2 District assumed responsibility for evacuation by road from Foggia and 1 C.C.S. arrived, to come under Army and to open at Torremaggiore in order to relieve the strain on 3 C.C.S. at San Severo. The ambulance train service was now extended to San Severo.

H.Q. 2 District ('Fortbase') now became split into a new 2 District and Advanced Administrative Echelon A.F.H.Q. (Flambo) and moved across to Naples. All administrative matters requiring reference to higher authority had to pass through this. The new 2 District, with its H.Q. at Bari, was brought into existence to control, among other things, all general hospitals on the eastern side of Allied occupied Italy which were receiving Eighth Army patients.

When Indian 8th Division moved up to the forward area, 9 (Ind.) C.C.S. moved from Andria to Larino. 4 C.C.S., being relieved by 50 B.G.H. from Brindisi, moved from Bari to Foggia on October 27.

On October 28 the distribution of XIII Corps medical units was as shown in Fig. 37.

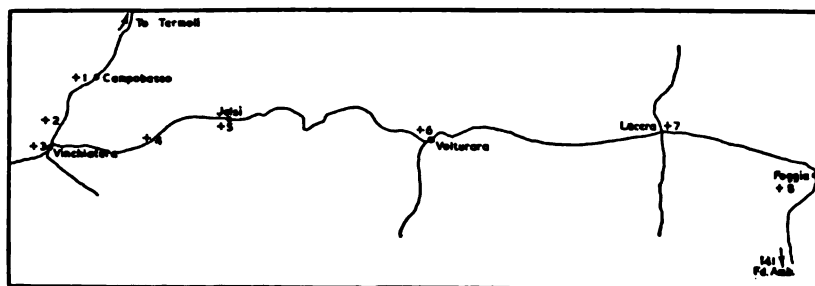


FIG. 37. The Distribution of Medical Units of XIII Corps.
 October 28, 1943.

- | | |
|-----------------------------------|--------------------------------|
| 1. D.D.M.S. XIII Corps | 2. 4 (Cdn.) Fd. Amb. On wheels |
| A.D.M.S. Canadian 1st Division | 3. 158 Fd. Amb. 5 F.S.U. |
| 15 C.C.S. 1 F.S.U. 35 F.T.U. | 4. A.D.M.S. 5th Division |
| 132 Fd. Amb. H.Q. & 'A' Coy. | 5. 2 (Cdn.) Lt. Fd. Amb. |
| 19 Fd. Hyg. Sec. | 6. 132 Fd. Amb. 'B' Coy. |
| 9 (Cdn.) Fd. Amb. 2 (Cdn.) F.D.S, | 7. 5 (Cdn.) Fd. Amb. On wheels |
| 1 & 2 (Cdn.) F.S.U.s. | 8. 7 C.C.S. 31 F.S.U. |
| 1 (Cdn.) F.T.U. | 4 F.T.U. |
| 2 (Cdn.) Fd. Hyg. Sec. | 139 M.D.U. |

The location of these units is given below :

Campobasso	.	15 C.C.S., 1 F.S.U., 35 F.T.U.
		2 (Cdn.) F.D.S., 1 & 2 (Cdn.) F.S.U.s.,
		1 (Cdn.) F.T.U., 9 (Cdn.) Fd. Amb.
		132 Fd. Amb. (H.Q. and 'A' Coy.)
		2 (Cdn.) & 19 Fd. Hyg. Secs.
(near by)		4 (Cdn.) Fd. Amb. (on wheels)
Vinchiatura	.	158 Fd. Amb., 5 F.S.U.
Ielsi	.	2 (Cdn.) Lt. Fd. Amb.
Volturara	.	132 Fd. Amb. ('B' Coy.)
Lucera	.	5 (Cdn.) Fd. Amb. (on wheels)
Foggia	.	7 C.C.S., 3 F.S.U., 4 F.T.U., 139 M.D.U.

At the end of October the distribution of V Corps medical units was as follows :

Termoli	.	18 C.C.S.
		two F.S.U.s. and one F.T.U.
Serracapriola	.	14 Lt. Fd. Amb.
Guglionesi	.	216 Fd. Amb.
Larino	.	9 (Ind.) C.C.S.
		two F.S.U.s. and one F.T.U.
Torremaggiore	.	1 C.C.S.
		30 I.S.S.

Evacuation from Indian 8th Division was by 6 M.A.S. and from 78th Division by 567 A.F.S. A.C.C.

On November 6, Lt. Sec. 9 (Ind.) C.C.S. moved to Acquaviva and with 2 F.S.U. opened an advanced surgical centre. On November 8, 5 C.C.S. was allotted to V Corps and 1 C.C.S. reverted to Army.

By November 6 the bedstate in the western sector had risen to 2,316, that in the eastern sector to 3,722. The ration strength of British troops in Italy was then 310,000, so that the percentage of beds was only 1·7. Thus it was that continuous evacuation of short-term cases to Sicily and North Africa was necessary. Malaria was causing large numbers of cases and the hospitals in Italy were continually overcrowded. The C.C.Ss. were all well forward ready for the attack upon the line of the River Trigno.

When, on November 7, the line of the Sangro was reached, Eighth Army medical units were distributed as depicted in Fig. 38. Nearest the front line were 18 C.C.S. at Termoli, 9 (Ind.) C.C.S. Hyg. Sec. at Larino, 7 C.C.S. at Casacalenda in the centre and 15 C.C.S. at Campobasso. Behind these on the railway (under repair in front of San Severo) were 1 and 3 C.C.Ss. at San Severo and 4, 5 and 19 C.C.Ss. at Foggia. The rest camp at Manfredonia, which had been run by 132 Fd. Amb. for XIII Corps, was taken over by 151 Lt. Fd. Amb. (Army).

At this time evacuation from the forward medical units was made

most difficult by the all-pervading mud. Cars with a two-wheel drive were useless, and even the four-wheel-drive cars of the A.F.S. were frequently immobilised by it. It became necessary to borrow a number of jeeps with stretcher gear from 1st Airborne Division for forward work. Mules were also used. But around Isernia a four-mile hand-carry was the only possible method that could be used for about a week.

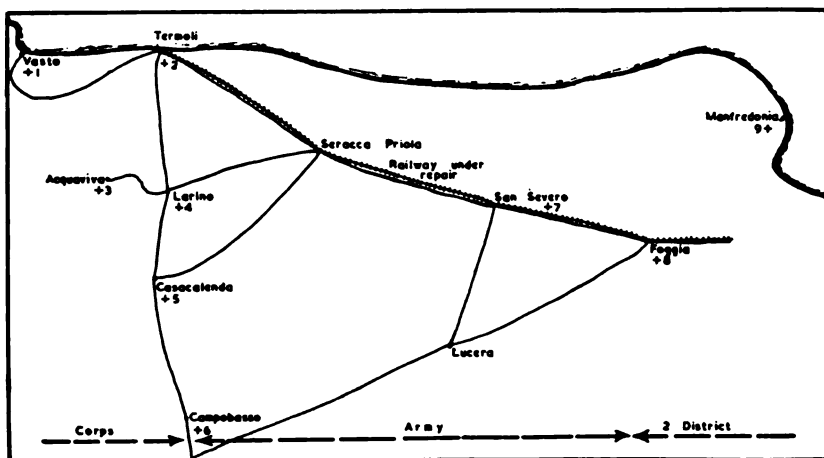


FIG. 38. Eighth Army Medical Units. November 7, 1943.

- | | |
|-----------------------------|--------------------------------|
| 1. 141 Fd. Amb. | 6. 15 C.C.S. |
| 2. 18 C.C.S. | 7. 1 and 3 C.C.Ss. |
| 567 A.F.S. | 8. 4, 5 and 19 C.C.Ss. |
| 45 M.A.C. (detachment) | 14 Fd. Amb. |
| 3. 9 (Ind.) C.C.S. Lt. Sec. | 5 V.D.T.C. |
| 4. 9 (Ind.) C.C.S. Hy. Sec. | 146 M.A.C. |
| 5. 7 C.C.S. | 9. Rest Camp. 151 Lt. Fd. Amb. |

The ambulance train service was working smoothly at this time, but in order to save ambulance car transport over a very bad stretch of road beyond San Severo, a hospital carrier was called to Termoli on November 6. When leaving harbour the ship was deliberately bombed but escaped damage.

On November 14, 112 M.A.C. arrived from Tunisia and became an Army M.A.C. clearing from Termoli to San Severo. The cars of 146 M.A.C. were switched to the Campobasso–San Severo route. On the 19th, 19 C.C.S. moved from Foggia to Termoli.

At this time Italian civilian casualties, commonly caused by mines and booby-traps, were very numerous, so numerous as to require XIII Corps to make special arrangements for them. 132 Fd. Amb. was placed in charge of the Italian civil hospital in Termoli. Large-scale evacuation from Termoli to Bari was organised.

On November 15, 5 C.C.S. moved to Vasto where it was joined next day by 9 (Ind.) C.C.S. from Larino and Acquaviva with 1 (Ind.) Mob. Surg. Team, 7 F.S.U., 35 F.S.U., 34 F.T.U. and two M.D.Us. attached. Arrangements were being made to hand over the Foggia airfields to the U.S.A.A.F. and so it became necessary to move 4 C.C.S. from Foggia and 3 C.C.S. from San Severo to other sites. 4 C.C.S. closed and moved to the site previously occupied by 9 (Ind.) C.C.S. at Larino. The movement of 3 C.C.S. was postponed until the railway had been repaired as far forward as Termoli.

On November 18, 1 (N.Z.) C.C.S. moved from the base to San Severo and on the 22nd its light section opened in Vasto, its heavy section remaining in San Severo to stage casualties on their way back to 3 N.Z.G.H. at Bari, 150 miles away.

The distribution of XIII Corps medical units as on November 24 is shown in Fig. 39.

On November 25, 88 M.A.C. arrived from North Africa to become an Army M.A.C. and to be employed in clearing the C.C.S. at Termoli. 112 M.A.C. then passed from Army to V Corps and 146 M.A.C. to XIII Corps.

The distribution of V Corps medical units as on November 30 was as follows :

Fossacesia	. one F.S.U. and one F.T.U. with M.D.S. of 78th Division
Mozzagroga	. one F.S.U. with M.D.S. of Indian 8th Division
Monteodorisio	. 216 Fd. Amb. coy. (Corps Exhaustion Centre)
Vasto	. 5 C.C.S. three F.S.Us. and one F.T.U. 9 (Ind.) C.C.S. three F.S.Us. and one F.T.U.
Cupello	. 216 Fd. Amb. (less one coy.) (receiving sick)

By the end of November the ration strength had risen to 462,000 and the percentage of general hospital beds was only 1·8.

The Medical Order of Battle and Location Statement of Eighth Army is given in Appendix XII.

In the early part of the invasion the insufficiency of hospital beds was due to the shortage of shipping. Medical units were either cut out from or else moved down the priority lists in favour of combatant units. Personnel, G.1098 and I.1248 often were transported at different times and in different convoys so that medical units remained incomplete and incapable of functioning. Later, however, the insufficiency was due to a different cause; there was a shortage of suitable buildings and of R.E. work to render them fit for occupation by hospitals.

As an outcome of this experience D.D.M.S. Adv. Adm. Ech., A.F.H.Q., recommended that :

- (1) a definite phasing-in plan should be devised and adhered to;
- (2) general hospitals should be on a 3 per cent. of the force basis;
- (3) each division should be accompanied by a 600-bed general hospital;
- (4) hospitals should be organised on a 'block' system so that they could be moved in sections, each complete with personnel and equipment and capable of opening in twenty-four hours;
- (5) convalescent depots be phased-in on a 1½ per cent. basis;
- (6) each 2,000 hospital beds should be followed up by a division of a convalescent depot (1,000);
- (7) hospital ships, though controlled by the Navy, should be regarded as an integral part of the medical services and as such should be at the disposal of D.M.S. or D.D.M.S. concerned whenever operationally possible;

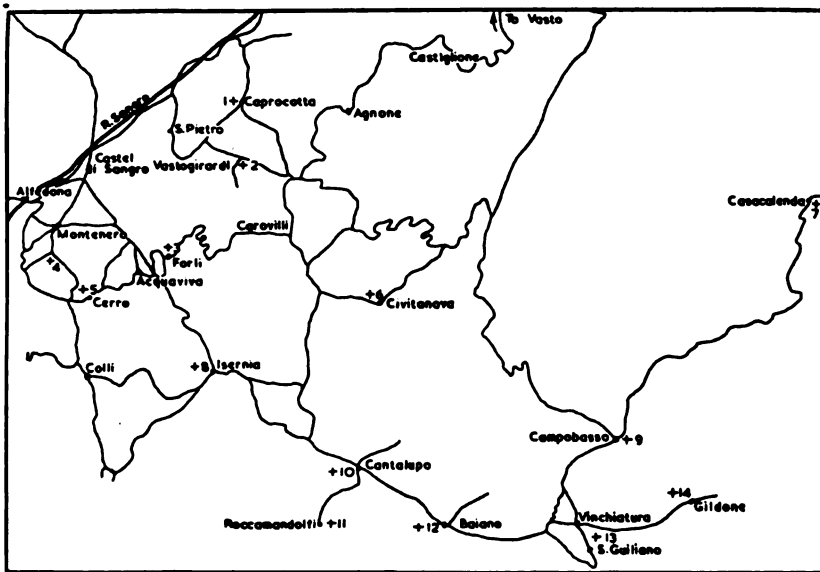


FIG. 39. The Distribution of the Medical Units of XIII Corps. November 24 1943.

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Canadian A.D.S. 2. Canadian A.D.S. 3. A.D.M.S. 5th Division 4. 5th Division A.D.S. 5. 5th Division A.D.S. 6. 4 (Cdn.) Fd. Amb. 7. 7 C.C.S. 8. 141 Fd. Amb. 5 F.S.U.
31 F.S.U. 4 F.T.U. 9. D.D.M.S. XIII Corps
15 C.C.S. 1 F.S.U.
35 F.T.U. 130 M.D.U.
19 Fd. Hyg. Sec. | <ol style="list-style-type: none"> A.D.M.S. Canadian Division 9 (Cdn.) Fd. Amb. 2 (Cdn.) F.D.S.
1 & 2 (Cdn.) F.S.U.s.
1 (Cdn.) F.T.U.
2 (Cdn.) Fd. Hyg. Sec. 10. 24 Fd. Hyg. Sec. 11. 158 Fd. Amb. 12. 164 Fd. Amb. 139 M.D.U. 13. 2 (Cdn.) Lt. Fd. Amb. Section 14. 132 Fd. Amb. H.Q.
plus
132 Fd. Amb. at Volturara
5 (Cdn.) Fd. Amb. at Lucera |
|---|--|

(8) hospital ships should, whenever possible, be based as near as possible to the theatre of operations so that they might be called forward at twenty-four to forty-eight hours' notice.

The location of Eighth Army medical units on November 30 is shown in Fig. 40. The distribution of hospitals and bedstates on that date is given below :

<i>East</i>	<i>Unit</i>	<i>Location</i>	<i>Beds equipped</i>	<i>Beds occupied</i>	<i>Beds vacant</i>
151 Sub-area	50 B.G.H.	Barletta	238	237	1
	54 "	Palese (near Bari)	337	179	158
	83 "	Barletta	300	172	128
	30 I.G.H. (det.)	Andria	100	25	75
	76 B.G.H.	Trani	330	227	103
103 Sub-area	98 B.G.H.	Bari	1,000	825	175
	14 C.G.H.	Bari	310	310	0
	3 N.Z.G.H.	Bari	483	379	104
71 Sub-area	84 B.G.H.	Brindisi	328	262	66
	West African Section	Brindisi	78	69	9
R.M. Sub-area Taranto	70 B.G.H.	Taranto	800	800	0
	30 I.G.H.	Taranto	200	78	122
	30 I.G.H. (det.)	Taranto	150	14	136
			<hr/> 4,654	<hr/> 3,577	<hr/> 1,077
<i>West</i>					
57 Area	92 B.G.H.	Naples	1,500	1,321	179
	65 B.G.H.	Naples	1,090	890	200
94 Sub-area	59 B.G.H.	Mercatello	370	351	19
	West African Section		30	10	20
			<hr/> 2,990	<hr/> 2,572	<hr/> 418
plus 220 Fd. Amb.	94 Sub-area		170	67	103
159 " "	R.M. Sub- area		200	200	0
Airborne Fd. Amb.	1st Airborne Division		125	98	27
			<hr/> 495	<hr/> 365	<hr/> 130
Grand Total			<hr/> 8,139	<hr/> 6,514	<hr/> 1,625

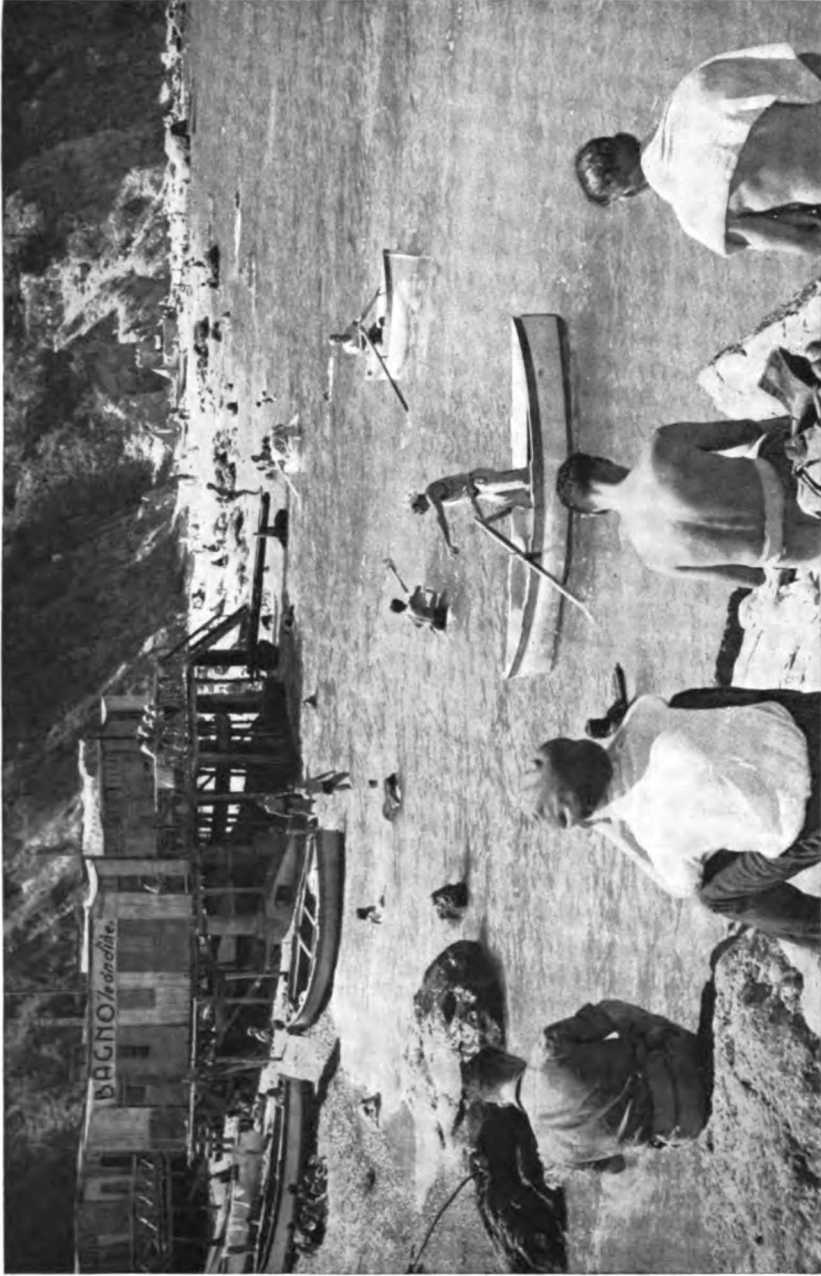


PLATE XI. A day on Capri for convalescing patients of 92 British General Hospital, Naples.

[Imperial War Museum]



PLATE XII. At a Convalescent Depot.

[Imperial War Museum



PLATE XIII. Mobile Ophthalmic Unit.

[Imperial War Museum



PLATE XIV. A ward in a General Hospital at Caserta.

[Imperial War Museum]



PLATE XV. V.A.Ds. in a General Hospital.

[Imperial War Museum]



PLATE XVI. The Physiotherapy Section of a General Hospital.

[Imperial War Museum]



PLATE XVII. D.U.K.Ws. used for the evacuation of casualties across the Sangro.

[Imperial War Museum]

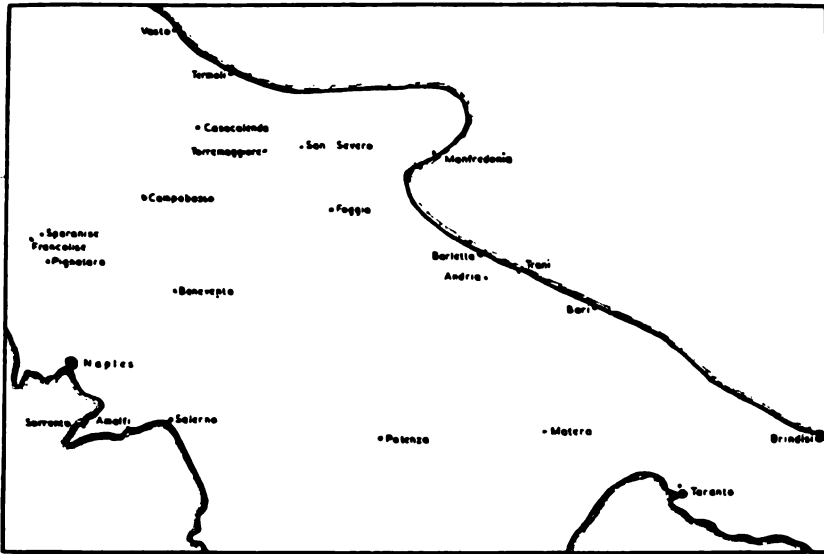


FIG. 40. Locations of Eighth Army Medical Units. November 30.

There were in the Naples area, in addition to 65 and 92 B.G.Hs. :

- 7 Con. Depot (2,000 beds) at Sorrento
- 9 Fd. Mal. Lab., one sec.
- 9 Fd. Dental Lab.
- 62 Fd. Hyg. Sec.
- 1 A.M.C.U.
- 10 Adv. Depot Med. Stores
- 6 Port Detachment R.A.M.C.

71 B.G.H. (600), 76 B.G.H. (600) and 84 B.G.H. (200) were expected shortly.

The distribution of Eighth Army medical units in the early phases of the crossing of the River Sangro is shown in Fig. 41.

1 Cdn.G.H. opened in Andria in the civil hospital and schools on December 1. On the 4th, 86 Area moved from Foggia to Guglionesi to administer the new railhead at Termoli, but on the following day H.Q. 60 Sub-area moved to Termoli to accept responsibility for that area under 86 Area, which was to move forward to Vasto. On the 5th, 14 Cdn.G.H. opened in the cavalry barracks at Caserta. On December 6, 1 C.C.S. at Torremaggiore closed, moved to Pollutri and remained there closed and in V Corps reserve.

It was at this time that heavy rain caused the Sangro to overflow its banks. All the bridges across the river were swept away. Casualties had to be brought across the river by D.U.K.Ws.

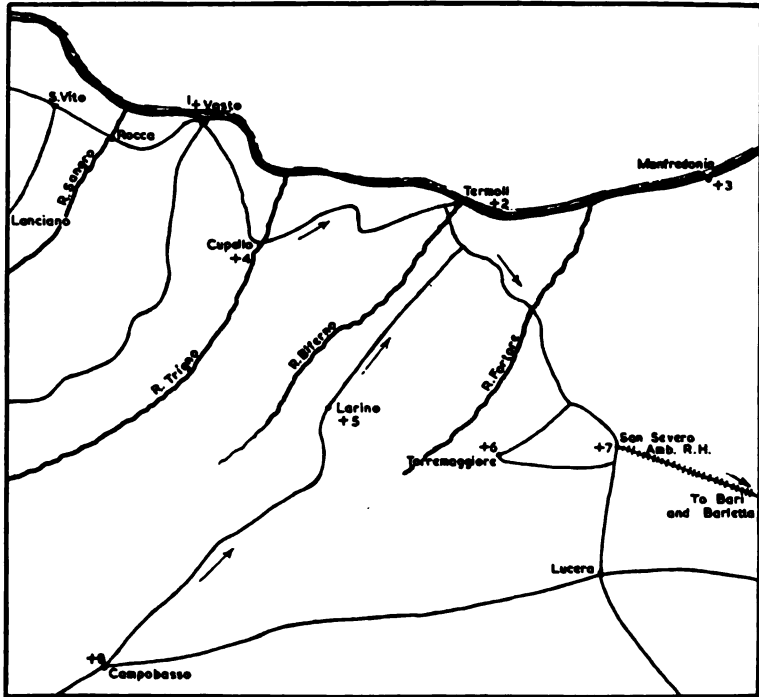


FIG. 41. Eighth Army. The Crossing of the Sangro. Medical Cover.

- | | |
|-------------------------------|-------------------------------|
| 1. 5 C.C.S. 9 (Ind.) C.C.S. | 151 M.D.U., 88 M.A.C. |
| 1 (N.Z.) C.C.S. Lt. Sec. | 567 A.F.S. A.C.C. H.Q. |
| 45 M.A.C., 7 Adv. Depot Med. | 3. 151 Lt. Fd. Amb. |
| Stores, 3 Mob. Hyg. Lab. | 4. 216 Fd. Amb. (V Corps) |
| 13 Fd. Hyg. Sec. | 5. 4 C.C.S. |
| 5 Mob. Bact. Lab. | 6. 3 C.C.S. 1 C.C.S. (closed) |
| 2. 18 & 19 C.C.Ss. | 7. 1 (N.Z.) C.C.S. Hy. Sec. |
| 1 Mob. Bact. Lab., 4 M.N.S.U. | 8. 5 C.C.S. |
| detach., 2 Mob. Ophthal. Unit | 7 C.C.S. |
| 1 M.F.S.U. detach. | 146 M.A.C. |

On December 10, Medical H.Q. moved from Lucera to Vasto. 3 (Cdn.) F.D.S. was sent to Avellino to function as a small hospital to serve Canadian units in that area. To it were attached 4 (Cdn.) F.S.U. and 1 (Cdn.) Mob. Hyg. Lab. Later 4 (Cdn.) C.C.S. moved across from Sicily to take the place of 1 C.C.S. at Torremaggiore.

At the time of the change of the plan of attack, according to which both V and XIII Corps were to be employed in the coastal sector, the C.C.Ss. were distributed as follows :

Vasto	.	.	.	5 C.C.S.
				9 (Ind.) C.C.S.
				1 (N.Z.) C.C.S.

Campobasso	.	.	7 C.C.S.
			15 C.C.S.
Termoli	.	.	18 C.C.S.
			19 C.C.S.
Larino	.	.	4 C.C.S.

Evacuation from Campobasso and Vasto was by ambulance car to Termoli and thence by ambulance train to 2 District. 4 C.C.S. was dealing with short-term sick.

On December 13, 3 C.C.S. and 7 and 35 F.S.U.s. left Eighth Army to return to the United Kingdom and 9 F.T.U. came under Army to serve as the Army blood bank in place of 7 F.T.U.

The civilian hospitals in Lanciano and Vasto were now full with civilian casualties from the forward areas. Evacuation to 2 District was organised. Cars of 88 M.A.C. conveyed these patients to Termoli whence they entrained for Bari. At this time A.M.G. had not the means of dealing with this problem.

On the 14th two of the four ambulance trains on the Termoli-Bari run were withdrawn. One was required for Naples L. of C., another had been badly damaged. So, instead of two ambulance trains a day there was now only one daily or, more often, only two every three days. Gross overcrowding of 18 and 19 C.C.Ss. at Termoli inevitably resulted.

On December 15, 35 F.T.U. moved from 19 C.C.S. to 9 (Ind.) C.C.S. and 'the specialist trinity' moved from 19 C.C.S. at Termoli to 5 C.C.S. at Vasto.

The ambulance train service to Termoli was still unsatisfactory. Difficulty was caused by the drain upon the C.C.Ss. in respect of blankets and pyjamas, replacement from the ambulance trains falling well below the one for one plus 5 per cent. ratio. By the 17th there were 860 cases in the C.C.Ss. and the one train that arrived could take away only 150. Movements failed to provide a second train. A request for a hospital carrier was made. It became necessary therefore to arrange for evacuation by road from Termoli to Barletta and to require all forward C.C.Ss. to hold all cases until the ambulance train service had become augmented. On the 17th, 4 (Cdn.) C.C.S. reached Torremaggiore and took over the equipment of 3 C.C.S. 50 B.G.H., from 2 District, opened in Termoli to serve as a reception unit for staging casualties arriving from the C.C.S. group at Vasto on their way back to the base.

By the 18th the situation was easier. Fewer casualties were reaching Termoli. The number awaiting evacuation fell to 520. Two ambulance trains arrived.

On December 18, 3 Adv. Depot Med. Stores moved from 2 District to Campobasso and 18 and 48 I.S.Ss. reached Vasto. D.D.M.S. V Corps moved Lt. Sec. 1 C.C.S. to Rocca. On the 21st two ambulance

The necessity for four-wheel-drive vehicles in divisional ambulance cars and the M.A.Cs. was represented through staff channels as an essential for forward evacuation of casualties.

(2) *Lighting Sets for Medical Units*

Constant trouble was experienced with the 1-kw. lighting sets supplied to field ambulances, F.S.U.s. and C.C.Ss. It was recommended that 4-kw. sets be substituted for 1-kw. sets and that, as each F.S.U. was attached to a parent unit, it should not be obliged to carry an independent lighting set. Such standardisation of the lighting would ensure greater economy and reliability.

(3) *Use of Jeeps and Field Ambulances*

The 1942 Field Ambulance W.E. II/198/1 supplied a motor cycle for each of the officers in the companies of the unit—a total of six. It was shown that it was impossible for the section officer to perform his duties on a motor cycle, and it was suggested that an alteration in the W.E. should be made to substitute jeeps for 7 of these motor cycles and that, in addition, the jeeps should be fitted with two-stretcher carrier frames. This would have the double effect of permitting the section officers to carry out their duties and, at the same time, would make an additional source of stretcher-carrying vehicles in field ambulances.

(4) *Combined Neurosurgical, Maxillo-Facial and Ophthalmic Teams*

A combination of neurosurgical, ophthalmic and maxillo-facial teams was employed at 5 C.C.S., Vasto. This combination ('the specialist trinity') performed very valuable work and it was open to consideration whether a combined surgical unit of this nature should not be a standard unit working in conjunction with a C.C.S. Many cases of injuries above the neck require the skilled attention of all three branches of surgery and dentistry; this attention should be given at one sitting. These three teams worked in one large theatre.

(5) *Forward Surgery*

On more than one occasion it was necessary to point out, particularly to formation commanders, the inadvisability of placing advanced surgical centres too near the fighting zone. There was ample evidence to show that though the surgery might be of a very high order, the after-effects of being retained within sound and range of shellfire had a very deleterious effect upon the patient.

(6) *Advanced Surgical Centres*

The lack of F.D.Ss.* available for the formation of advanced surgical centres was greatly felt in Eighth Army. In almost every instance these centres had to be formed with divisional field ambulances.

* There were F.D.Ss. with Canadian 1st Division, serving in Eighth Army and with X Corps serving with U.S. Fifth Army.

(7) *Wireless Communication*

78th Division was equipped with a wireless medical net which in battle proved invaluable. It was strongly contended that such a net should be standard in all formations. Army was able to communicate directly with corps, with great advantage to both formations.

(8) *Field Ambulances with Army Troops*

The very large numbers of Army troops—gunners, engineers, road maintenance units, etc., make it essential for a unit such as a field ambulance or two F.D.Ss. to be on the permanent order of battle of an army in the field. Eighth Army field ambulance was always fully extended on a variety of functions.

(9) *Attachment of Special Investigational Team to Field Units*

A number of special teams sent out from the War Office were attached to mobile bacteriological laboratories, etc. The army in the field has as much work for these laboratories as they can perform.

It was considered essential that if these investigational teams were to be sent out they should come fully equipped in every sense—in transport, personnel and laboratories—as the legitimate work of the mobile laboratories on the order of battle of the Army was seriously handicapped by their having to hand over the whole or part of the laboratory or transport to these visiting teams which it was impossible as a rule to equip from local sources.

(10) *Working Parties for C.C.Ss.*

The W.E. of personnel for C.C.Ss. was only sufficient to permit the unit to perform its purely medical function. In every case it was necessary to attach working parties of pioneers or Italian labour to the C.C.Ss. to enable the unit to provide stretcher-bearers for loading and unloading ambulance cars, etc. These labour parties were a permanent commitment.

(11) *The Relationship of the Military Authorities and the Civilian Population*

As the Army advanced and occupied one town after another, the medical services found that they had perforce to deal with large numbers of civilian sick and wounded. This became a heavy liability demanding very close liaison between the A.M.G. authorities and the Medical Services. The A.M.G. organisation was rarely capable of rendering full assistance until, at times, several weeks had elapsed, owing almost entirely to lack of a sufficient number of medical officers on their staff and of transport for civilian casualties.

(12) *Medical Officers with Large Units*

Many large bodies of troops such as corps or Army R.Es. were without medical officers on their W.E. The medical care of these troops

can be arranged by instructing companies to report to the nearest medical unit, but many of the other functions of a R.M.O. cannot be adequately performed by casual attachment to a medical unit.

C.R.E. Army troops produced proof that no less than twelve different medical officers had looked after the troops under his command in the space of three months. There was no continuity of treatment, check of inoculations, etc. In his opinion it was impossible to provide proper attention without a medical officer on the W.E. of the unit, which numbered some 2,500.

In practice a medical officer had to be removed from a medical unit for semi-permanent attachment to the Army R.Es.

APPENDIX IV

XIII CORPS. ORDER OF BATTLE. SEPTEMBER 3, 1943 (Abbreviated)

H.Q. XIII Corps

Canadian 1st Division	6th A.G.R.A.
Canadian 1st, 2nd, 3rd Inf. Bdes.	2nd A.A. Bde.
5th Division	32nd, 33rd, 34th Beach Bricks
13th, 15th, 17th Ind. Bdes.	in support
231st Inf. Bde. Gp.	5th A.G.R.A.
S.R. Sqn. S.A.S. Regt.	XXX Corps artillery
3rd and 40th Commandos	

(H.Q. XXX Corps with 50th and 51st Divisions left Eighth Army and Sicily for the United Kingdom during October and November, 1943, to prepare for Operation 'Overlord'. With 50th Division went 149 and 186 Fd. Ambs. and 22 Fd. Hyg. Sec. 200 Fd. Amb. stayed behind with 231st Inf. Bde. With 51st Division went 174, 175 and 176 Fd. Ambs. and 29 Fd. Hyg. Sec.)

X CORPS u/c. U.S. FIFTH ARMY. ORDER OF BATTLE AS AT OCTOBER 30

7th Armoured Division

11th Hussars
22nd Armd. Bde.
1st R.Tks.
5th R.Tks.
4th Sharpshooters
1st R.B.
131st Lorried Inf. Bde.
1/5th Queens
1/6th Queens
1/7th Queens
'C' Coy. 1st Cheshire

46th Division

40th R.Tks.
2nd N.F.
128th Inf. Bde.
2nd Hamps.
1/4th Hamps.
5th Hamps.
138th Inf. Bde.
6th Lincolns
2/4th K.O.Y.L.I.
6th Y. and L.
139th Inf. Bde.
2/5th Leicesters
2/5th Foresters
16th D.L.I.

56th Division

K.D.G.
 Greys
 6th Cheshire
 167th Inf. Bde.
 8th R.F.
 9th R.F.
 7th Oxf. Bucks.
 168th Inf. Bde.
 10th R. Berks
 1st Lond. Scots.
 1st L.I.R.

169th Inf. Bde.
 2/5th Queens
 2/6th Queens
 2/7th Queens
 201st Guards Bde.
 6th Gren. Gds.
 3rd Coldm. Gds.
 2nd Scots Gds.

23rd Armd. Bde.

306 T.D.T. (on November 14 also 11th K.R.R.C., K.D.G. and a squadron of 40th R.Tks.)

APPENDIX V

EIGHTH ARMY MEDICAL UNITS. SEPTEMBER 3, 1943

B.G.Hs.	. . . . .	58 (200 beds), 83 (200)
Fd. Hosp.	. . . . .	6 (80)
C.C.Ss.	. . . . .	3, 4, 5 (200 each)
Fd. Ambs.	. . . . .	14, 151 Lt., 159 (less one coy.)
Fd. Hyg. Sec.	. . . . .	11
F.S.Us.	. . . . .	4, 21, 22, 29, 35
F.T.Us.	. . . . .	3, 7, 11, 35
B.T.U.	. . . . .	5
Mob. Bact. Labs.	. . . . .	1, 5
Mob. Mal. Lab.	. . . . .	8
Mob. Ophthal. Unit	. . . . .	2
Adv. Depot Med. Stores	. . . . .	7
M.D.Us.	. . . . .	138, 139, 150, 151
M.A.Cs.	. . . . .	60, 146

APPENDIX VI

XIII CORPS. MEDICAL ORDER OF BATTLE FOR OPERATION 'BAYTOWN'

XIII Corps

C.C.Ss.	. . . . .	7, 15 (allotted to 5th Division for the assault phase)
Fd. Ambs	. . . . .	132
Fd. Hyg. Sec.	. . . . .	19
M.D.U.	. . . . .	130
Mob. Mal. Lab.	. . . . .	8 (detach.)
M.A.C.	. . . . .	146 (after D-day+2)

Canadian 1st Division

Fd. Ambs.	4, 5, 9 (Cdn.)
F.D.Ss.. . . .	1, 2 (Cdn.)
Fd. Hyg. Sec.	2 (Cdn.)
F.S.U.s.. . . .	1, 2 (Cdn.)
F.T.U.	1 (Cdn.)
Medical section	34 Beach Brick

Canadian 1st Army Tank Brigade

Fd. Amb.	2 Lt. (Cdn.)
------------------	--------------

5th Division

Fd. Ambs.	141, 158, 164
Fd. Hyg. Sec.	24
F.S.U.s.. . . .	1, 2
F.T.U.	3
Medical sections	32 & 33 Beach Bricks

231st Infantry Brigade

Fd. Amb.	200
F.S.U.	5
F.T.U..	4

APPENDIX VII

X CORPS, MEDICAL ORDER OF BATTLE FOR OPERATION 'AVALANCHE'

X Corps

C.C.Ss.	8, 14, 21
F.D.Ss.	865, 866
Fd. Hyg. Sec.	52
F.S.U.s.	3, 9, 23, 25, 36
F.T.U.s.	1, 12, 25
M.D.U.	133
A.M.C.U.	78
Beach Groups. Med. Secs.	3, 21, 35
U.S. General Surgical Teams	5, 25

7th Armoured Division

Fd. Ambs.	2 Lt., 131
Fd. Hyg. Sec.	70
F.S.U.	6
M.D.U.	132
A.M.C.U.s.	16, 76

46th Division

Fd. Ambs.	183, 184, 185
Fd. Hyg. Sec.	15
F.S.U.	24
M.D.U.	140
A.M.C.U.	49

56th Division

Fd. Ambs.	. . .	5 Lt. (201st Gds. Bde.), 140, 167, 214
Fd. Hyg. Sec.	. . .	51
F.S.U.	. . .	10
M.D.U.	. . .	135
A.M.C.U.s.	. . .	25, 77

23rd Armoured Brigade

Fd. Amb.	. . .	150 Lt.
----------	-------	---------

APPENDIX VIII

XIII CORPS, MEDICAL ORDER OF BATTLE AND LOCATION STATEMENT
AS AT SEPTEMBER 30, 1943*XIII Corps*

7 C.C.S.	. . .	Bari
15 C.C.S.	. . .	Barletta
132 Fd. Amb.	. . .	Matera
19 Fd. Hyg. Sec.	. . .	Altamura
139 M.D.U.	. . .	Matera, attached 132 Fd. Amb.
150 M.D.U.	. . .	Barletta, attached 15 C.C.S.
1 F.S.U.	. . .	Potenza, attached 158 Fd. Amb. of 5th Division
2 F.S.U.	. . .	Barletta, attached 15 C.C.S.
3 F.T.U.	. . .	Foggia, attached 11 Fd. Amb. of 78th Division
4 F.T.U.	. . .	Barletta, attached 15 C.C.S.
20 Beach Gp. (Detach. 159 Fd. Amb.)	. . .	Sapri
32 Beach Brick	. . .	Vibo Valentia

5th Division

141 Fd. Amb.	. . .	Lagonegro
158 " "	. . .	Potenza
164 " "	. . .	Sala Conilina
24 Fd. Hyg. Sec.	. . .	with H.Q. 5th Division

78th Division

11 Fd. Amb.	. . .	Foggia
152 " "	. . .	moving
217 " "	. . .	Trani
47 Fd. Hyg. Sec.	. . .	Barletta
4 F.S.U.	. . .	Foggia
29 F.S.U.	. . .	Foggia

} attached 11 Fd. Amb.

4th Armoured Bde.

14 Lt. Fd. Amb.	. . .	Taranto
-----------------	-------	---------

Canadian 1st Division

4 (Cdn.) Fd. Amb.		
5 " " "	. . .	moving to Lucera
9 " " "	. . .	Potenza

1	(Cdn.) F.D.S.		
2	" "	.	Potenza
2	" Fd. Hyg. Sec.	.	
1	" F.S.U.	.	Potenza, attached 2 (Cdn.) F.D.S.
2	" "	.	Potenza, attached 9 (Cdn.) Fd. Amb.
1	" F.T.U.	.	Potenza, attached 2 (Cdn.) F.D.S.

Canadian 1st Army Tk. Bde.

2	(Cdn.) Lt. Fd. Amb.	.	moving to Taranto
---	---------------------	---	-------------------

APPENDIX IX

V CORPS, MEDICAL ORDER OF BATTLE. SEPTEMBER 23, 1943

V Corps

Fd. Amb. 216

Fd. Hyg. Sec. 8

1st Airborne Division

Fd. Amb. 127, 16 Para., 133 Para., 181 Airlanding

78th Division

Fd. Amb. 11, 152, 217

Fd. Hyg. Sec. 47

Indian 8th Division

Fd. Amb. 29, 31, 33 (Ind.)

Fd. Hyg. Sec. 20 (Ind.)

4th Armoured Brigade

Fd. Amb. 14 Lt.

APPENDIX X

X CORPS. MEDICAL ARRANGEMENTS AND LOCATION STATEMENT AS AT NOVEMBER 13, 1943

<i>Type of Unit</i>	<i>Unit No.</i>	<i>Location</i>	<i>Remarks</i>
C.C.S.	8		
	6 U.S. Gen. Surg. Team & Detach.	2 Sparanise area	
	Aux. Surg. Gp. attached		
"	14		
	9 F.S.U., Cdn. F.S.U. & 25 F.T.U. attached	25 Francolise area	25 F.T.U. (blood bank) moving to 21 C.C.S. on arrival of Cdn. F.T.U.
"	21		
	2 F.S.U., 133 M.D.U. & corps psychiatrist attached	21 Francolise area	

THE ARMY MEDICAL SERVICES

<i>Type of Unit</i>	<i>Unit No.</i>	<i>Location</i>	<i>Remarks</i>
F.D.S.	865	Amalfi	X Corps Tps. Rest Centre
"	866	Sparanise area	
	6 & 36	F.S.U.s. attached	
Fd. Hyg. Sec.	52	Sparanise area	
A.M.C.U.	78	Sparanise area	
with divisions and areas :			
F.D.S.	865	Lt. Sec. Roccamonfina area	u/c 56th Div.
F.S.U.	10, 23 and 25		u/c 56th Div.
"	24		u/c 46th Div.
F.T.U.	1		u/c 56th Div.
M.D.U.	132		7th Armd. Div., later X Corps Rest Centre
"	135		56th Div.
"	140		46th Div.
"	153 and 155		57 Area Naples
M.A.C.	25	Sparanise area	

APPENDIX XI

X CORPS. MEDICAL ORDER OF BATTLE AND LOCATION STATEMENT AS AT DECEMBER 31, 1943

<i>Type of Unit</i>	<i>Location</i>	
8 C.C.S.	Sparanise area	25 F.S.U. attached
14 C.C.S. (25 F.T.U. acting as blood bank)	Francolise area	3 (Cdn.) & 9 F.S.U.s., 3 (Cdn.) & 25 F.T.U.s., 1 Mob. Ophthalm. Unit, X Corps Exhaustion Centre attached
21 C.C.S.	"	3 F.S.U. & 1 F.T.U. attached
865 F.D.S.	"	Adv. Surg. Centre, 23 & 36 F.S.U.s. & 12 F.T.U. attached (closed)
866 F.D.S.	Sparanise area	
52 Fd. Hyg. Sec.	"	
78 A.M.C.U.	"	
220 Fd. Amb. (less one coy.)	Pizzone	132 M.D.U. attached
25 M.A.C.	Sparanise area	
with divisions and areas :		
150 Lt. Fd. Amb.		u/c 23rd Armd. Bde.
10 F.S.U.	Sessa	attached 140 Fd. Amb., 56th Division

Type of Unit	Location	
24 F.S.U.	Sipicciano	attached 185 Fd. Amb., 46th Division
133 M.D.U.	S. Maria	attached M.I. Room.
135 "	"	u/c 56th Division
140 "	"	u/c 46th Division
153 "	"	57 Area Naples
155 "	Nola	57 Area

APPENDIX XII

EIGHTH ARMY. MEDICAL ORDER OF BATTLE AND LOCATION STATEMENT AS AT THE END OF NOVEMBER 1943

XIII Corps

5th and Canadian 1st Divisions, Cdn. 1st Army Tk. Bde.

*V Corps*78th and Indian 8th Divisions, 4th Armd. Bde. N.Z. 2nd Division
86 Area*Army Medical Units*

C.C.Ss.	1, 1 (N.Z.), 4, 4 (Cdn.), 5, 7, 9 (Ind.), 15, 18, 19
Fd. Ambs.	14, 132, 151 (Lt.), 216
F.S.U.s.	1, 1 (Ind.), 1 (Cdn.), 1 (N.Z.), 2, 2 (Cdn.), 4, 5, 7, 8, 19, 21, 22, 26, 28, 31, 32, 35
F.T.U.s.	1 (Cdn.), 2 (Cdn.), 3, 4, 7, 9, 11, 26, 34, 35, N.Z.
Mob. Bact. Labs.	1, 5
Mob. Hyg. Lab.	3
Mal. Fd. Lab.	8
Max.-Fac. Surg. Unit	1 (detach)
Neurosurg. Unit	4 (detach)
Mob. Ophthal. Unit	2
Indian E.N.T. Surg. Unit	24
Indian Ophthal. Surg. Unit	25
V.D.T.C.	5
M.D.U.s.	130, 131, 138, 139, 150, 151
Indian Dent. Surg. Unit	15
Ind. Dent. Mech. Unit	3
Dent. Surg. Unit	2
Fd. Hyg. Secs.	8, 11, 13, 19
Beach Brick Med. Sec.	34
I.S.S.	30
M.A.C.s.	88, 112, 146, N.Z., 567 (A.F.S.) A.C.C.
M.A.S.	6
Adv. Depots Med. Stores	3, 7

LOCATION STATEMENT. NOVEMBER 1943

East

Taranto	. . .	70 B.G.H. 30 I.G.H. 159 Fd. Amb. 8 F.S.U. 12 (Ind.) Fd. Lab. 4 Dental Lab. 151 M.D.U. 36 Fd. Hyg. Sec. 34 Brick Medical Stores
Brindisi	. . .	84 B.G.H. 43 West African Section 20 Fd. Hyg. Sec. 37 A.M.C.U.
Bari	. . .	54 B.G.H. 58 B.G.H. (moving to Nocera) 98 B.G.H. 42 West African Section 14 C.G.H. 16 (Ind.) Fd. Lab. 5 V.D.T.C. 5 B.T.U. 3 F.T.U. 34 Fd. Hyg. Sec. 35 A.M.C.U.
Trani	. . .	76 B.G.H. 11 Con. Depot
Andria	. . .	30 I.G.H. (100-bed expansion)
Barletta	. . .	50 B.G.H. 83 B.G.H. 93 B.G.H. 3 Adv. Depot Med. Stores
Foggia	. . .	4 C.C.S. 14 Fd. Amb. 5 V.D.T.C. 30 I.S.S.
Manfredonia	. . .	151 Lt. Fd. Amb.
San Severo	. . .	3 C.C.S. 22 F.S.U. 35 F.S.U. 34 F.T.U. detachment of 4 Neurosurg. Unit 2 Mob. Ophthal. Unit
Torremaggiore	. . .	1 C.C.S.

Campobasso . . .	15 C.C.S. 35 F.S.U.
Casacalenda . . .	7 C.C.S. 5 F.S.U. 31 F.S.U. 4 F.T.U.
Termoli . . .	18 C.C.S. 19 C.C.S. 28 F.S.U. 9 F.T.U.
Vasto . . .	5 C.C.S. 1 (N.Z.) C.C.S. 9 (Ind.) C.C.S. 1 F.S.U. 2 F.S.U. 1 (Ind.) F.S.U. 26 F.T.U.
<i>West</i>	
Salerno . . .	59 B.G.H. 1 Fd. Hyg. Sec.
Amalfi . . .	865 F.D.S.
near Nocera . . .	220 Fd. Amb.
Sorrento . . .	7 Con. Depot
Naples . . .	65 B.G.H. 92 B.G.H. 2 Chest Surg. Team 153 M.D.U. 155 M.D.U. 9 Mal. Fd. Lab. (section) 62 Fd. Hyg. Sec. 10 Adv. Depot Med. Stores
Pignataro . . .	866 F.D.S. 6 F.S.U. 36 F.S.U.
Francolise . . .	14 (Mob.) C.C.S. 21 (Mob.) C.C.S. 3 F.S.U. 9 F.S.U. 25 F.T.U. 133 M.D.U.
Sparanise . . .	8 Lt. C.C.S. 12 F.T.U. 52 Fd. Hyg. Sec. 78 A.M.C.U.

CHAPTER 3

THE CAMPAIGN IN ITALY (contd.)

B. January to June 1944

PRÉCIS

THE WINTER LINE had been pierced, but its main strength—the mountainous Gustav Line—blocked the way through to the Liri valley.

General Alexander decided that the time had come to launch Operation 'Shingle', an amphibious landing by U.S. Fifth Army at Anzio, south of Rome, and an attack directed at the Alban Hills, thus to threaten the rear of the German Forces in the Gustav Line.

At the same time, the U.S. Fifth Army would thrust at Cassino and Frosinone. Two divisions from the Eighth Army were transferred to strengthen this frontal attack.

On January 17, X Corps attacked across the Garigliano and secured a foothold on the lower slopes of the Auruncian mountains. U.S. II Corps, failing to force the passage of the Rapido, joined the French Expeditionary Corps in a drive through the mountains north of Monte Cassino.

Cassino proved to be the great barrier to the Allied advance. Its defenders repulsed an assault by U.S. II Corps, January 29–February 11, and a second by the New Zealand Corps, brought across from Eighth Army in the east, from February 12–18. On March 15, the New Zealanders attacked again but made no appreciable gains in ten days of most vicious fighting.

On January 22, U.S. VI Corps with a strong British component landed on the Anzio beaches south of Rome to establish a bridgehead, to threaten and, if possible, to cut the German lines of communication. But this bridgehead was quickly and skilfully contained. A seven weeks' pause ensued during which the Allied armies were regrouped.

Eighth Army, with a Polish, a Canadian and two British corps, moved across from the Adriatic sector to the entrance of the Liri valley. V Corps was left in the Adriatic sector. U.S. Fifth Army became responsible for the Anzio and Garigliano sectors of the line in the west, with U.S. VI Corps in the bridgehead and U.S. II Corps and the French Expeditionary Corps on the southern front.

The defences of the Liri valley were based on two lines—the Gustav and the Hitler. The Allied assault upon them opened on May 11. On the 13th the French Corps captured the dominating feature of Monte Maio. The Poles in the mountains above Cassino, XIII Corps in the

valley and U.S. II Corps on the western coast all encountered fierce and stubborn opposition, but exploitation of the gap made by the French Corps led to the piercing of the Gustav Line and Monte Cassino was isolated. It was finally captured by the Poles on May 18. The Canadians then shattered the Hitler Line near Pontecorvo on the 23rd. On the west coast U.S. II Corps advanced swiftly and on the 23rd U.S. VI Corps broke out of the Anzio bridgehead. On the 25th patrols of U.S. II and VI Corps met in the Pontine marshes.

At Velletri and Valmontone at the head of the Liri valley the Germans attempted to stand but they were thrown back, Valmontone being entered by the Americans on June 2. They then turned west and entered Rome on June 4.

(i)

The Assault on the Gustav Line

PREPARATIONS FOR THE ASSAULT

General Eisenhower returned to the United Kingdom to take charge of the preparations for Operation 'Overlord'. In his place General Maitland Wilson, on January 8, 1944, became Supreme Commander in Chief, Central Mediterranean Force (C.M.F.). General Alexander remained as C. in C. 15 Army Group. On January 20, his H.Q. moved to Caserta, to open in the Royal Palace of 1,200 rooms, one of the great architectural achievements of all time. Its accommodation was later to be overtaxed when A.F.H.Q. arrived.

The Order of Battle of A.C.M.F. (Allied Central Mediterranean Force), the name now given to General Alexander's H.Q., as at January 22, 1944, is given in Appendix XIII. The name was changed again on March 9 to Allied Armies in Italy (A.A.I.).

General Alexander's operation instruction of November 8 had directed that in the third phase of the invasion, in which the objective was to be Rome, an amphibious landing would be made south of Rome and directed on the Alban Hills (Operation 'Shingle'). The time for the mounting of this operation had now arrived.

The hills dominated both Route 6 and Route 7 which were the supply lines of the German forces on the river Garigliano and were also their lines of retreat, should they be forced to do so. The beaches around Anzio gave immediate access to an expanse of flat open country with good roads leading directly to the Alban Hills with their Castelli Romani, a series of small villages, primitive without being picturesque, twenty miles away. The port of Anzio, could this be captured intact, would be of great value.

On November 25 it was decided that Operation 'Shingle' would be timed to coincide with the arrival of the main body of U.S. Fifth Army on the general line Capistrello-Ferentino-Priverno. Later it was decided that two divisions should be landed on or about January 20. The objective was defined as to cut the enemy communications and threaten the rear of the German force in the Gustav Line. U.S. Fifth Army was required to make as strong a thrust as possible towards Cassino and Frosinone, both on Route 6, shortly before the assault landing.

The Adriatic sector was now of secondary importance. The objectives of political and military value were all in the west. It was therefore decided to strengthen the army in the west at the expense of that in the east.

THE TACTICAL PLAN

1. The French Expeditionary Corps would attack the high ground north of Cassino on January 12.

2. U.S. II Corps would capture Monte Porchia and Monte Trocchio and reach the Rapido on January 15.

3. X Corps would cross the lower Garigliano in the Minturno area on January 17 and attack up the Ausente valley towards San Giorgio a Liri.

4. U.S. II Corps, with its flanks thus protected, would force the Rapido in the area of Sant' Angelo in Theodice on January 20 and exploit westwards and north-westwards.

5. On January 22, U.S. VI Corps, with 1st (Br.) Division u/c, would land at Anzio and threaten the enemy's rear.

6. U.S. VI Corps would later be reinforced by U.S. 1st Armd. Division and U.S. 45th Division.

7. To strengthen the frontal attack, N.Z. 2nd Division would be withdrawn from Eighth Army and concentrated in the Naples area by January 26. (1st and 5th Divisions had already been transferred from Eighth Army to U.S. Fifth Army.)

THE TERRAIN

The west coast rises steeply into the Aurunci and Lepini mountains, at this time under deep snow and at all times impracticable for the movement of large formations. The coastal road hugs the shore until it debouches into the Pontine marshes which the Germans had flooded. Between the Aurunci and the Lepini mountains and the main Apennine range lies the Liri valley. Through this gap, varying in width from four to seven miles, runs Route 6, the Via Casilina. At the eastern end of the Aurunci mountains the River Liri meets the Rapido to form the Garigliano. (Between Cassino and this confluence the Rapido is named the Gari.)

The mouth of the Liri valley was guarded by formidable defences. To enter it the Rapido had to be crossed and the mountain peaks overlooking it secured. The bastion of this defensive line was the mountain mass at its eastern end where Monte Cairo formed the southernmost peak of the Apennines. From its summit a ridge thrusts out to end abruptly as Monte Cassino. Before Rome could be approached by this route this bastion had to be stormed. The promontory formed by Monte Cassino lies to the west of the River Rapido, just before this becomes the Gari. On Monte Cassino was a Benedictine monastery located at the extreme end of the spur which at this point is known as Monastery Hill. The monastery itself was a very solid construction surrounded by a granite wall more than thirty feet thick in places. From the southern fringe of Cassino town a road wound up to the monastery in a series of five switchbacks up the hill slopes. Along these were several outcrops of rock. The first of these was Point 165, barely three hundred yards from the castle gate (see on); the second was Point 236, a further three hundred yards up the road. These two points formed a strong defensive position covering the approaches to Monte Cassino from the north. Higher up Monte Cassino was a rocky knoll some three hundred yards from the monastery and indicated on the map as Point 435. Hereabouts was a small area of flat ground which came to be known as 'Hangman's Hill', for it was here that some of the most bitter fighting occurred. Immediately above the town, near Point 193, was a high knoll with a ruined castle on its crest. This was therefore known as Castle Hill. In front of Castle Hill was a track joining the road to the monastery. To the west of Monastery Hill were two dominating features, Point 593 and Point 575, both of which were heavily defended.

Huge emplacements, constructed of steel and concrete that could withstand the heaviest artillery, had been dug into the hills; observation posts on the peaks all along the river gave excellent views of every movement and provided the maximum scope for interlocking fields of fire. The town of Cassino, nestling beneath the eastern face of Monte Cassino, was strongly fortified, and to the south of Cassino overlooking the valley, the German guns, placed on high ground, covered almost every foot of the approaches along the river and Route 6.

THE ASSAULT

Facing the Gustav Line U.S. Fifth Army had seven divisions, six in the line and one in reserve. In the northern sector were the French 3rd Algerian and 2nd Moroccan; in the centre were U.S. 34th and 36th Divisions of U.S. II Corps, while on the left X Corps had 5th, 46th and 56th Divisions and 23rd Armd. Brigade.

On January 8, U.S. 1st Special Service Force captured Monte Maio and held it against repeated counter-attack. 168th Infantry turned the

German positions on Monte la Chiaia and 135th Infantry stormed into San Vittore. A special task force captured Monte Lungo and recaptured Monte Porchia. A lesser hill called Cedro, south of Porchia, was taken after costly fighting by a brigade of 46th Division. On January 13, U.S. 133rd Infantry captured Monte Capraro and 168th Infantry entered Cervaro and the way was opened for the attack on Monte Trocchio. The Germans made no serious attempts to hold it and it was taken on the 15th. U.S. 3rd Division reached the vicinity of Sant' Elia. On the right of U.S. II Corps the French Expeditionary Corps took Cardito, sent patrols across the Rapido and established outposts on the slopes of Monte S. Croce and Colle dell' Arena. The French Colonials also took Monte Passero and reached the vicinity of Sant' Elia.

Since its capture of Monte Camino on December 9, X Corps had been engaged only in minor operations, though in the battle for Colle Cedro 138th Bde. of 46th Division had suffered severely. Its strength was now three infantry divisions and one armoured brigade. 46th Division was to cross the Garigliano in the vicinity of San Ambrogio to guard the left flank of the American attack. The remainder of the Corps was to attack between Monte Castelluccio and the sea.

At Monte Castelluccio the river leaves its mountain valleys to wind its way through a flat alluvial plain. It was about a hundred yards wide and too deep for fording between banks about fifteen feet high. In the flat fields on either side were many streams and ditches. The bridges had been blown. The German positions were on the hills on either side of the Ausente.

5th Division came into the line on the left in the seaward sector. 201st Guards Bde. was transferred from 56th to 5th Division. The Navy and the Air Force were to isolate the area of battle.

On the evening of January 17 the guns of X Corps opened the battle with concentrated fire on targets on 56th Division's front. 169th Bde. crossed the river to gain a foothold on the ridge from Monte Castelluccio to Suio while 167th Bde. on its left advanced to Colle Salvatito. Many of the assault boats were sunk by the German guns but by the morning of the 18th all three battalions of the Queens were over the river and on the ridge and 167th Bde. was on the slopes of Colle Salvatito. 5th Division crossed the river without any artillery cover and by the early morning of the 18th had captured the village of Tufo only to lose it later.

In the early hours of January 19 the first bridge was built about two miles above the Via Appia but minefields just beyond it caused much delay. At length 15th Bde. crossed and, passing through 13th Bde., pressed on to recapture Tufo and to take Minturno. On the 20th Monte Natale was taken.

In 56th Division's sector all three brigades were committed but accomplished little.

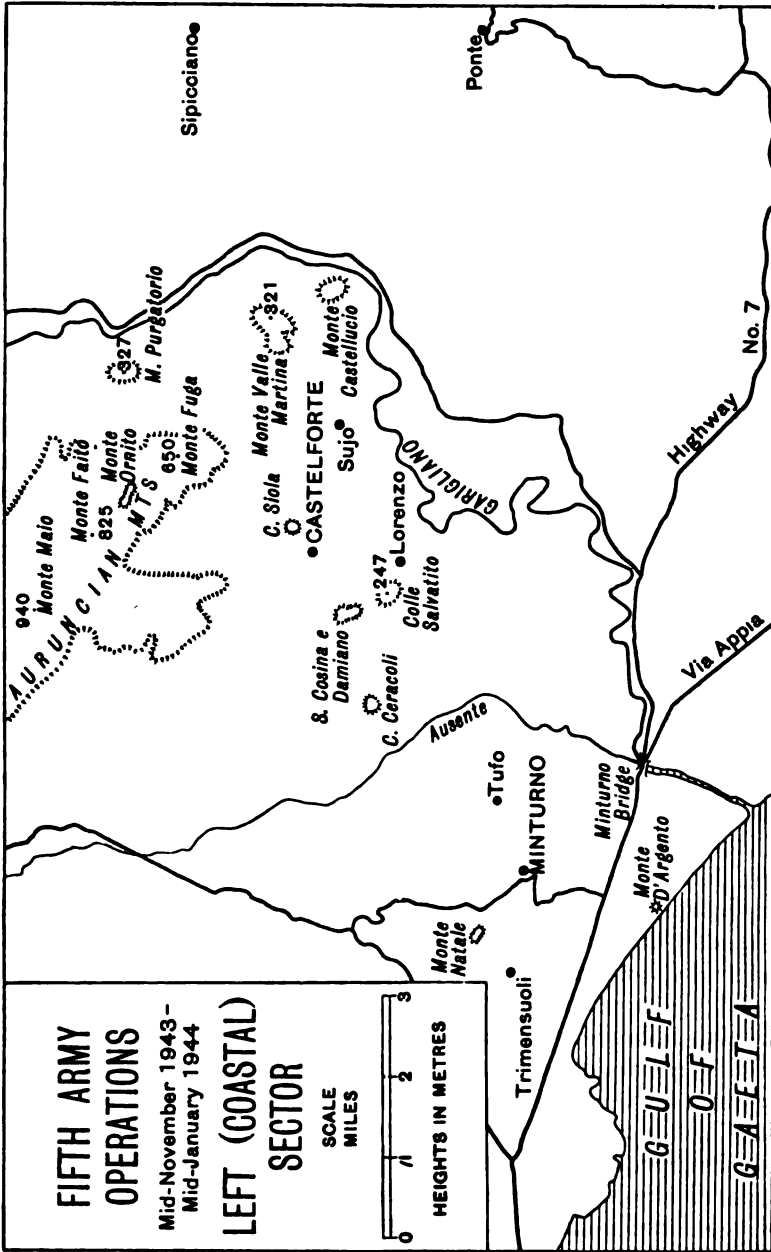


FIG. 43. U.S. Fifth Army Operations. November 1943-January 1944. Left (Coastal) Sector.

46th Division failed to get across the river at San Ambrogio. Fog and a strongly running stream defeated the attempt and so 138th Bde. of 46th Division was placed u/c 56th Division and the division was re-grouped. On the right 138th Bde. relieved two battalions of the Queen's Bde.; in the centre the R. Berks and the London Scottish of 168th Bde. took over from the depleted R.F. and Oxf. Bucks of 167th Bde.; between Castelforte and San Lorenzo were the L.I.R. of 168th Bde. and on Colle Salvatito were 9th R.F. of 167th Bde. A fierce German counter-attack on January 22 was held, though not without difficulty.

Sixty miles away on the beaches of Anzio and Nettuno U.S. VI Corps had landed on this same morning.

The Queen's Bde. moved into the Damiano area to secure the Ceracoli hill above the Ausente but failed to make much progress. 17th Bde., relieved on the beach by 23rd Armd. Bde., concentrated south of Minturno and advanced against Monte Natale, but was soon checked. On January 26, 46th Division took command of the Suio sector and 138th Bde., with the D.L.I. of 139th Bde. under command, began to clear the Suio valley and the overlooking hills. Its task was completed by dawn on the 28th and by midnight of the 29th the Yorks & Lancs were on Iuga, the Lincolns on a hill between Iuga and Castelforte and the D.L.I. were nearing Colle Siola.

56th Division, now rested, then took up the attack, but without success. 5th Division took Natale and the western slopes of the Trimon-suoli ridge.

2nd Special Service Bde., consisting of two Commandos, being withdrawn from Anzio, joined X Corps on January 31 and went into the line in the Suio valley. Two nights later the brigade took Monte Faito but was forced to withdraw to Monte Ornito. 5th Hamps relieved 2nd S.S. Bde., captured Monte Cerasola and withstood many counter-attacks during the next five days.

On February 6, 1st Guards Bde. arrived, to pass u/c 46th Division. But quickly following the Guards came the instruction that 56th Division H.Q. and its two remaining brigades had to withdraw from the hills and join its other brigade in the Anzio bridgehead. This reduction in strength necessarily brought X Corps' offensive abruptly to an end. 5th Division extended its line to include that previously held by 56th Division and in the mountains 1st Guards Bde. relieved 138th Bde.

Until March 29, when X Corps handed over its sector to the French Expeditionary Corps and the U.S. II Corps, the line of the Garigliano bridgehead remained substantially unchanged.

Disappointment had likewise been the lot of the Americans. U.S. II Corps made its frontal attack over the Rapido on January 20 and the French Expeditionary Corps began to advance across the mountains to turn the Gustav Line from the north. The natural strength of the

mountainous area had been greatly reinforced by strongpoints and the town of Cassino had been strongly fortified. Above Cassino the stream of the Rapido had been diverted on to the river flats. The approaches to the river had been heavily mined.

The plan was for U.S. 36th Division to establish a bridgehead near Sant' Angelo and for Combat Command 'B' of U.S. 1st Armoured Division to pass through and attack towards Aquino and Piedimonte while U.S. 34th Division on the right put in a holding attack against Cassino and U.S. 45th Division made ready to pass through the bridgehead at Cassino from the south-west.

The assault was launched by 141st Infantry north of Sant' Angelo and by 143rd Infantry south of the village. It was unsuccessful. The attack was renewed on January 21 but once more it failed.

On January 21 the French Expeditionary Corps advanced in the direction of Atina and took the crest of S. Croce. The French then turned south-west towards Piedimonte.

U.S. 34th Division then made its attempt to cross the Rapido north of Cassino on the evening of January 24. It got across by midnight of the 25th. After very bitter fighting Hills 56 and 213 and the village of Cairo were captured by January 31. The French were then able to take Colle Marino, north of Cairo, Colle Belvedere and Colle Abate, but the last was recaptured by the Germans on the 27th and later captured again by the French.

The assault on the Monte Maiola area was now launched by U.S. 34th Division in heavy fog on February 1. Hill 771 and the crest of Monte Maiola were captured and by nightfall on the 3rd the division was a mile and a half to the north of Route 6. 133rd Infantry, supported by armour, penetrated into Cassino town on February 2 but were flung back by a German counter-attack. On the 3rd the attack was renewed and Hill 175 was taken. On the 4th, 135th Infantry captured Colle Sant' Angelo but was forced to withdraw therefrom to Hill 706. On the 5th an American platoon actually reached the walls of the Abbey. That night the assault on Monastery Hill was launched, but fire from Castle Hill pinned it down and it was unsuccessful.

The Germans were being strongly reinforced and counter-attacks by the newly arrived formations halted the American advance.

On February 3, N.Z. 2nd and Indian 4th Divisions from Eighth Army joined U.S. Fifth Army as the New Zealand Corps. The New Zealanders took over the sector south of Route 6 and relieved U.S. 36th Division to continue the attack on Cassino; U.S. 36th Division moved into the hills to continue the attack on the right of U.S. 34th Division with the intention of capturing Piedimonte from the north-east; U.S. 34th Division was to renew its attack on Monte Cassino and south of the Liri, X Corps was to attack towards Monte Faito and the mountains

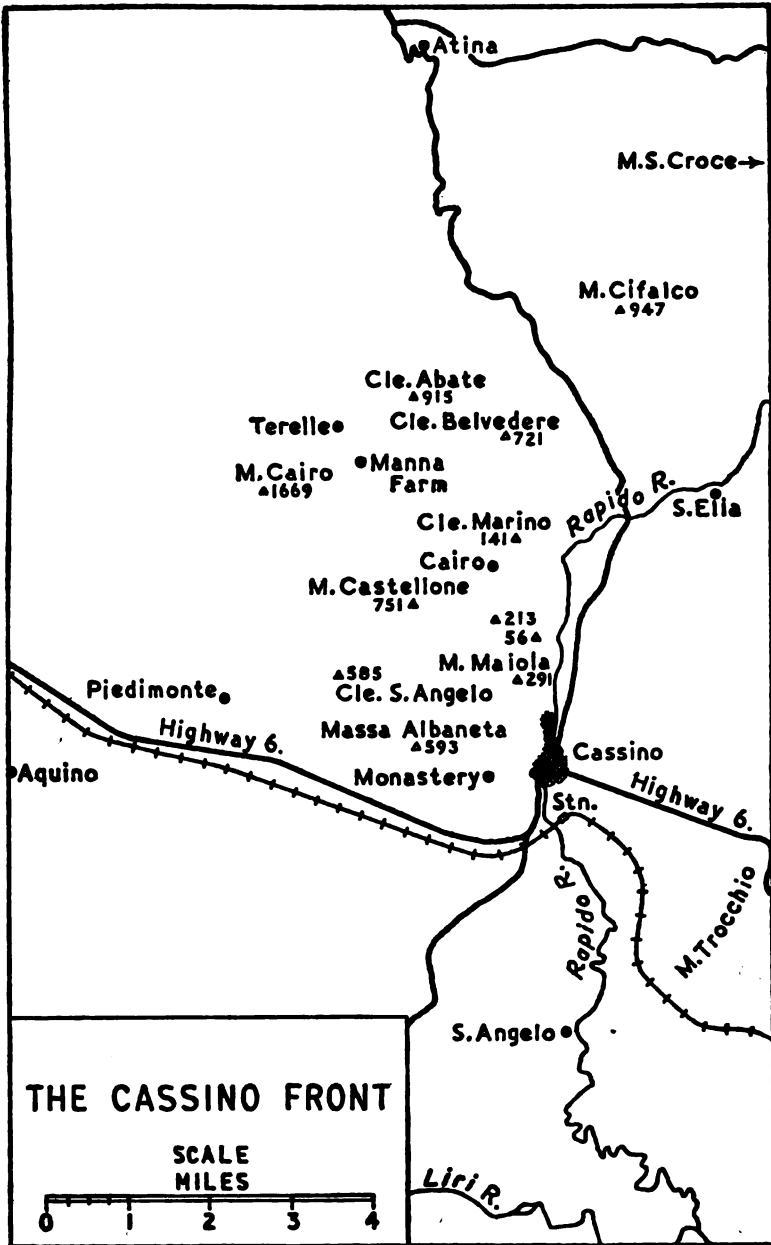


FIG. 44. The Cassino Front.

behind Castelforte. If these attacks were successful the N.Z. Corps would exploit success.

Neither U.S. II Corps nor X Corps reached their objectives however. Every attack evoked fierce counter-attack and the gain or loss could be measured in yards. The losses endured by the Americans and their opponents were severe.

The New Zealand Corps was transferred to U.S. Fifth Army to provide a pursuit force to be used after the smashing of the Gustav Line. But it was not to be used for this purpose. To it 78th Division had been added and its task had become that of taking Monte Cassino. By February 12 it had taken over the Cassino sector from U.S. II Corps but there were still American units to be relieved—on Monte Cassino, on Castellone, in the outskirts of Cassino town, on Point 593, isolated and unable to withdraw.

The New Zealanders' tactical plan was that Indian 4th Division should secure Point 593 and then advance along the ridge previously traversed by the Americans, and move down the hill to cut Route 6 and so compel the Germans to withdraw from Cassino town while the New Zealanders advanced from the east, crossed the Rapido and carried out a frontal attack upon Cassino town. H.Q. Indian 4th Division moved to Cervaro and Ind. 7th Bde. to San Michele. Before the attack a redistribution of the brigades of Indian 4th Division occurred. Ind. 7th Bde. moved to the lower slopes of Monte Castellone, near Cairo village, Ind. 5th Bde. to Portella and Ind. 11th Bde. to San Michele. Ind. 7th Bde., reinforced by 1/9th Gurkhas of Ind. 5th Bde. and 4/6th Rajputs of Ind. 11th Bde., prepared to take over Point 593 from the Americans. But though there were Americans on Point 593, these did not control the ground. Their numbers had become grievously reduced and the survivors were under fire from the ruins of an old fort on the summit of the hill which the Germans held in strength, and from Point 575, twelve hundred yards to the west, and from Monte Cassino itself. It was not a question of Ind. 7th Bde. taking over Point 593; the brigade had to capture it.

The attack on the monastery had to be postponed until the weather improved. It had been decided that the bombing of the monastery was an inevitable necessity, for it seemed to be the hub of the German defensive system.

On February 15 over 350 tons of bombs were dropped by 255 heavy and medium bombers. The monastery was wrecked. Immediately the bombing ceased the leading elements of Ind. 7th Bde. moved to attack 593. This attack was repulsed. On the 16th, fighter bombers assailed the monastery and at night the Royal Sussex attacked again, and again the attack failed. It was decided that a larger force must be employed. To Ind. 7th Bde. were added four battalions from the other brigades. On

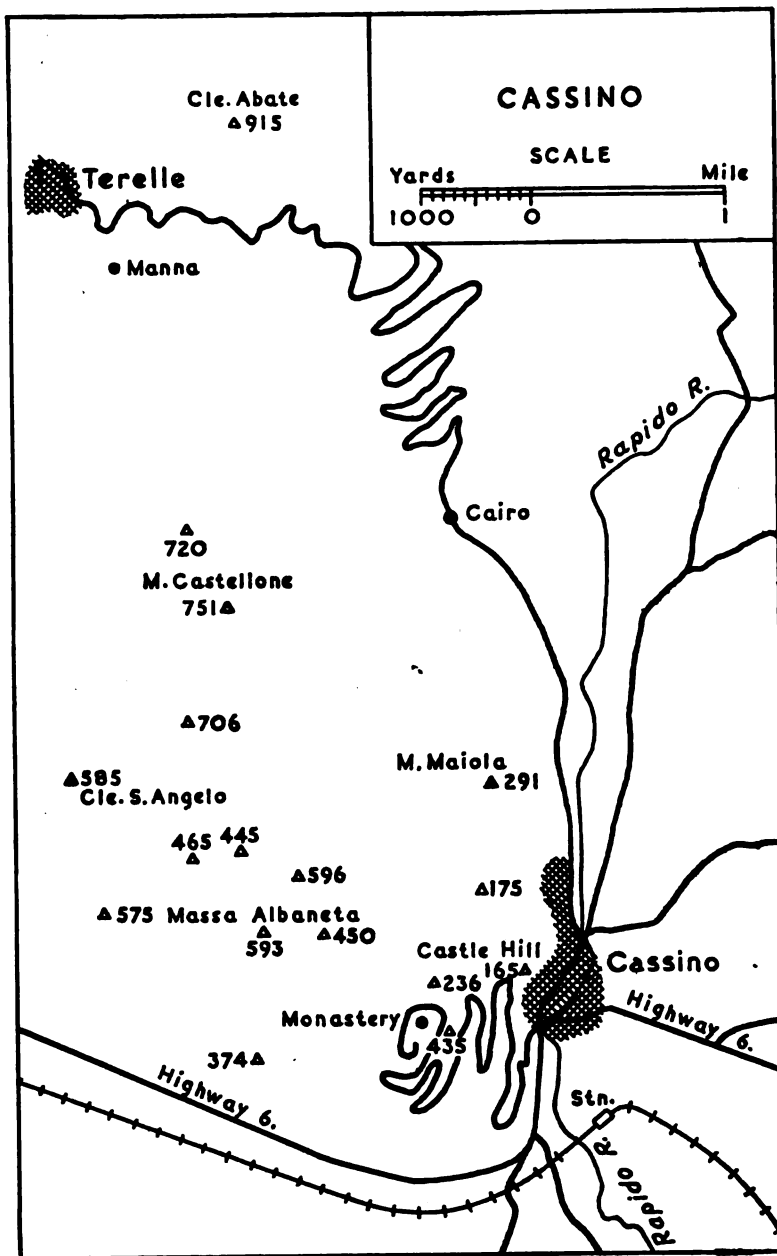


FIG. 45. Cassino.

the 17th, fighter bombers again bombed the monastery and at midnight the Rajputana Rifles, with three companies of Royal Sussex under command, captured Point 593, though at heavy cost, but two companies of 1/2nd Gurkhas, advancing towards the monastery, were checked by a belt of scrub, neck-high and well thorned, and came under a hail of fire from nearby emplacements. The few survivors withdrew and dug in. The Rajputana Rifles were unable to advance from Point 593 to Point 444, nearer the monastery. A company of 2nd Gurkhas captured this point and were reinforced by three companies of 1/9th Gurkhas. But until the monastery was captured Point 444 would remain untenable by day for it was overlooked. The Gurkhas were withdrawn to the northern face of Point 450. The Rajputs were likewise withdrawn to the reverse slopes of Point 593.

Meanwhile the New Zealanders had been fighting to cross the Rapido and to capture Cassino town by an attack from the south. To N.Z. 5th Bde. fell the task of securing the bridgehead while an armoured task force made ready to advance along the embankment. N.Z. 28th Bn. (the Maori battalion) was to lead the attack and on February 17 the brigade concentrated north-west of Monte Trocchio, between the railway and Route 6. When darkness fell two companies advanced over mine-strewn, water-logged fields, to be checked by wire in front of the strongly defended railway station. They captured the railway station before dawn. During the morning the Germans counter-attacked and the station was overrun and the rest of the battalion was forced back across the Rapido where it was relieved by N.Z. 24th Bn.

It was now accepted that the taking of Monte Cassino by assault in winter cold and rain required a new tactical plan if it were to be successful. It was decided that the eastern approach to Monte Cassino was hopeless, for it was covered by the strongest defences and in this area the ground was too soft for armour and transport. American troops still had a foothold in the northern outskirts of Cassino town and Castle Hill could be reached through the town and from Castle Hill the monastery itself could be approached.

A new plan was now drawn up, its main features being as follows :

1. Cassino town would be heavily bombed.
2. Immediately thereafter N.Z. troops would advance from the north, take Castle Hill and proceed to clear the town.
3. Ind. 5th Inf. Bde. would move forward, take over Castle Hill from the New Zealanders and advance to Point 435 where it would protect the right flank of the New Zealanders moving along Route 6.

During the night of March 14/15, N.Z. 24th Bn. withdrew to a distance of a thousand yards from the northern fringes of Cassino. At 0830 hours on the 15th, 338 heavy and 176 medium bombers pounded the town of Cassino for four hours. Some of the heavy bombers mistook

Venafro, a dozen miles away, for Cassino and caused many casualties among British troops and Italian civilians. Other bombs were dropped at Isernia, Trocchio and Cervaro. The total drop was about one thousand tons.

By the evening of the 15th the greater part of Cassino town had been captured, but in the west and south-west of the town there still remained many Germans full of fight. N.Z. 6th Bde. found progress difficult through the chaos of the streets. Turning west the brigade attacked and took Castle Hill by 1630 hours but were then held up by strongpoints in the Continental Hotel and a building four hundred yards to the east. Then the weather broke and during the wet darkness German soldiery filtered back into the town. Ind. 5th Bde. followed the New Zealanders into the town. The Essex relieved the New Zealanders on Castle Hill and took Point 165, three hundred yards further on. The Indian battalions of the brigade were less fortunate, but one company of the Gurkhas captured Point 435 ('Hangman's Hill'), only four hundred yards under the monastery. The devastation in the town caused by the bombing had made its streets impassable for tanks and its ruins were excellent cover for the German infantry.

At dawn on the 17th the attack was resumed. N.Z. 26th Bn. advanced on the railway station and ultimately captured it and the strongpoints nearby. In the meantime, 1/9th Gurkhas of Ind. 5th Bde. became completely isolated on 'Hangman's Hill'. The problem of supplying them was extremely difficult for the German positions overlooked the whole route. For two nights 4/6th Rajputana Rifles served as porters and escorts for porters. On the 18th it was impossible to reach 'Hangman's Hill' and the Gurkhas had to be supplied by air.

On the 19th the New Zealanders attacked before dawn and the Maoris got to within a single street's distance from the Continental Hotel. N.Z. 25th Bn. were unable to overcome Germans in deep dug-outs at the bottom of Castle Hill. Ind. 5th Bde. reached 'Hangman's Hill', but not in sufficient strength to relieve its garrison.

In the reeking chaos of the town the New Zealanders fought for another day or two to get across Route 6 and to subdue the strongpoint in the Continental Hotel. But the battle was over and its outcome was deadlock. The Germans still held on to the western fringes of the town and could not be ejected. They still held the monastery and its satellite peaks and so dominated the whole area. Indian 4th Division had suffered 3,000 casualties. The New Zealanders were exhausted.

It was decided to consolidate a line running from Castle Hill to the railway station. The small garrison was extricated from its position on 'Hangman's Hill' by a number of diversionary operations.

Between March 25 and 30, Indian 4th Division was relieved by 78th Division and withdrew to the rear area for rest and refitting. It then

moved to the Adriatic side to take over the Crecchio—Orsogna—Guardia-grele sector.

MEDICAL ARRANGEMENTS AND LOCATION STATEMENT OF X
CORPS MEDICAL UNITS—JANUARY 16, 1944

Francelise . . .	21 Mob. C.C.S.
	3 F.S.U.
	1 F.T.U. (Blood bank)
	14 C.C.S.
	9 F.S.U.
	25 F.T.U.
	1 Mob. Ophthal. Unit
	X Corps Exhaustion Centre (attached 14 C.C.S.)
Sparanise . . .	8 Lt. C.C.S.
	30 F.S.U.
	866 F.D.S. moving to Carinola
	52 Fd. Hyg. Sec. (Corps)
	78 A.M.C.U. (Corps)
	25 M.A.C.
	485 A.F.S., A.C.C. (two plns. less two secs.)
S. Maria . . .	15 Mob. C.C.S.
	133 M.D.U.
Pizzone . . .	220 Fd. Amb. less B. Coy (Corps)
	132 M.D.U.
Trentola . . .	5 Lt. Fd. Amb. (with 201st Guards Bde.)
Qualiano . . .	150 Lt. Fd. Amb. (with 23rd Armd. Bde.)
Sipicciano . . .	865 F.D.S.
	23 F.S.U. (A.S.C.)
	3 (Cdn.) F.T.U.
	24 F.S.U. (attached 185 Fd. Amb. 46th Division)
Mondragone . . .	1 F.S.U. (attached 164 Fd. Amb. 5th Division)
Carinola . . .	5 F.S.U. (attached 141 Fd. Amb. 5th Division)
	4 F.T.U.
Sessa . . .	10 F.S.U. (attached 140 Fd. Amb. 56th Division)
Roccamonfina . . .	3 (Cdn.) F.S.U. (attached 183 Fd. Amb. 46th Division)
Nola . . .	155 M.D.U. (attached 57 Area)
Capua . . .	161 M.D.U. (attached M.I. Room)
	135 M.D.U. with 56th Division
	139 M.D.U. 5th Division
	140 M.D.U. 46th Division

By January 26 the following changes had occurred :

Lt. Sec. 8 C.C.S. had moved from Sparanise to Sessa, together with 30 and 23 F.S.U.s. and 25 F.T.U., to form an advanced surgical centre.

3 (Cdn.) F.S.U., 3 (Cdn.) F.T.U. and 5 Neurosurgical Team had joined 14 Mob. C.C.S. at Francolise.

18 C.C.S. had reached Francolise on the 24th but remained closed.

220 Fd. Amb. was moving from Pizzone to Mondragone there to take over from 164 Fd. Amb. of 5th Division.

5 Lt. Fd. Amb., with 201st Guards Bde. was now in S. Andrea and 150 Lt. Fd. Amb. with 23rd Armd. Bde. in Francolise. 141 Fd. Amb. with 5 F.S.U. and 4 F.T.U. attached had moved from Carinola to Cellole and 158 Fd. Amb. with 1 F.S.U. attached was in Carinola.

By February 12 the following changes had taken place :

8 C.C.S. was now complete in Sessa and was functioning as an advanced surgical centre, with two F.S.U.s. and one F.T.U. attached.

The Canadian medical units had left 14 C.C.S. at Francolise.

865 F.D.S. was in Cellole, attached to 158 Fd. Amb. So also was 3 (Cdn.) F.T.U.

220 Fd. Amb. was in Mondragone and to it was attached 132 M.D.U.

By February 19, 220 Fd. Amb., less A Coy., was in Sparanise, 1 F.S.U. had joined 158 Fd. Amb. in Cellole as had also 33 F.T.U.

By March 4 the only change that had occurred was the move of 33 F.T.U. to join 14 Mob. C.C.S. at Francolise.

The Medical Units serving under the Allied Central Mediterranean Force (A.C.M.F.) from December 1943–March 1944 will be found in Appendix XIV.

MEDICAL COVER

56TH DIVISION

When, between January 1 and February 13, 1944, 56th Division was serving on the Garigliano front, in addition to its three field ambulances—140, 167 and 214—and 51 Fd. Hyg. Sec., there were also u/c 25 and 77 M.C.U.s. and 8 M.B.U.

The assault crossing of the River Garigliano and the attack on the hills on the northern bank was made with two brigades up, the third brigade covering the south bank and being used as a reserve. The medical problems were :

- (a) the collection of casualties during the process of forming up on the south bank;
- (b) the collection of casualties from the R.A.P.s. on the north bank;
- (c) the provision of dressing stations on the north bank, crossing on a pack basis, and preparations to hold cases if evacuation was for any reason held up;
- (d) arrangements for conveying patients across the river by means of rafts;

- (e) the provision of a medical post at the bridging site;
- (f) the provision of a mule-borne A.D.S. to accompany a brigade going into the hills.

The river banks about the crossing sites were not approachable for wheeled traffic because of the marshy nature of the ground, and no bridge was to be built in the divisional area; a bridge in a neighbouring divisional area was to be used about D-day+2 to D-day+3. It was decided to free the two field ambulances supporting the brigade groups making the crossing of any responsibility on the south bank. The field ambulance of the reserve brigade established an A.D.S. and small first-aid posts near the river, collected casualties among the assault troops moving up to the river and received cases brought back across the river by raft, evacuating these to the A.D.S.

These arrangements did not work entirely smoothly because of the very great difficulties that made co-operation between the field ambulance on the south bank and the A.D.S. on the north bank difficult.

Dressing stations crossed on a pack basis following close behind the assault brigade H.Q. The R.A.Ps. of assault battalions were accompanied by sections of S.Bs. of the field ambulances. 150 A/T gunners with their officers were placed u/c A.D.M.S. as additional S.Bs. and porters. Jeeps carrying additional equipment and wireless sets were taken across the river on rafts. The left-hand brigade was by D-day+2 in direct touch by one-way bridge with the south bank, but, since this bridge could not be used by day, casualties were brought back by raft. It was almost exclusively used for medical purposes and at most times could be approached by four-wheel-drive ambulance cars and jeeps. A mule-borne pack A.D.S. was prepared to follow up any deep penetration into the hills, but owing to the stubbornness of the enemy resistance this did not occur.

Evacuation from 56th Division converged on an advanced surgical centre formed from a divisional M.D.S., a light section of a C.C.S., three F.S.U.s. and a F.T.U. All urgent surgery was done here. Second priority surgical cases and major sick were sent back to the Corps medical area and the minor sick to a divisional M.D.S. in the same area. A very large number of battle casualties and sick were dealt with, for at times 56th Division had two brigades of 46th Division under command.

Admissions to the A.S.C. January 16–February 5.

Battle Casualties	. 1,687 (1,061 from 56th Division)
Sick.	. . . 2,633 (1,508 from 56th Division)

5TH DIVISION

17th Bde. of 5th Division was set the task of crossing the River Garigliano at its mouth. One battalion was to embark north of Monte Massico and land on the beach north of the river mouth. The remainder

of the brigade was to cross the lower reaches. 13th Bde. was to cross east of Route 7. 15th Bde. was in reserve.

The M.D.S. of 164 Fd. Amb., with 1 F.S.U. attached, opened in houses and tents near the beach at Mondragone. This M.D.S. was to take battle casualties evacuated from the beach north of the river by D.U.K.Ws. and also those evacuated down the coast track from the north bank of the river.

The M.D.S. of 141 Fd. Amb., with 5 F.S.U. and 4 F.T.U. attached, opened in the convent at Carinola. This M.D.S. was to take casualties evacuated down Route 7 from the right-hand brigade. The M.D.S. of 158 Fd. Amb. remained closed at Camp Prisco.

141 Fd. Amb. served 17th Bde. One company was to form a light A.D.S. on the coastal track about a mile south of the river; the other company was split up into three light sections, two of which were to land by D.U.K.W. north of the river and the third was to move with the battalion crossing the lower reaches. It was intended that these three sections should join up near Minturno when this became possible.

158 Fd. Amb. served 13th Bde. A light section was to accompany each of the two assault battalions and two more sections were to follow with brigade H.Q., these sections joining up as soon as possible to form an A.D.S. north of the river. The remaining two companies were to establish a car post on Route 7, about one and a half miles south of the ferry that was to be constructed to replace the blown bridge. The Corps field ambulance (220) was also to form a car post as near as possible to this bridge.

But these plans for the A.D.Ss. were wrecked. The two sections of 141 Fd. Amb. got stranded on a sandbank and the battalion landing on the beach north of the river was caught in a minefield and its casualties were brought back by two L.C.T. An A.D.S. was opened on the coastal track, about half a mile north of the river mouth. Casualties were ferried across the river and brought by jeep to this A.D.S., from which they were evacuated to 164 Fd. Amb. at Mondragone. Two sections of 164 Fd. Amb. joined up to form an A.D.S. on the second day of the battle. Evacuation therefrom was by hand-carriage along a mile and a half track through a minefield and then across the ferry. The car post of 164 Fd. Amb., a mile away from the ferry, collected casualties from the ferry.

On the night of D-day+1/D-day+2, 15th Bde. crossed the river to the east of Route 7 and one company of 158 Fd. Amb. was split up into three sections to accompany the battalions. They succeeded in joining up to form an A.D.S. in a quarry on the lateral road south-east of Minturno. Evacuation therefrom was by jeep and four-wheel-drive ambulance cars to the ferry.

When the bridgehead was secured 201st Gds. Bde. (with 5 Lt. Fd.

Amb.) came under command. The A.D.Ss. in the bridgehead were cleared over the repaired bridge on Route 7.

On January 24, 158 Fd. Amb., with 1 F.S.U., 5 F.S.U. and 4 F.T.U. attached, opened in Calbole to form an advanced surgical centre.

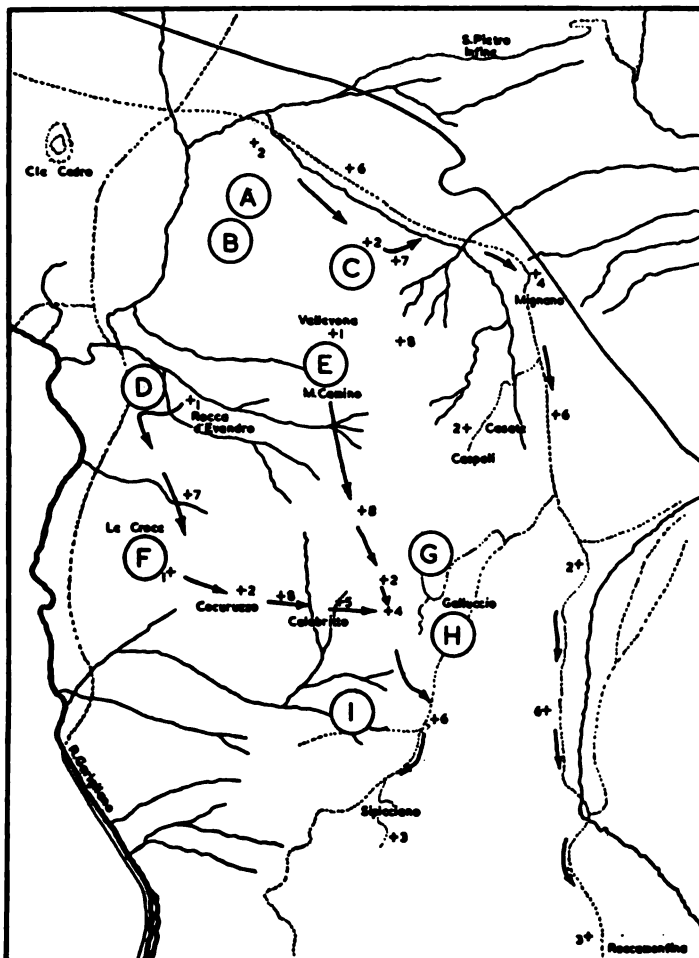


FIG. 46. 46th Division. The Attack on Cle. Cedro. Medical Cover

- A. K.O.Y.L.I.
- B. D.L.I.
- C. Foresters
- D. Hamps.
- E. Hamps.
- 1. R.A.Ps.
- 2. A.D.Ss.
- 3. M.D.S.
- 4. C.P.

- F. Hamps.
- G. Leicesters
- H. Lincolns
- I. Y. & L.
- 5. Jeep Post
- 6 Fd. Amb. Car
- 7. Stretcher jeep
- 8. Hand carry

141 Fd. Amb. dealt with the divisional sick and 164 Fd. Amb. closed in Mondragone.

46TH DIVISION

The locations of the units of this division prior to the attack on Colle Cedro are shown in Fig. 46. The battalions were grouped on the forward slopes of Monte Camino from which the attack was to be launched—on the west side of the mountain covering the river, on the top of the mountain observing the valley and on the south-east slopes of the mountain, at rest. Medical services had therefore to be provided for casualties from every point of the mountain and also during the attack. The most forward R.A.P. at Rocca d'Evandro evacuated to the first A.D.S. at Cocuruzzo by night. Stretcher cases were taken by wheeled stretchers dragged by mules as the path was a good one with a relatively smooth surface. Evacuation had to be carried out by night because in some parts the track was only two thousand yards from the enemy lines and was under direct observation.

From the second R.A.P. at Le Croce evacuation was by hand-carriage to the A.D.S. at Cocuruzzo. All cases were hand-carried from this A.D.S. to a jeep post at Calabritto along a rough track. 32 S.Bs. were required for this part of the evacuation chain. Casualties were then taken by stretcher jeep to an ambulance car post at Saraceni and thence by field ambulance car along the road to the M.D.S. at Sipicciano.

The third R.A.P. was at Monte Camino itself and was evacuated by hand-carriage to an A.D.S. at Mieli. 24 S.Bs. were engaged upon this part of the evacuation chain. From Mieli casualties were then taken by field ambulance car to the M.D.S.

The fourth R.A.P. at Vallevena was evacuated by hand-carriage to the A.D.S. at Casate. 38 S.Bs. were employed here.

The fifth R.A.P. on the forward slopes was evacuated to an A.D.S. on the railway track in the rear of Rocca d'Evandro station by hand-carriage and thence by field ambulance car down the railway track, which had been converted into a road, to the M.D.S. at Roccamonfina. As the road from the M.D.S. at Sipicciano to the C.C.S. at Sessa ran close to the enemy line, this M.D.S. was evacuated to the C.C.S. *via* Roccamonfina.

On the night of January 19/20, two battalions of Hamps. attempted to cross the river at three points. Owing to the fast current and flooding, the assault troops who crossed the river were unable to return. Thus those on the far side could not get back and those on the near side could not cross. The attack failed. Arrangements were made to evacuate casualties to an A.D.S. at San Nicola and thence along a relay chain to the left flank of the mountain to the M.D.S. at Sipicciano.

Concurrently with this attempt to cross the river from Camino, 56th

Division on the left flank made a successful crossing to the south. 46th Division therefore, leaving a skeleton force to hold the mountain, moved south to exploit the success of 56th Division. This exploitation took the form of an advance, on February 10/11, to Suio, Monte Castellucio, Monte Rotondo, Monte Turlito, Monte Iuga, Monte Faito, Monte

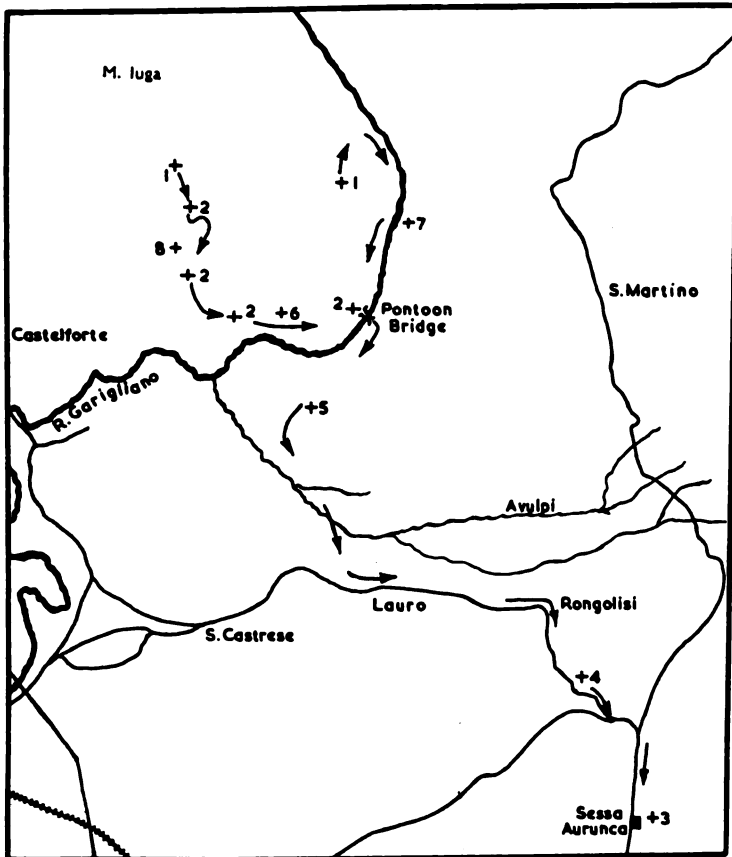


FIG. 47. 46th Division. The Attack on Monte Iuga. Evacuation Chain.

- | | |
|-------------|--------------------------------------|
| 1. R.A.Ps. | 5. Evacuation by field ambulance car |
| 2. A.D.Ss. | 6. " " jeep |
| 3. A.S.C. | 7. " " wheeled stretcher |
| 4. Car Post | 8. " " hand carriage |

Ruffiano and Monte Purgatorio. During this attack 1st Gds. Bde. with 1 Fd. Amb. came under command. These objectives having been taken, no further advances were made by the division and the position at Camino and Faito remained unchanged until the command of the sector passed to 4th Division on March 10, 1944.

Medical cover was gradually built up on the north-west bank of the Garigliano and in the final phase was as shown in Fig. 48.

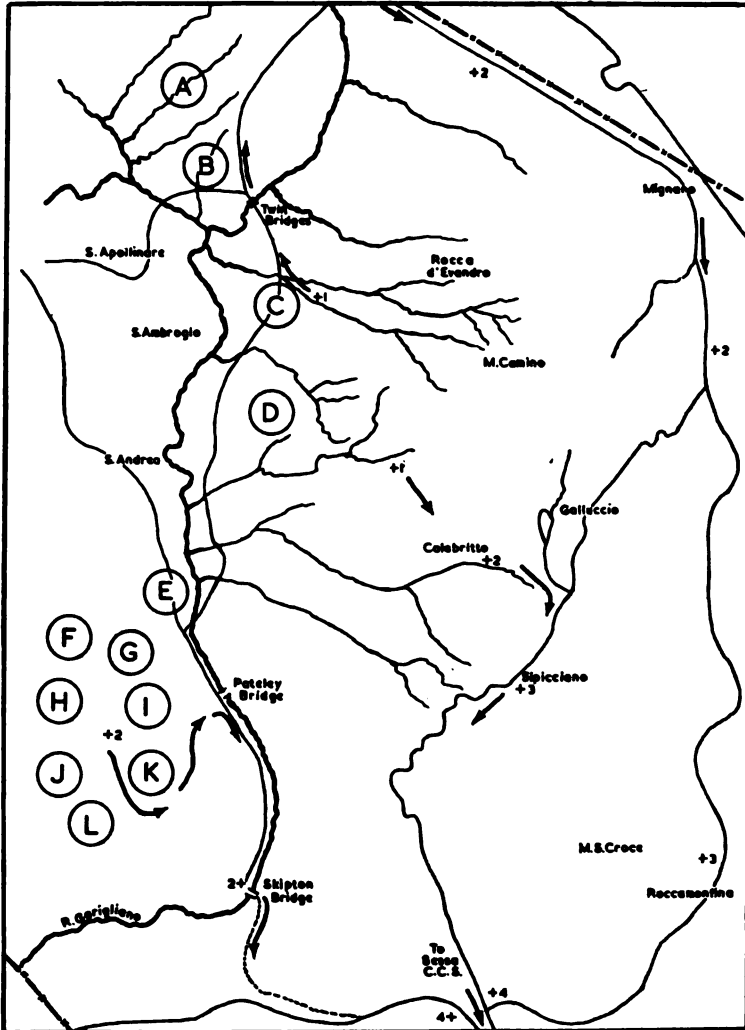


FIG. 48. 46th Division. Medical Cover. February 10-11, 1944.

A. K.D.G.

B. K.D.G.

C. Sqn. Recce.

D. Sqn. Recce.

E. Leicesters

F. Hamps.

1. R.A.Ps.

2. A.D.Ss.

G. Y. & L.

H. Gren. Gds.

I. K.O.Y.L.I.

J. D.L.I.

K. Foresters

L. Hamps.

3. M.D.Ss.

4. Cab-rank M.A.C.

An A.D.S. draining the forward R.A.Ps. was established on Monte Turlito. Evacuation therefrom was by hand-carriage. A second chain of evacuation was to a second A.D.S. on Monte Rotondo and thence, again by hand-carriage, along the slopes of Ruffiano to a third A.D.S. at 'Pateley Bridge'. From this point casualties were evacuated by stretcher jeep to a fourth A.D.S. at 'Skipton Bridge' and thence by ambulance car across the river to the C.C.S. at Sessa. Casualties from the mountain slopes near the river were evacuated down the road by hand-carriage or wheeled stretchers to the third A.D.S. Cab ranks were established at Ponte and Rongolisi.

For the abortive attempt on the part of 46th Division to cross the river the M.D.S. at Sipicciano was transformed into an advanced surgical centre with two F.S.U.s., one F.T.U. and extra S.Bs. from the personnel of 39 and 49 A.M.C.U.s.

The A.D.Ss. were frequently moved, and always on foot, carrying their own equipment. They really acted as large relay posts and resuscitation centres on the long chain of evacuation. These chains could not be maintained by field ambulance transport alone and in the battle for Faito, for example, S.Bs. on the divisional front consisted of one complete field ambulance, including cooks, sanitary orderlies, nursing orderlies and H.Q. staff, with 400 extra porters obtained through A.Q. channels. They consisted of Sikhs, Mussulmen, A/T gunners, Italian military personnel and A.M.P.C.

The jeeps that were used were fitted with stretcher gear. There were three jeeps per field ambulance with three on A.D.M.S. reserve. Each carried two stretchers. Twelve jeeps from the divisional jeep train were also available as required.

In so far as field ambulance cars were concerned, four-wheel-drive ambulance cars were found to be essential and the two-stretcher A.F.S. cars were mostly used.

Casualties admitted to 46th Divisional Medical Units, January–March, 1944

Sick.	Total admissions: 52 officers 2,898 O.Rs.
Battle Casualties	Total admissions: 25 officers 424 O.Rs.

NEW ZEALAND CORPS

Indian 4th Division

The medical units concerned in providing cover were 17, 26 and 32 (Ind.) Fd. Ambs. and 2 (Ind.) C.C.S. On arrival in the Cassino sector, 17 (Ind.) Fd. Amb. opened a divisional M.D.S. at San Pietro on February 10. To each of the brigades one company of the field ambulance was attached. By February 15, 2 (Ind.) C.C.S. had moved forward from Potenza to Prosenza on Route 6, about twenty miles to the south-east of Cervaro. 16 C.G.H. also moved from Potenza to Canello, near Naples, where it opened in the first week of February. A section of this

hospital was attached to 2 B.G.H. at Caserta to deal with Indian patients passing through. 18 M.A.S. moved forward with the division and was located at Cervaro.

On the eve of the first attack the M.D.S. of 17 (Ind.) Fd. Amb. moved from San Pietro to Portella. 26 (Ind.) Fd. Amb. moved to Piedimonte D'Alife to establish a camp hospital in a school building for the retention and treatment of light sick and wounded. Later this unit moved to Baia e Latina, there to organise a 200 stretcher-bed hospital in a row of tenement buildings. Between February 11 and March 31 this M.D.S. treated over 1,000 light sick and wounded, of whom over 700 were returned to their units.

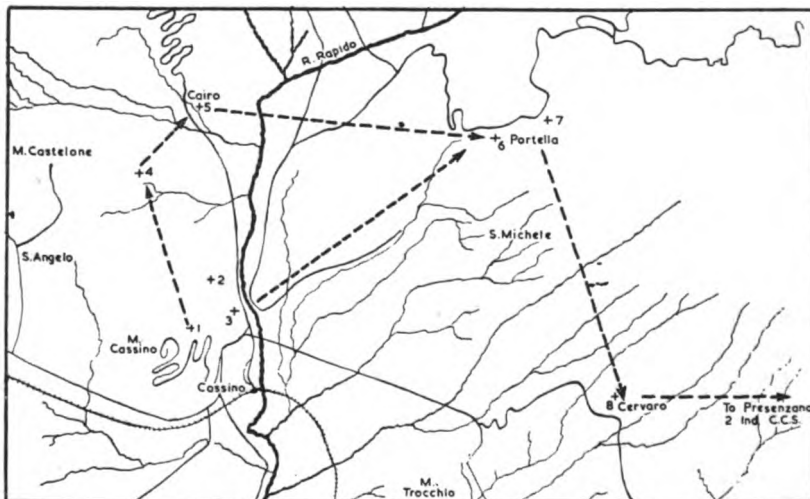


FIG. 49. Indian 4th Division. Cassino. Medical Cover.

- | | |
|---|--|
| 1. Forward A.D.S., 26 (Ind.) Fd. Amb. Feb. 14 | 5. Rear A.D.S. 17 (Ind.) Fd. Amb. Feb. 10-March 28 |
| 2. Forward A.D.S., 26 (Ind.) Fd. Amb. March 16-23 | 6. 17 (Ind.) Fd. Amb. Feb. 17-March 18 |
| 3. C.P. 26 (Ind.) Fd. Amb. March 17-26 | 7. 17 (Ind.) Fd. Amb. March 18-28. |
| 4. Intermediate A.D.S. 26 (Ind.) Fd. Amb. | 8. H.Q. Indian 4th Division
H.Q. 18 M.A.S. Car Post |

In the first attack on Cassino by Ind. 7th Inf. Bde. three A.D.Ss. were established. This unusual number of A.D.Ss. on a single brigade front was necessary for the reason that the only method of evacuation of casualties from the forward positions was by hand-carriage. The furthest forward A.D.S. was established by 26 (Ind.) Fd. Amb. on the track leading to Point 593, about a mile due east of the monastery. The intermediate A.D.S. was established by 26 (Ind.) Fd. Amb. at the base of Monte Castellone. The rearmost A.D.S. was established by 17 (Ind.)

Fd. Amb. in the bombed out ruins of Cairo village. The divisional M.D.S. was located on the divisional axis near the village of San Michele. It had two reception wings working alternately day and night and a large resuscitation centre. To it were attached 28 F.S.U. and a N.Z. surgical unit as well as an Indian dental unit and a resuscitation team. This M.D.S. was organised to deal with a maximum of 400 casualties a day. Its location, however, turned out to be unsatisfactory for the reason that water had to be carried from Portella, about one and a half miles away. At this M.D.S. there was a shortage of ambulance cars, only nine being available for the transportation of casualties to the ambulance car post at Cervaro, about two hours turn-round. There were also a shortage of four-wheel-drive transport. Ambulances of the A.F.S. were attached to the M.D.S., however, and so the shortage was alleviated to a certain extent.

These preparations were all completed by February 12. The nature of the country was such that little or no cover was available for these forward medical units; many of the R.A.Ps. were in full view of the Germans and the siting of medical units in this forward congested area became a problem of very considerable difficulty.

The routes of evacuation were also exposed; the tracks were exceedingly poor, while the roads in the forward areas were very narrow and could be negotiated only by jeep ambulances. The roads to the west of the Rapido crossing were so bad that only four-wheel-drive ambulances were permitted to operate in that area. The main ambulance car-head was located with the A.D.S. in the village of Cairo. Jeep tracks continued from this to the intermediate A.D.S., where ambulance jeep-head was located. From this point a mule track led to the forward A.D.S., about two miles away.

S.B. squads were detailed for the evacuation of casualties to the rear A.D.S. Three companies, one from each of the field ambulances of the division, were detailed as S.Bs. Further S.Bs. were allotted from divisional resources and finally mustered a strength of about four hundred. These were all placed under the command of the officer in charge of the rear A.D.S.

Casualties were evacuated by hand-carriage from the forward A.D.S. to the intermediate A.D.S. and thence by jeep ambulance to the rear A.D.S. From the rear A.D.S. to the M.D.S. of 17 (Ind.) Fd. Amb. evacuation was by four-wheel-drive ambulances. The hand-carries on the evacuation route extended to distances of over four miles over steep gradients made treacherous by the wet and muddy soil and dangerous by constant mortar and sniper fire. Relay posts were established at 200-600 yard intervals along the route. Although this procedure was most expensive in respect of man-power, it did enable the squads to continue working through twenty-four hours with a minimum of rest for days on

end. Maintenance squads with pack mules supplied these men with rations and water. Mules for evacuation were available at all times but the hill tracks were too narrow in places and the risk of the animals being frightened by mortar fire and stampeding over the sheer drops on the hillside was so demoralising a prospect that the mules were never used for evacuation. In the early stages of the battle, the S.Bs. had to work up to as long as ten days without relief. During the closing stages it was possible to introduce a system of twenty-four hours on duty and twenty-four hours off, in respect of relay post personnel, and forty-eight hours on and forty-eight hours off in the case of detachments of medical units. By the end of the first attack the divisional M.D.S. had evacuated 313 casualties to the rear.

When this first attack ended troops still continued to occupy the forward positions and there was a steady stream of about 100 casualties a day from Indian 4th Division until the attack was resumed about a month later. The medical units continued to occupy their battle stations.

For the second attack on March 15, there was no change in the distribution of the forward medical units, save that another A.D.S. was opened on the Cassino-Cairo road by 26 (Ind.) Fd. Amb. and a jeep-head was established on the northern outskirts of Cassino town. During this second attack the evacuation of casualties proceeded smoothly even although at times the numbers involved taxed the resources of these A.D.Ss. to the utmost.

On March 16, the M.D.S., together with a variety of units of all kinds which were clustered round it, was heavily shelled for about ten minutes. About 170 casualties were caused, among them six of the personnel of the M.D.S. itself. As a result of this experience the M.D.S. was moved on the following day to a more secluded spot higher up in the same *nullah*, seven hundred yards east of its previous location.

The A.D.S. of 26 (Ind.) Fd. Amb. on the Cairo-Cassino road served Ind. 5th Inf. Bde. which had relieved the New Zealanders on Castle Hill on the night of March 15th/16th. Casualties were evacuated therefrom to the divisional M.D.S. During the next two days of bitter fighting there was much confusion and casualties were incurred in every part of the battlefield. By the 18th, it had become almost impossible to collect the scattered casualties owing to the confused nature of the fighting. The S.Bs., like everyone else, were now reaching the limit of their endurance.

By mutual agreement, apparently of a tacit variety, it now came to pass that both sides began to evacuate their casualties under the cover of the Red Cross. It can be said of the Germans at Cassino that they never obstructed any *bona fide* evacuation of casualties. But even so, evacuation was indeed a most hazardous enterprise both for the casualty and for the S.Bs. The usual tracks could not be used as they were under

shellfire or were heavily mined. The S.B. squads had to pick their way down steep hillsides, often involving the rope-slinging of the casualties, these being tied to their stretchers with fish-netting.

When on the 20th, 'Hangman's Hill' was completely isolated, evacuation of casualties inevitably ceased. Throughout March 21 and 22 stragglers did manage to reach the A.D.S. through the German lines and on the 22nd the R.M.O. of 1/9th Gurkhas actually penetrated to 'Hangman's Hill' itself. A party was organised to proceed to the hill and the Germans gave them safe passage. A hundred casualties were evacuated on the following day through the N.Z. A.D.S. in Cassino town. Many of them were in a very bad state, having received nothing more than first aid for several days, and in a high proportion of cases their wounds were septic. Casualties continued to pour in until March 26, when Indian 4th Division was relieved.

From February 17 to March 26 the M.D.S. of 17 (Ind.) Fd. Amb. received and evacuated 2,365 casualties, an average of 63 a day. Medical units of the relieving division, 78th Division, began to take over the Indian 4th divisional sector from March 27 and the relief was complete in two days. Thereafter the division concentrated in the Venafro-Prezzenano sector.

During these battles casualties from the M.D.S. were evacuated to 2 (Ind.) C.C.S. at Prezzenano by 18 M.A.S. This C.C.S. was accommodated in a farmhouse and tents, the operating theatre and the acute ward being in the farmhouse and the rest of the accommodation being tented. A F.S.U. was attached to this C.C.S. during this period. Evacuation from 2 (Ind.) C.C.S. was to 16 C.G.H. at Cancellio by ambulance of the A.F.S. A.C.C. From February 17 to March 26 a total of 4,008 cases had been admitted to the C.C.S. From 16 C.G.H. at Cancellio further evacuation was by ambulance train to 14 C.G.H. at Bari and 30 I.G.H. at Taranto.

NEW ZEALAND 2ND DIVISION

When in mid-January Indian 4th Division relieved N.Z. 2nd Division in the Orsogna sector, the N.Z. Division moved to Alife where, on January 17, 6 (N.Z.) Fd. Amb. established a M.D.S. for the holding of divisional sick. With the division 1 (N.Z.) C.C.S., 8 F.S.U. and 102 V.D.T.C. moved to the U.S. Fifth Army front.

The initial task of the N.Z. Corps was to support the continuing American assault on Cassino, it being understood that if the position had not been captured by February 12, the N.Z. Corps would assume responsibility for the sector. By that date the Allies held only a few houses on the eastern outskirts of Cassino town, but to the north U.S. II Corps had reached Point 590 and had captured part of Monte Castellone. Command of the sector therefore passed to the N.Z. Corps.

On February 7, N.Z. 5th Inf. Bde. had gone into the line along the Rapido and Gari Rivers while N.Z. 4th and 6th Bdes. remained in reserve.

2 N.Z.G.H., which had reached Taranto on January 8 and which was having difficulty in finding adequate accommodation in Molfetta, to the north of Bari, was now switched to Caserta alongside 2 B.G.H.

In the U.S. Fifth Army sector there had been far greater destruction of buildings than on the eastern side, and the N.Z. Corps medical units had to resort to the use of tentage, despite the wintry weather with its heavy rain and cold winds. The ground was so thick with troops that the medical units could not disperse their tents.

On February 5 and 6, 4 (N.Z.) Fd. Amb. established a battle M.D.S. in an open field six miles south of Cassino, near the shattered village of San Pietro Infine on Route 6. Roads around it were built by the personnel of the unit with the aid of the divisional engineers. Five tarpaulin shelters, each provided with a base of gravel covered with hay and a canvas floor with more hay, were built and fitted with down-draught wood-burning stoves. The personnel of the unit were accommodated in bivouac tents.

When N.Z. 5th Bde. moved into the line, 5 (N.Z.) Fd. Amb. established a tented A.D.S. near the railway line south of San Vittore and six miles from Cassino itself. The next day 6 (N.Z.) Fd. Amb. moved with N.Z. 6th Bde. and established its A.D.S. in the San Vittore area. 4 (N.Z.) Fd. Amb., with N.Z. 4th Armd. Bde., was in reserve in the vicinity of Mignano.

All these areas were within enemy artillery range and the first casualties were admitted to the A.D.S. of 4 (N.Z.) Fd. Amb. on February 6. They were evacuated to 2 N.Z.G.H. at Caserta, thirty-five miles away. On February 8, 1 (N.Z.) C.C.S. opened at Presenzano, alongside 2 (Ind.) C.C.S., and thereafter during the Cassino fighting New Zealand battle casualties were evacuated from the M.D.S. of 4 (N.Z.) Fd. Amb. to 1 (N.Z.) C.C.S. and New Zealand sick to the M.D.S. of 5 (N.Z.) Fd. Amb. in the neighbourhood of Mignano. Attached to the New Zealand C.C.S. were the surgical team of 1 N.Z.G.H. and 8 F.S.U.

On the night of February 17/18, 28th Maori Battalion crossed the two arms of the Rapido and advanced along the railway embankment. Cassino station was captured, but a vital enemy strongpoint could not be overcome. At 1600 hours on the 18th German armour and infantry counter-attacked and forced the Maoris back over the Rapido.

The first casualties reached the M.D.S. of 4 (N.Z.) Fd. Amb. at 0200 hours on February 18, about three hours after being wounded. By 0800 hours about 70 wounded had passed through. As in the Sangro operations, most of the wounded were wet through below the waist.

They were supplied with battledress trousers, socks and sandals from reserve held by the M.D.S.

Because the C.C.S. was so near and the road to it so good, little surgery was carried out at the M.D.S., which accordingly reverted to its basic function of recording, resuscitation and urgent surgical intervention. Attached to the M.D.S. was 2 (N.Z.) F.T.U., and it became customary to send patients on to the C.C.S. with transfusions running throughout the journey in the ambulance car. The provision of transfusion attachments for stretchers was found to be of great value. 'Schu' mines were the cause of many casualties at this time. The Singer type army tourniquet proved quite unsatisfactory for these cases and circles of tyre tube were applied just above the damaged area so as not to interfere with the circulation at the site of subsequent amputation.

The objectives of the second attack by the N.Z. Division were Cassino town, Castle Hill and the railway station, while Indian 4th Division seized Monastery Hill. This time Cassino was to be approached from the north, taking advantage of the fact that American troops were already holding the northern outskirts.

On the night of February 21/22, N.Z. 6th Inf. Bde. relieved U.S. 133rd Inf. Regt. in the northern outskirts of Cassino. 6 (N.Z.) Fd. Amb. established its A.D.S. near Portella, to the north of Cassino. The rain then intervened to postpone the attack until March 15 when, behind a creeping barrage, N.Z. 6th Inf. Bde. moved forward to capture Point 165. By the end of the day most of the town was in New Zealand hands and only a few isolated strongpoints remained to be overcome. But in the darkness of the rain-filled night the Germans re-occupied many of their positions and created new ones amid the desolation. Supporting arms could not enter Cassino because of the destruction caused by the bombing. Everywhere were great mounds of rubble and deep craters.

During the 16th, a few tanks made their way into the town and on the 17th the railway station was captured. Next day the divisional engineers bridged the Rapido and Point 202 was captured. But the New Zealanders, like the Indians at Point 435, became isolated and had to be supplied by air drop. Under cover of a barrage they withdrew in the early morning of March 25. There was to be no break-through to the Liri valley. On the 26th the N.Z. Corps was disbanded and all formations passed u/c XIII Corps.

The medical arrangements worked smoothly. Physical exhaustion cases became more numerous as the action proceeded. During the Cassino battle exhaustion cases were sent to the M.D.S. of 5 (N.Z.) Fd. Amb. Physical exhaustion cases were classified among the sick instead of among the battle casualties. During March, 158 exhaustion cases, including two officers, were admitted to this M.D.S. Many were quickly returned to their units and of these a number were soon re-admitted.

It was noted that this condition especially affected recent reinforcements.

The medical arrangements were based on estimated casualties of 2,400 within the first fifty-six hours of the second attack, but the total casualties from N.Z. 2nd Division and Indian 4th Division for this period amounted to only 725.

TABLE 26

<i>New Zealand Corps. Cassino. March 15-24, 1944</i>			
Strength.	.	.	.
		N.Z. 2nd Division	19,072
		Indian 4th Division	20,374
		78th Division	18,729
		Corps Troops	8,188
Estimated Casualties	.	2,400 within the first 56 hours	
Actual Casualties during this period:			
March 15	.	N.Z. 2nd Division	82
		Indian 4th Division	81
16	.	N.Z. 2nd Division	103
		Indian 4th Division	231
17	.	N.Z. 2nd Division	118
		Indian 4th Division	110
Evacuated from N.Z. Corps March 15-24			
		Battle Casualties	1,984
		Sick	1,512
Total Evacuations from N.Z. Corps. February 4-March 25, 1944.			
		<i>B.C.</i>	<i>Sick</i>
N.Z. Division		1,345	1,472
Ind. 4th Division		2,722	1,558
British		381	2,142
		4,448	5,172
			9,620
Approximate Wastage from N.Z. 2nd Division. March 16-25, 1944.			
<i>Killed</i>		<i>Wounded</i>	<i>Sick</i>
220		53 officers, 698 O.Rs.	20 officers, 354 O.Rs.
		Total 1,345	

(ii)

Operation 'Shingle'

The landings on the beaches of Anzio and Nettuno, about thirty miles from Rome, were made in association with U.S. Fifth Army's offensive which had been launched on January 15. U.S. VI Corps was instructed to secure its beachhead and thereafter advance to the Alban

Hills. The American component of the assault force consisted of the reinforced 3rd Division, 751st Tank Battalion, three battalions of Rangers and 504th Parachute Infantry Battalion. The British component included the reinforced 1st Division, 46th R.Tks. and 2nd Special Service Bde. (9th and 43rd Cdos.). The second wave was to be wholly American, half of U.S. 1st Armoured Division, 157th R.C.T. of 45th Division and three battalions of corps artillery.

On January 21 the force sailed from Naples. The voyage was uneventful and the convoy of 243 ships with some 50,000 men and 5,000 vehicles aboard was neither observed nor intercepted. The troops began to land at 0200 hours on the 22nd under the cover of a salvo of missiles fired from a rocket ship. The landing was unopposed. U.S. 3rd Division landed about four miles east of Anzio, the birth place of the Emperor Nero and now a second-rate seaside resort. The Rangers and the Parachute Infantry landed on a little beach near Anzio to secure the harbour and 2nd Inf. Bde. of (Br.) 1st Division with the S.S. Bde. went ashore six miles north-east of Anzio from whence they were to strike eastwards to the road running inland from Anzio and block it. The force was to consolidate a bridgehead seven miles deep, fifteen miles wide and with a perimeter of twenty-six miles with the harbour of Anzio as its hub, and thereafter press inland.

The plain of Anzio stretches inland for some twenty miles to the Alban Hills which rise abruptly in a series of slopes to reach a height of about 3,000 feet. South-east of Anzio the plain merges into the flat farmlands reclaimed from the Pontine marshes; north-west it swells and descends in wooded, undulating fields that extend to the River Tiber. Immediately behind Anzio there was a five-mile belt of low scrub, divided by the road that runs from Anzio to join Route 7 near Albano. It was in this belt of scrub that the first positions and dumps were established. West of the Anzio-Albano road the coastal plain was intersected by many deep gullies which provided serious obstacles to armour on the left flank. East of this road were fields extending north-east to the town of Cisterna on the railroad. The avenue of advance was about ten miles wide from the Anzio-Albano road to the end of the Pontine marshes bordered by the Mussolini Canal.

Shortly after midday on the 22nd there was a continuous perimeter round the landing area. Anzio and Nettuno were securely held and by nightfall the little port of Anzio was open and the channel swept.

January 23rd was spent in consolidating the area within the perimeter. German forces were moving towards the bridgehead from the north, the south and the east and the Luftwaffe bombed the ships lying off the port. Two hospital carriers, *St. David* and *Leinster*, fully lighted, were attacked and the former sunk.

On the 24th and again on the 26th a gale impeded the unloading of

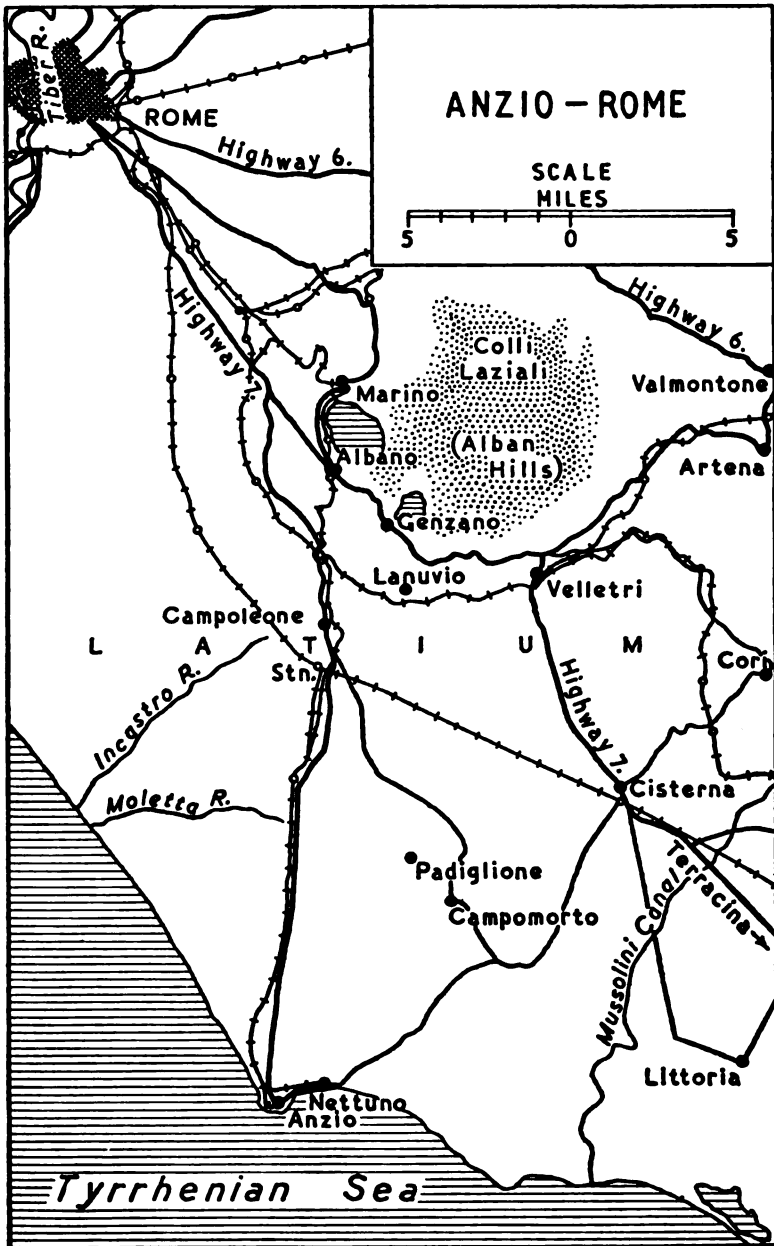


FIG. 50. Anzio-Rome.

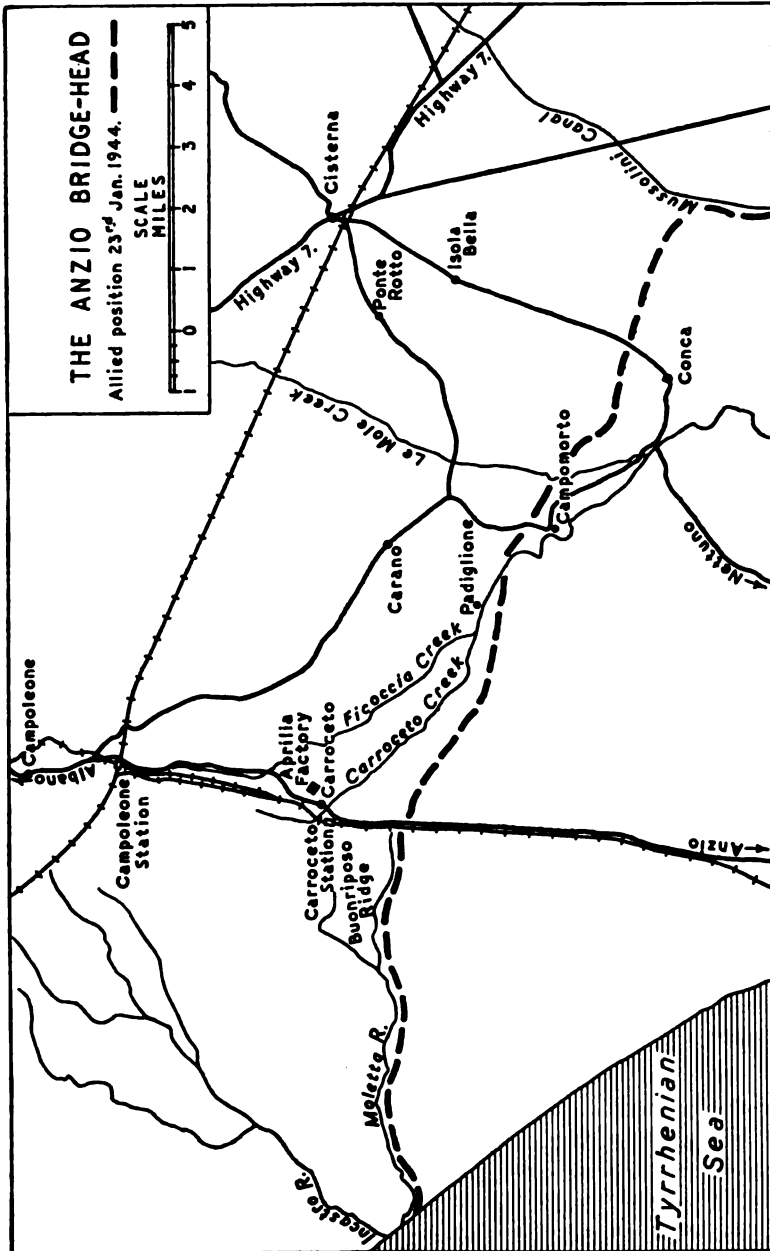


FIG. 51. The Anzio Bridgehead.

the L.C.T. and Liberty ships and tested to the full the seaworthiness of the D.U.K.Ws., of which no less than 400 were in use. By the 29th there were 70,000 men, 508 guns, 237 tanks and 27,000 tons of stores ashore and by this time the German guns and aircraft were harassing shipping and the harbour with increasing severity.

The Germans had decided that their lines of communication from the Gustav Line were in no great or immediate danger and so took no steps to prevent the steady build-up of the Allied strength in the bridgehead. They had not withdrawn from the Gustav Line and there was no indication that they thought of doing so. Since the advance of U.S. VI Corps could not be synchronised with a German withdrawal from the Gustav Line, the Corps commander decided to consolidate his position and to reconnoitre along his main axes of advance towards the intermediate objectives of Cisterna and Campoleone.

On the afternoon of January 24, 2nd Bde. of 1st Division had won in stiff fighting the Buon Riposo ridge overlooking the Molletta River and so secured the division's left flank. 24th Guards Bde. then led the advance on Campoleone. The first opposition to be met was in the factory buildings at Aprilia, a newly built model village settlement. The factory was stormed on the 25th and a strong counter-attack repulsed.

The American advance towards Cisterna began at dawn on January 25. During that day and on the two following increasing opposition was encountered and the advance was halted some three miles short of Cisterna.

Preparations were made for a full-scale attack to be launched on January 30. The plan was as follows: U.S. 3rd Division would get astride Route 7 and strike north-west towards Velletri; in the centre Br. 1st Division would advance on Albano to seize the slopes above Albano and Genzano, and on the left U.S. 1st Armoured Division would attack the high ground above Marino on the western flank of the Alban Hills.

On the flanks of the bridgehead Br. 1st and U.S. 3rd Divisions had been relieved by U.S. 45th Division and in the centre Br. 1st Recce. Regt. had taken over from the Rangers. From January 27 to 30, 1st Division had been patrolling and regrouping. 24th Guards Bde. went forward to positions covering Carroceto and Aprilia from about a thousand yards to the north, while 3rd Bde. moved into the position in Aprilia. Before midnight on the 29th the Guards launched a preliminary attack but were sharply repulsed. A company of K.S.L.I., with tanks of 46th R.Tks., restored the situation. By nightfall 1st K.S.L.I. and 1st D.W.R. were digging in on the high ground south of the Campoleone railway line. On the 30th, 2nd Foresters, with tanks of 46th R.Tks., resumed the attack to fight desperately to get across the railway embankment. Ultimately the attempt to reach Campoleone had

to be abandoned for U.S. 1st Armoured Division had also been thwarted in its attempt to take up the advance on the left of the British attack. Their tanks were either bogged down or else they capsized into precipitous gullies.

The American attack towards Cisterna was led by 1st and 3rd Rangers Battalions but these were ambushed and destroyed half a mile from Cisterna. 3rd Bn. of U.S. 15th Infantry took the village of Isola Bella and 1st Bn. advanced a mile and a half. On the left, attacking northward to cut Route 7 above Cisterna, U.S. 7th Infantry got to within a mile of Cisterna, but no further, and it became apparent that the place could not be taken. Campoleone and Cisterna were not outposts of the German line; they were bastions of the line itself. This line had not been broken and German reinforcements were arriving in increasing numbers. The bridgehead was so small that any part of it could be reached by the German guns. Should a German attack break the perimeter, its momentum might easily carry it to the sea and split the defence into two.

On February 1, General Alexander advised a continuation of the offensive on a limited scale to extend the area as far as the River Incastro and to include Cisterna and Campoleone, but as this had been shown to be impossible the troops prepared for defence within their existing lines. Indeed it was becoming doubtful whether the bridgehead that had been pushed some eighteen miles inland on the Anzio-Albano road and fifteen miles towards Cisterna could be held in its entirety.

Hitler had ordered the elimination of what he described as the 'abscess' south of Rome. The attempt to do so fell into three phases: (1) a local attack on the British salient at Campoleone; (2) a full-scale assault down the Albano-Anzio road to reach the sea; and (3) an attack from Cisterna to reach the Mussolini Canal.

The first attack began on February 3. 1st Division's salient was about four miles deep. In its apex was 3rd Inf. Bde.; on the left flank 24th Guards Bde. lay in front on the Buon Riposo ridge; on the right were 6th Gordons and 1st Royals of 2nd Inf. Bde. with part of 1st Recce. Regt.

A small attack on the tip of the salient in the afternoon was repulsed. Towards midnight the base was heavily shelled and in the west German infantry began to filter between the Scots and Irish Guards. A little later 2nd Bde. was attacked. German tanks penetrated deeply into the salient. The newly arrived 168th Bde. of 56th Division, supported by tanks of 46th R.Tks., counter-attacked and 3rd Bde. was able to withdraw to positions covering Carroceto. The salient had been erased but its defenders had not been destroyed. The casualties were very heavy, however, for the killed, wounded and missing numbered 1,400.

For three days following the elimination of the Campoleone salient, the Germans made no large-scale attack and during this time the Allies

strengthened their defences. The flanks of the bridgehead on the Molletta River and the Mussolini Canal were easily defensible. U.S. 45th Division was responsible for the first, the newly arrived 1st Special Service Force for the second. In the middle sector were Br. 1st Division on the left and U.S. 3rd Division on the right, while U.S. 1st Armoured Division and U.S. 45th Division provided a corps reserve.

The German guns were now continuously active and the Luftwaffe made very frequent raids, in which the medical units as well as ammunition dumps suffered.

In the late evening on February 7 both flanks of 1st Division's sector were heavily shelled and before midnight there was heavy fighting along the left front. The Buon Riposo ridge was lost and the German infantry attempted to thrust therefrom to the road and to break through to Carroceto. On the right the L.I.R., 10th R. Berks. and a squadron of 1st Recce. Regt. were attacked but stoutly held on to the lateral road from Aprilia to Padiglione. A counter-attack by U.S. 504th Parachute Infantry and tanks of 46th R.Tks. to support the hard-pressed Guards Bde. was unsuccessful, as was also an attempt to recapture the Buon Riposo ridge by 3rd Bde. On the 9th the factory was lost. U.S. 1st Armoured Division counter-attacked towards the ridge and up the Albano road but made little progress. A strong infantry attack upon the Guards Bde. area was repulsed. As the day drew to its close the battle died down for both sides were nearing exhaustion. 1st Division had been reduced to half its strength. U.S. 108th Infantry relieved 2nd Bde. 168th Bde. held the right flank east and south of Aprilia; 3rd Bde. was along a large ravine south of the Buon Riposo ridge and the Guards still covered Carroceto.

At midnight German armour and infantry attacked the Guards Bde. positions and by 0500 hours on the 10th the situation had become exceedingly critical. The Strategic and Tactical Air Forces and the corps artillery concentrated their attention upon the German assembly areas while 1st Division reorganised. 3rd Bde. took over the much reduced divisional sector from just south of the Buon Riposo ridge to Carroceto and 168th Bde. was relieved by a battalion of U.S. 179th Infantry. The Guards Bde. went into divisional reserve. U.S. 45th Division and U.S. 1st Armoured Division prepared to counter-attack on the 11th.

This counter-attack regained none of the lost ground and for the next three days there was no major action, although the Air Force continuously attacked the German positions and communications. 167th Bde. of 56th Division reached the bridgehead and, being relieved, 1st Division passed into corps reserve on February 15. Its sector was taken over by 56th Division on the left and U.S. 157th Infantry of U.S. 45th Division on the right.

At 0600 hours on February 16, the strongly reinforced Germans renewed the attack. On 56th Division's front where 167th Bde. was in the line they made considerable progress, but a counter-attack by 168th Bde. restored the situation. In U.S. 45th Division's sector, after exceedingly bitter fighting, the Germans succeeded in advancing about a mile on a front of two and a half miles but failed to enlarge their salient. They were, however, dangerously near the bridgehead's final line of defence. 1st Division, from reserve, was brought forward to hold a two mile sector along the line of the 'flyover' bridge that crossed the Anzio-Albano road between 56th Division on its left and U.S. 179th Infantry on its right. A counter-attack by U.S. 179th Infantry and 159th Infantry failed in the early morning of February 18.

At dawn on this day the Germans broke through the centre of U.S. 45th Division's front east of the Albano road and were not stopped until they had reached the final positions of the 1st Bns. of U.S. 179th and 180th Infantry and of the 1st Loyals of 56th Division. All through the day the fighting continued while the very numerous Allied guns found repeated targets in the large reinforcements of German infantry that were advancing. Between 2100 and 2200 hours the fighting died down and the Germans began to withdraw.

On the 19th the Germans made their last serious effort to break through to the sea and the Loyals and 1st Bn. of U.S. 179th Infantry bore the brunt of the fighting. They could not be dislodged. An American counter-attack in divisional strength made good progress up the road from Campomorto to reach its objective at the road junction south of Aprilia and it became manifest that the bridgehead was safe. The tremendous fire-power of U.S. VI Corps and the numerical superiority of the Allied Air Force had turned the German salient into a death-trap for tanks and infantry. From February 16-20, U.S. VI Corps had suffered some 5,000 casualties; within the bridgehead there was no safety, no quiet, but nevertheless the morale was high for victory was in sight.

The Germans still continued to press against the perimeter but U.S. VI Corps easily beat off their small, if persistent, attacks and regrouped. 1st and 56th Divisions took over the line from the western shoulder of the German salient to the coast. By February 25, 24th Guards Bde. was little more than half its proper strength, 168th Bde. a half, 167th and 169th Bdes. a third. But 18th Inf. Bde. of 5th Division now arrived.

56th Division attempted, on the night of February 21, to relieve 2nd Bn. of U.S. 157th Regt. which, though isolated during the fighting at the western shoulder of the salient, had held out for several days. 2/7th Queens reached them but in turn were cut off and suffered very severely in fighting their way out.

At dawn on February 28, the Germans launched a strong attack

against the sector held by 10th R. Berks. and 1st Lond. Scots., but were repulsed. Another attack on U.S. 3rd Division's front was likewise beaten off. On the 29th, U.S. 3rd Division was again attacked and again the attack was sternly repulsed.

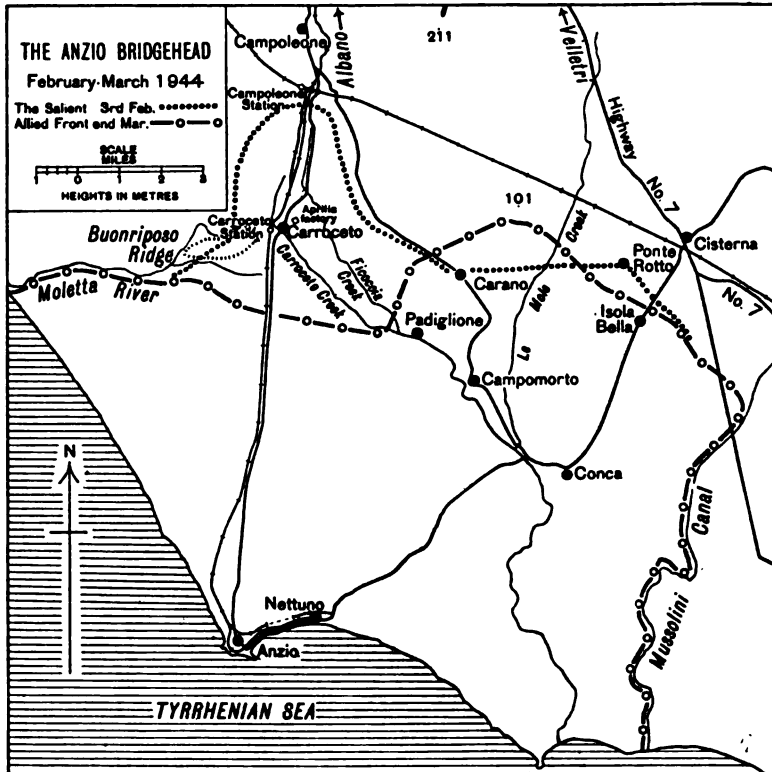


FIG. 52. The Anzio Bridgehead. February-March 1944.

On March 2, the Allied Air Force severely bombed the German positions and, on the 3rd, U.S. VI Corps went over to the offensive. Two R.M. Commandos and later 5th Division arrived and made small gains on the road to Ponte Rotto and near Isola Bella. In mid-March 18th Bde. undertook a successful operation to improve the position immediately west of the Albano road and a few days later 6th Seaforth and 9th Cdo. secured the ground up to the line of the river.

The battle of the bridgehead was over. The Germans were content to contain the bridgehead for as long as might be possible. Its defenders waited for the Allied advance through the Liri valley when, at the appropriate moment, they would break out and cut the Appian Way north of Cisterna. This was not to happen until late in May.

Strength of British Force at Anzio

Number of British troops in initial Force (January)	. 17,000 (approx.)
Average number of troops during February	. . . 26,490
Average number of troops during March	. . . 35,868

Medical Units

With Assault Force. 1st Division	. 2 Fd. Amb. 3 Fd. Amb. 137 Fd. Amb. (Gds. Bde.) 18 Fd. Hyg. Sec.
Non-divisional Medical Units	
u/c 3rd Beach Group	. . . 3 F.D.S. 36 F.S.U. 10 F.T.U.
u/c U.S. VI Corps	. . . 12 F.T.U. (Blood bank) 2 C.C.S. + extra surgeon and O.R.A.
u/c 1st Division	. . . 23 F.S.U. 485 A.F.S., A.C.C., two sections
January 31st onwards—56th Division	140 Fd. Amb. 167 Fd. Amb. 214 Fd. Amb. 51 Fd. Hyg. Sec. 10 F.S.U. (attached 2 C.C.S.) 4 F.T.U. (attached 15 C.C.S.) Improvised surgical team
February 8	. . . . . 15 C.C.S., with extra surgeons, anaesthetist and O.R.A.
February 16	. . . . . 3 F.D.S. left beachhead
March 7 onwards—Relief of 56th Division by 5th Division	. . . . . 141 Fd. Amb. 158 Fd. Amb. 164 Fd. Amb. 25 A.M.C.U.
March 26	. . . . . Relief of 15 C.C.S. by 21 C.C.S. Relief of 36 F.S.U. by 3 F.S.U. Arrival of 5 F.S.U. Relief of 12 F.T.U. by 1 F.T.U.

Distribution of F.S.U.s. and F.T.U.s., March 31

2 C.C.S.	21 C.C.S.
10 F.S.U.	3 F.S.U.
25 F.S.U.	5 F.S.U.
10 F.T.U.	4 F.T.U.

MEDICAL COVER (BRITISH COMPONENT)

Medical planning for Operation 'Shingle' was carried out by A.D.M.S. 1st Division. A.D.M.S. British Increment, U.S. VI Corps,

A.D.M.S. British Increment, U.S. Fifth Army, Surgeon U.S. Fifth Army and D.D.M.S. A.F.H.Q. (Adm. Ech.) were all consulted.

It was agreed that U.S. and British casualties should be evacuated to Naples in British hospital carriers, on a daily programme to begin with and later on demand by U.S. Fifth Army. The less serious casualties were to be evacuated in returning L.S.T.

From D-day, January 22, to D-day+2, 2 Fd. Amb. provided the main operational M.D.S. and evacuated casualties to 3 F.D.S. These units were in close proximity to each other in the original beach maintenance area. 25 and 36 F.S.U.s., in conjunction, formed an operating centre to deal with Priority I cases and as many of the remainder as possible. Evacuation by hospital carrier began on D-day+1. On D-day+2 2 C.C.S. opened in Anzio and received all British casualties. Both F.S.U.s. and 10 F.T.U. were attached to this C.C.S. to augment its surgical facilities. 3 F.D.S. moved to the Marina Hospital in Anzio to receive minor sick and to act as a casualty embarkation centre u/c X Corps. 12 F.T.U., landing on D-day+1, was attached to U.S. 33 Fd. Hosp. for instructional purposes by request of the Surgeon U.S. Fifth Army.

To cover the advance of 1st Division (24th Gds. Bde.) up the Anzio-Albano road on January 25, 137 Fd. Amb. opened an advanced A.D.S. and an operational M.D.S. The M.D.S. of 137 Fd. Amb. remained open in its original location to receive 'exhaustion' cases. 3 F.D.S. received minor sick. There was a further move forward by 3rd Inf. Bde. on January 30, when 3 Fd. Amb. established an advanced A.D.S.

Evacuation from R.A.P.s. was usually by ambulance car. In a few instances in the original beach sector, where cross-country evacuation had to be adopted, jeeps fitted with two-stretcher gear were used. In two instances, for a limited period, relays of field ambulance S.Bs. were used to hand carry over difficult country. Evacuation from M.D.S. to C.C.S. was carried out by ambulance cars from divisional resources. No M.A.C. cars were landed, but ten A.F.S. A.C.C. cars were allotted to the division and were landed on D-day+1. These cars, together with the twenty-four divisional ambulance cars, proved sufficient for evacuation from forward areas to C.C.S. Evacuation from C.C.S. to port was by extra ambulance cars supplied from X Corps reserve.

On January 29, 2 C.C.S. moved out of Anzio to the medical area, two miles up the Anzio-Albano road.

With the arrival of 56th Division in the beachhead there were two infantry divisions now operating in this area. To all intents and purposes there was only one main road which served both. In the first part of the month formations were disposed in depth rather than in breadth, and this made the normal practice of an A.D.S. behind each brigade, evacuating back to one M.D.S., completely impossible. North of Carro-

ceto in the early part of the period there was one brigade at the tip with a brigade (or part of a brigade) on each side of the salient. To have established three, or even two, A.D.Ss. in such a layout would have been superfluous.

One field ambulance was given the task of establishing a divisional A.D.S., tented, sandbagged and in a gully, at the base of the salient. At one time no fewer than eight battalion R.A.Ps. from three separate brigades were being evacuated to this A.D.S. The problem of control of evacuation from these R.A.Ps. to the A.D.S. was solved by making the officer commanding the field ambulance in support of each particular

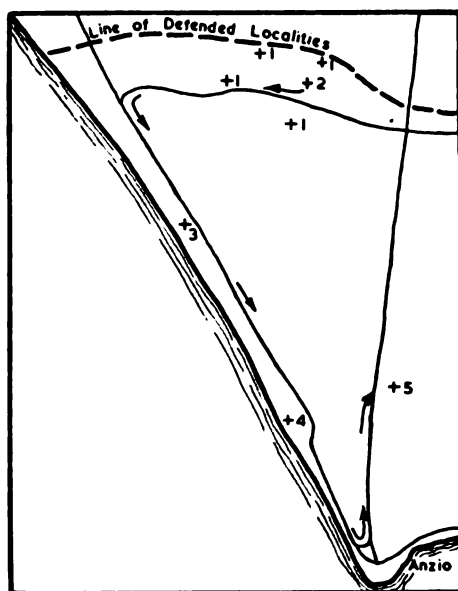


FIG. 53. 56th Division. Anzio. Evacuation Chain.

- | | |
|-------------------|-------------------------------|
| 1. R.A.Ps. | 4. M.D.S. 214 Fd. Amb. |
| 2. Forward A.D.S. | 5. Corps Medical Area C.C.Ss. |
| 3. Staging A.D.S. | |

brigade responsible for ensuring smooth evacuation from his own brigade R.A.Ps. Because of minefields the only route of evacuation was by a lateral road in full view of the enemy. To begin with, therefore, casualties were held in the A.D.S. during the day and brought further back by night. Later, however, it was found that the Germans would permit ambulance cars to proceed unmolested to the R.A.Ps. and to the A.D.S. and so evacuation was carried out by day. Ambulance cars from the field ambulance affiliated to the brigades were attached to the respective R.A.Ps., with the necessary number of 'shuttle' cars at the A.D.S. Forward car control was carried out from the A.D.S. One field

ambulance was detailed to establish a link between A.D.S. and M.D.S. and provided the ambulance cars and sited car posts for that purpose.

This scheme worked, and continued to work, extremely well, being obviously much more practicable than making the O.C. divisional A.D.S. responsible for controlling evacuation from as many as eight battalion R.A.Ps.

There was really need for only one 'battle' M.D.S., at first formed by a field ambulance of 56th Division and later run by 2 Fd. Amb. of 1st Division. Two M.D.Ss., with the channels of evacuation and roads as they were, would have been redundant. The remaining M.D.Ss. were therefore used for retention of sick, minor wounded and exhaustion cases. This one 'battle' M.D.S. was sited close to the C.C.Ss. (2 and 15). All cases from both divisions were received at this M.D.S., triage carried out and the casualties sent direct to the appropriate department in the C.C.S. then receiving. Distances to the extreme limits of the beachhead were short and it was unsafe and unnecessary to site a M.D.S. further forward. This solution of combining resources of M.D.S. and C.C.S. saved both man-power and ambulance cars.

The beachhead was so small and roads and tracks so few that the siting of even A.D.Ss. required close liaison between the respective A.Ds.M.S. Often one road or track was used by a brigade, or brigades, from each division and it was obviously more economical to site only one A.D.S. from one or other division to evacuate casualties from both formations.

The greatest use was made of plasma transfusion at forward levels. All A.D.Ss. were giving a considerable number of transfusions, which were continued by a specially trained orderly accompanying the casualty all the way down to the M.D.S. Many lives were saved in this way. Certain R.A.Ps., from which evacuation was possible only by night and at which casualties had to be held for several hours, were also issued with blood plasma for use in suitable cases.

Whenever possible evacuation from R.A.Ps. sited in gullies or behind embankments was carried out by ambulance cars. In certain sectors, owing either to track conditions or the operational situation or to both, this proved impossible. In such cases either jeeps (with two-stretcher gear) from field ambulances were utilised or field ambulance S.Bs. were attached, as necessary, to the R.A.P. in order to hand-carry casualties back to the nearest point which a wheeled vehicle could approach.

A.D.M.S. 56th Division records that the Germans showed every respect for the Red Cross. On several occasions R.A.Ps. were visited by German patrols, but the staff and patients were left unmolested. On one occasion such a patrol borrowed an ambulance car to take a wounded P.o.W. back to their lines. It was returned in due course.

The operation demonstrated the necessity for planning for an ample

supply of tentage to be brought over in the early stages. Tentage for the reception and retention of minor sick from a division, and to accommodate at least 400 sick, should be allowed for. 56th Division managed to take with it seven store tents and about eighty 160 or 180 lb. tents distributed among its medical units, in addition to its tentage on G.1098 scale. These tents proved to be exceedingly valuable. Without them it would have been necessary to evacuate great numbers of minor sick by sea to Naples, to cause congestion there and to waste much man-power.

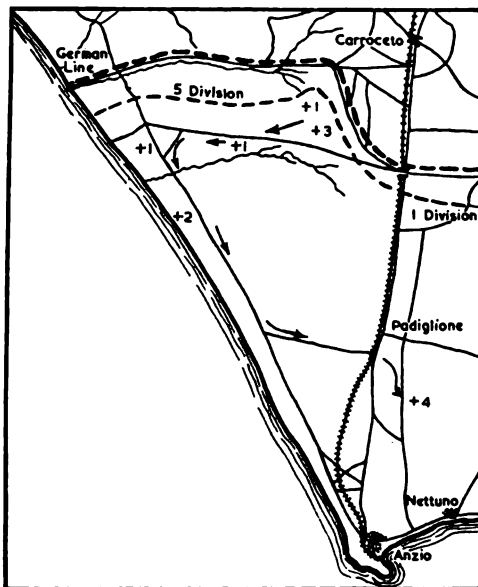


FIG. 54. 5th Division. Anzio. Evacuation Chain.

- | | |
|------------|-----------------|
| 1. R.A.Ps. | 3. C.P. |
| 2. A.D.S. | 4. Medical Area |

On March 11, 56th Division left the beachhead and was replaced by 5th Division. In the main the only resultant change in policy was that 5th Division also opened a M.D.S. in the medical area to act as a 'battle' M.D.S. The field ambulances now worked in pairs with the two C.C.Ss. 2 Fd. Amb. (1st Division) received from 2400-1200 hours and evacuated into 2 C.C.S. and 158 Fd. Amb. (5th Division) received from 1200-2400 hours and evacuated to 15 C.C.S. This procedure worked very satisfactorily and allowed the field ambulances, as well as the C.C.Ss., an opportunity to get some period of rest in the twenty-four hours.

One A.D.S. in a house on the coast road served the whole divisional front. On the lateral, in a gully, was a collecting post where blood and plasma were available. Ambulance cars were permitted by the Germans

to move along the lateral road, everywhere in full view and constantly under fire, to collect casualties from the collecting post. On reaching the medical area casualties were admitted to the C.C.S., a clerk of 158 Fd. Amb. recording them as admissions to divisional field ambulances and as immediate transfers to the C.C.S.

By the middle of March, 137 Fd. Amb. (1st Division) was holding stretcher accommodation for 240 sick, while 3 Fd. Amb. (1st Division) held similar accommodation for 200 exhaustion cases and sick. The average daily number of sick and exhaustion cases held in field ambulances since they opened in the beachhead was 254, the maximum total in one day being 420. The bedstate allowed for a holding policy of up to seven or eight beds. Evacuation from 137 and 3 Fd. Amb. was direct to hospital ship or L.S.T. and not through a C.C.S.

The medical area lay on sloping fields about three hundred yards off the right-hand side of the main Anzio-Albano road, about three miles from the shore. About two hundred yards to the north of it was the British reinforcement and reception area in a dense tangle of low scrub. Away to the right were ammunition dumps.

The experience of 15 C.C.S. in this medical area was representative of that of all the medical units that served therein. On its arrival on February 8 its tents were erected alongside those of 2 C.C.S. Within an hour and a half its reception and preparation wards were full and its operating theatre in use. The surgeons were called upon to deal with men with multiple wounds received on the average seven hours before and soaked to the skin. They were reinforced on February 10 by a surgical team from the hospital carrier *St. David* which had been bombed and sunk off Anzio on January 22, and later by 2 F.S.U. All through the 11th all three teams worked without pause as the heavy rain of the gale that was raging seeped through the junctions of the brigaded E.P.I.P. tents. In spite of its many stoves the resuscitation tent never became really warm because of the universal wetness. When the weather improved aerial activity quickened, to cause much anxiety among the patients and much inconvenience to the staff. On February 15 it was freezing hard and on this day 15 C.C.S. received a direct hit and several R.A.M.C. orderlies were killed or wounded. So the unit began to sink its tents. On February 16, the busiest day so far, the surgeons operated continuously throughout long spells of aerial bombardment, during which large numbers of anti-personnel bombs were distributed throughout the medical area. On the 19th this aerial bombardment became further intensified and large fires in the port area and among the ammunition dumps lit the dark vault of the sky, from which hung the many menacing flares that guided the German pilots to their goals. It was on this day that the Q.A.I.M.N.S. personnel, the matron and seven sisters, of the unit arrived. Those of 2 C.C.S. had

been on the beachhead for a week already, while the nurses of the U.S. medical units in the Nettuno medical area had landed on D-day itself. 180 lb. tents were promptly erected for them and pits dug for their beds. Slit trenches with sandbagged roofs were also provided for their reception. The presence of these women and the work they did resulted immediately in greatly improved standards of the medical care that was offered to those so greatly in need of it.

TABLE 27

Anzio. British Component. Casualties. January–March 1944

Killed	1,308
Wounded	6,125
Missing	5,510
Non-battle casualties	5,698

 18,641
Admissions to British Medical Units. January 29–March 3, 1944

<i>Week ending</i>	<i>Battle Casualties</i>	<i>Sick</i>
February 4	1,222	841
11	1,006	949
18	787	466
25	1,188	739
March 3	710	865
	<hr/> 4,913	<hr/> 3,860

Evacuation from Beachhead. January–March 1944

January 22–31	811
February 1–29	4,347
March 1–31	3,474
	<hr/> 8,632
Average daily evacuation	123

 EIGHTH ARMY MEDICAL ARRANGEMENTS.
 DECEMBER 1943–MARCH 1944

The turn of the year saw the Canadian Corps medical units preparing to move to a concentration area near that of Canadian 5th Armd. Division. By January 19, 5 (Cdn.) C.C.S. was open in Corato, 8 (Cdn.) F.D.S. was open in Mariotta and 16 (Cdn.) F.D.S. in Toritto.

The new year was heralded by the worst storm thus far experienced. All the bridges across the Sangro were rendered unserviceable. But since the weather limited all operational activity casualties were not numerous

and forward medical units were not overtaxed even though evacuation had to be discontinued for the time being. To make matters worse, the railway bridge over the Fortore was badly damaged by floods on January 2, so that ambulance trains could get no further forward than San Severo. It became necessary therefore to increase the number of ambulance cars at Termoli and for one ambulance train to run daily from San Severo. The medical units in Campobasso were required to hold as many of their cases as possible. Then, to crown all, snowfalls blocked the Campobasso-Termoli road. Evacuation from Campobasso had, therefore, to be *via* Lucera to Foggia. A staging post was established at Volturara. It was not until January 16 that rail evacuation from Termoli was reopened and not until the 26th that ambulance trains could reach Vasto.

Between January 9-15, 5th Division passed from Eighth Army to U.S. Fifth Army and with this division went: 15 C.C.S., 1 and 5 F.S.U.s., 4 F.T.U., 138 M.D.U., 74 and 75 A.M.C.U.s.

On January 10, 26 F.S.U. moved from 4 (Cdn.) C.C.S. to 5 C.C.S. at Vasto and 29 F.S.U. was transferred from 5 C.C.S. to 78th Division. The attachment of a F.S.U. to this division was made necessary for the reason that at this time heavy snowfalls made evacuation from the M.D.Ss. impossible.

On January 16, 50 B.G.H. relieved 18 and 19 C.C.Ss. in Termoli. 18 C.C.S. moved to Larino and remained closed. 19 C.C.S. replaced 15 C.C.S. at Campobasso.

Then N.Z. 2nd Division left Eighth Army during January 16-21. With this division went: 1 (N.Z.) C.C.S., 1 (N.Z.) F.S.U., 1 (N.Z.) F.T.U. and 8 F.S.U.

On January 21, 4 (Cdn.) C.C.S. moved from Torremaggiore to Vasto in place of 1 (N.Z.) C.C.S. A detachment of 3 (Pol.) C.C.S. was now attached to 7 C.C.S. at Campobasso to deal with Polish casualties. Evacuation of these was by road to 50 B.G.H. at Termoli and thence by rail to 3 Pol.G.H. at Taranto.

On the night of January 31/February 1, Canadian I Corps took over from V Corps in the Orsogna sector. Under command Canadian Corps at this time were Canadian 1st and Indian 8th Divisions. On February 8, Canadian 5th Armd. Division relieved Indian 8th Division in the line. During the following five weeks, while Canadian I Corps functioned as such on the Ortona front, no major operation occurred, though throughout the period there was constant offensive patrolling.

The medical arrangements in connexion with Canadian I Corps at this time were as follows:

Canadian 1st Division

5 (Cdn.) Fd. Amb. remained open in Ortona.

9 (Cdn.) Fd. Amb. assisted 5 (Cdn.) Fd. Amb. whenever required.

- 2 (Cdn.) F.D.S. continued to form the parent unit of the advanced surgical centre in San Vito until February 22; after which:
- 8 (Cdn.) F.D.S. replaced 2 (Cdn.) F.D.S. and the advanced surgical centre passed under Corps control.
- 4 (Cdn.) Fd. Amb. remained in San Vito, dealing with minor sick, exhaustion and V.D. cases. It became a corps medical centre early in February.

Canadian 5th Armd. Division

- 24 (Cdn.) Fd. Amb. established an A.D.S. in Lanciano when Cdn. 11th Inf. Bde. passed u/c Indian 4th Division in late January.
- 13 (Cdn.) F.D.S. took over the advanced surgical centre in Lanciano when Indian 8th Division was relieved.
- 7 (Cdn.) Lt. Fd. Amb. opened an A.D.S. in San Vito Marina to serve Cdn. 5th Armd. Bde. when this exchanged places with Indian 8th Division.
- 2 (Cdn.) Lt. Fd. Amb. with Cdn. 1st Armd. Bde. joined XIII Corps on February 10.

4 (Cdn.) C.C.S. moved from Torremaggiore to Vasto at the end of January to function there as the railhead hospital. 16 (Cdn.) F.D.S. relieved 216 Fd. Amb. at Casalbordino on February 3. At the end of February 5 (Cdn.) C.C.S. was open in Lanciano and the Canadian Advanced Surgical Centre in San Vito.

Canadian 1st Division remained in the Ortona salient until April 21. Its casualties were evacuated along the following chain:

- (a) A.D.S. 5 (Cdn.) Fd. Amb. in Ortona.
- (b) Priority I and II cases to the advanced surgical centre in San Vito.
Priority III cases by 1 (Cdn.) M.A.C. to:
- (a) 1 C.C.S. at Lanciano;
or
- (b) 4 (Cdn.) C.C.S. at Vasto (Railhead hospital).
- (c) Ambulance train every other day from San Vito Marina to Andria.
- (d) Minor sick, exhaustion and V.D. cases to 4 (Cdn.) Fd. Amb. at San Vito.

On February 4, 5 Cdn.G.H. (600) (tented) opened in Andria alongside 1 Cdn.G.H. (600) and, on the 5th, 3 Cdn.G.H. (200) opened in Avellino. On February 6, 15 Cdn.G.H. joined 14 Cdn.G.H. in the cavalry barracks in Caserta, replacing U.S. 16 Evac. Hosp.

The policy now became to admit or to transfer all Canadian casualties to these Canadian hospitals. To the Andria group (1 and 5) were to go all cases requiring hospitalisation not in excess of fourteen days; to the Caserta group (14 and 15) all V.D. and neuropsychiatric cases. All cases not expected to recover within ninety days were to be sent to the United Kingdom. Convalescents from the Caserta group were sent to 1 (Cdn.) Con. Depot (1,000 beds) at Mercatello, south of Salerno;

those from the Andria group were sent to a 1,000-bed expansion of 1 (Cdn.) Con. Depot which was with and administered by 11 (Br.) Con. Depot at Trani, ten miles from Andria on the Adriatic coast.

In the early days of February, in order to aid the Polish Corps, at this time somewhat deficient in respect of medical units, 29 and 31 F.S.U.s., 23 F.T.U. and a platoon of 567 A.F.S. A.C.C. were nominated for service with 3rd Carpathian Division.

On February 12 there were :

in Caserta	. 14 Cdn.G.H. (1,500 beds)
	15 Cdn.G.H. (1,200 ,,)
	2 N.Z.G.H. (700 ,,)
	2 B.G.H. (2,060 ,,) with an Indian wing.
in Canello	. 16 C.G.H. (500 ,,)
in Pompeii	. 70 B.G.H.
in Afragola	. 104 B.G.H.

On February 16, 5 (Cdn.) C.C.S. moved from Vasto to Lanciano and 1 (Cdn.) M.A.C. relieved 112 M.A.C. which had been serving as Canadian Corps M.A.C. 112 M.A.C. thereupon relieved 88 M.A.C. u/c Eighth Army. 1 C.C.S. reverted to Army command and went into reserve. When 3 Pol.G.H. moved up from Taranto to Campobasso, 7 C.C.S., with 4 and 25 F.S.U.s., passed u/c Army. On the 17th, Lt. Sec. 1 C.C.S. from Rocca rejoined its parent unit at Pollutri and reverted to Army command.

At this time all the penicillin stocks of Eighth Army were exhausted and, until fresh supplies arrived, the forward medical units could not be replenished.

On February 28, Adv. Adm. Ech. A.F.H.Q. became H.Q. Allied Central Mediterranean Force (A.C.M.F.) (Adm. Ech.).

On March 7, V Corps took over from Canadian I Corps in the Adriatic coastal sector of the line and the Canadian Corps, less Canadian 1st Division, was withdrawn into reserve around Larino and Casacalenda. Canadian 5th Armd. Division proceeded to the south of the River Fortore to the area of Casalnuovo, Motta Montecorvino and Lucera.

5 (Cdn.) C.C.S. at Lanciano was now relieved by 1 C.C.S. and moved to Casacalenda. 1 (Cdn.) F.D.S. replaced 8 (Cdn.) F.D.S. at San Vito and 3 (Cdn.) F.D.S. formed an advanced surgical centre at Larino. Evacuation from these units was *via* 16 (Cdn.) F.D.S. staging at Sassi, through 50 B.G.H. at Termoli to 1 Cdn.G.H. and 5 Cdn.G.H. in Andria.

13 (Cdn.) F.D.S. (40 beds) in Pietra, 7 (Cdn.) Lt. Fd. Amb. (50) at Castelnuovo and 24 (Cdn.) Fd. Amb. (70) at Casalnuovo dealt with the divisional minor sick. Emergency cases were sent to U.S. 4 Fd. Hosp. at San Severo.

When, in early March, H.Q. Eighth Army moved to Piedimonte d'Alife, there was a reshuffle of the L. of C. administrative areas. On March 9, H.Q. A.C.M.F. became H.Q. Allied Armies in Italy (A.A.I.) and D.D.M.S. Eighth Army assumed responsibility for the medical administration of Eighth Army, British Increment U.S. Fifth Army and 1, 2 and 3 Districts, which covered the area previously controlled by A.F.H.Q. Adv. Adm. Ech.

The medical branch of the British Increment, U.S. Fifth Army, originally consisted of an A.D.M.S. and one clerk. The A.D.M.S. was primarily a liaison officer between U.S. Fifth Army and X Corps. He was also responsible for the arrangements, at his level, relating to medical supplies and to the evacuation of casualties (in association with 57 Area Naples). In January 1944, as X Corps enlarged, the medical branch expanded. A D.A.D.M.S., D.A.D.H. and two more clerks were added. 12 and 18 C.C.Ss., 10 Adv. Depot Med. Stores, 25 Fd. Hyg. Sec. and 88 M.A.C. became its instruments and the medical branch could call for an ambulance train when such was required. 2 N.Z.G.H. and 16 C.G.H., moving to Caserta, entered the territory of the British Increment.

At the beginning of March, when regrouping occurred, British Increment U.S. Fifth Army was left with no formations to administer other than those in the Army's beachhead. N.Z. 2nd Division, Indian 8th Division and 78th Division passed to Eighth Army while X Corps was withdrawn altogether, the line being taken over by U.S. formations. Medical units u/c Army were distributed piecemeal by D.D.M.S. A.A.I. (Adm. Ech.). By March 31, Medical, British Increment had resumed its earliest rôle of liaison with the Surgeon U.S. Fifth Army and its responsibility for supply of and evacuation from the Anzio beachhead.

March 22 was notable, for on it there occurred one of the rare major eruptions of Mount Vesuvius. The countryside was covered with ashes. At Bari the sun was obscured and dust-laden rain covered everyone and everything with a thin coating of mud.

The X Corps Medical Order of Battle and Location Statement on March 18, 1944, will be found in Appendix XV.

X CORPS. PSYCHIATRIC WORK. DECEMBER 1, 1943-MARCH 31, 1944

During this period the corps psychiatrist and his *ad hoc* unit, the corps exhaustion centre, were located as follows :

December 1 to March 25 with 14 C.C.S. at Francolise.

March 26 to March 31 with 865 F.D.S. near Sparanise—closed.

Experience tended to confirm the view that the most forward C.C.S. on the main line of evacuation offered, in most circumstances, the best

location. The period covered two battles which produced psychiatric casualties in large numbers; the second battle for Monte Camino early in December 1943 and the Garigliano battle from January 18-25, 1944. On the latter occasion 480 cases were handled in eight days. Additional mental nursing orderlies were received in December and a medical officer with some psychiatric experience joined in February.

The opening of a psychiatric wing at 2 B.G.H. and of a psychiatric rehabilitation centre at 198 Transit Camp completed the chain of psychiatric evacuation.

With the publication of G.R.O. 613 of 1943, the function of finding the most suitable employment for down-graded psychiatric casualties was taken over by a team sent out by the Directorate of Selection of Personnel, War Office.

Store tents were replaced by hospital extending marquees. Two-tier bunks were introduced and found useful.

In accordance with instructions received from the Adviser in Psychiatry, A.F.H.Q., cases were classified as 'action cases'—evacuated from or immediately after battle—and 'non-action cases', referred in interim periods, including all out-patients and usually involving chronic problems of military unsuitability.

Summary of Cases by Diagnosis

	<i>Neurosis</i>	<i>M.D.</i>	<i>Psychosis</i>	<i>Non-psychiatric conditions</i>	<i>Totals</i>
Action cases	1,344	5	2	68	1,419
Non-action cases	243	2	3	1	249

Summary of Cases by Disposal

	<i>R.T.U.</i>	<i>Change of Employment without Reduction in Category</i>	<i>with Reduction in Category</i>	<i>Psychiatric Wing Re-habilitation Centre</i>	<i>Med. Surg.</i>	<i>Totals</i>
Action cases	416	16	15	906	66	1,419
Percentage	30	1	1	63	5	100
Non-action cases	29	15	49	155	1	249
Percentage	12	6	21	61	—	100

The introduction of the personnel selection scheme for psychiatric casualties in December 1943, meant that men who would formerly have been recommended for change of employment by the corps psychiatrist were now sent back to the psychiatric wing or rehabilitation centre for assessment by the personnel selection team.

Among the 1,344 cases classified as action cases—neurosis—there were 110 which could be justifiably described as purely exhaustion in origin and character. The majority were acute or sub-chronic anxiety states of mild or moderate severity. Mild acute anxiety states occurring in men of good personality and morale with no previous history of breakdown offered the best prognosis.

(iii)

The Renewed Assault upon the Gustav and Hitler Lines and the Capture of Rome

During the winter of 1943-44 the fortunes of 15 Army Group had not prospered. In the Adriatic sector the entry into Ortona had marked the end of the offensive that was to have taken Pescara and Avezzano and to have threatened in flank the Gustav and Hitler Lines covering Rome. In the Tyrrhenian sector all the efforts of U.S. Fifth Army to force its way towards the capital had been attended by very limited success. The amphibious assault had secured a bridgehead at Anzio but this had quickly been contained. The Allies now faced the Gustav and Hitler Lines.

The Gustav Line ran from the Tyrrhenian coast west of Minturno, above Minturno and Castelforte and in front of Monte Maio to the Garigliano, three miles south of Ambrogio, and thence along the river to its confluence with the Liri and northwards along the Rapido to Cassino and over the high ground to Monte Cairo, where it met the Hitler Line that stretched from Terracina on the Tyrrhenian coast through Fondi, Pico and Pontecorvo to Piedimonte at the foot of Monte Cairo. The defensive belt, particularly in the Liri valley sector, was deep, the flat fields being thickly patterned with strongpoints. The *Forme d'Aquino*, a marshy winding stream, was a natural obstacle of some value. From north of Route 6 to the Liri an anti-tank ditch had been constructed and behind it thick belts of wire covered deep minefields.

In the Hitler Line the defences were even more elaborate. Its outposts were semi-mobile armoured pill-boxes. Behind these was a system of intercommunicating concrete gun emplacements with tank turrets on concrete foundations. Each of these was covered by a number of mobile A/T guns on a flank. The underground living quarters of these emplacements were covered by as much as twenty feet of earth. The Hitler Line, however, was nowhere more than a thousand yards deep.

These man-made obstacles were formidable enough, but they must have seemed puny to such as stared across them towards the great mountains, for these indeed constituted a veritable giant's keep. Little

comfort could have been derived from the knowledge that at this time Allied land forces in this theatre were numerically somewhat stronger than their opponents and that their material resources were far more powerful.

On March 5, General Alexander issued orders for the regrouping of 15 Army Group in preparation for a co-ordinated major offensive. On May 1, in conference at Caserta, the plans of the British and U.S. Armies were co-ordinated and on the 5th an order was published in which the G.O.C. in C. declared that it was his intention to 'destroy the right wing of the German X Army, to drive what remains of it and the German XIV Army north of Rome, and to pursue the enemy to the Rimini-Pisa Line'. The battle would begin at 2300 hours on May 10.

General Alexander, in order to obtain numerical superiority locally in that area in which the objectives of the greatest military and political importance lay, brought H.Q. Eighth Army westwards across the Apennines, leaving V Corps on the Adriatic side. On March 26, Eighth Army took over from U.S. Fifth Army the sectors held by the New Zealand Corps, which was then dissolved, and by the French Expeditionary Corps and assumed command of all British, Indian and New Zealand troops in these sectors, with the exception of those in the Anzio beachhead.

5th Division had relieved 56th Division in the beachhead between March 5-11 and 56th Division left Italy for the Middle East. 4th Division arrived in Italy and relieved 46th Division, which also left for the Middle East.

During March and April H.Q. U.S. IV Corps, U.S. 85th Division and 1st Moroccan Motorised Division reached Italy.

The Order of Battle as at May 11, 1944, is given in Appendix XVI.

Eighth Army was set the grim task of outflanking and seizing Cassino while U.S. Fifth Army drove up the coast along Route 7 to join up with U.S. VI Corps from Anzio and thereafter to press on towards Rome.

Very elaborate steps were taken to persuade the Germans that the Allies had given up all hope of breaking through the defences at Cassino and intended to capture Rome by landing a strong force near Civitavecchia on May 15. At the same time, under conditions of the strictest secrecy, the formations moved to take up their new positions. Canadian 1st Division from the Adriatic coast and Indian 8th Division from Larino moved across the Apennines; 4th Division moved back from the mountains east of Cassino and then forward to the Rapido. The Polish Corps south and east of Isernia disappeared into the mountains and, finally, Indian 4th Division moved into the line to share Indian 8th Division's sector. In the sector occupied by the French Expeditionary Force there gathered, in addition to the division that was known by the Germans to be there, three others. It was soon to be demonstrated that

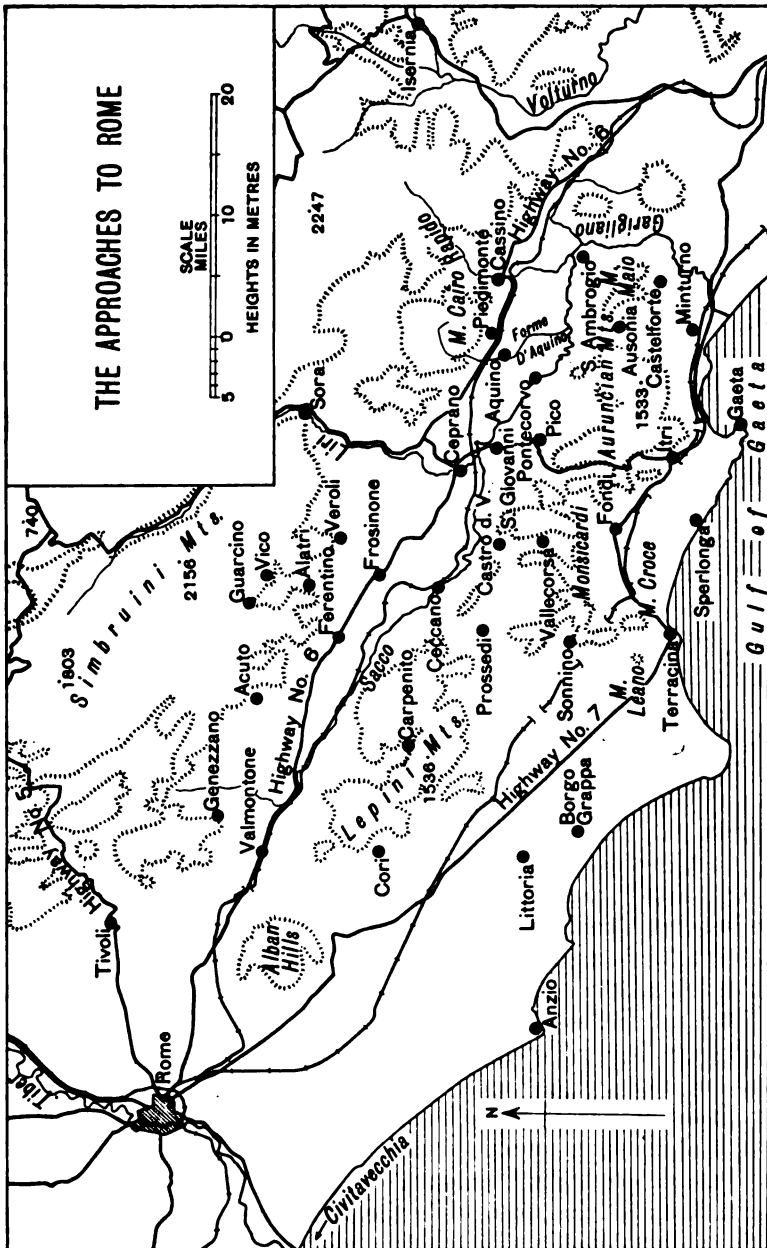


FIG. 55. The Approaches to Rome.

the Germans had been completely deceived and that as a consequence of this their reserves had been faultily disposed and were therefore tardy in reaching the battle, to which they were committed piecemeal.

In somewhat greater detail the tactical plan was as follows: The Polish Corps was to attack north of Cassino while XIII Corps crossed the Rapido. Then the two corps would join forces on Route 6 about two miles west of Cassino and thus isolate it. The Poles would then assault the monastery while XIII Corps cleared Cassino town. Thereafter both corps would advance against the Hitler Line, XIII Corps in frontal attack, the Polish Corps turning it from the north. On their right X Corps, holding the line with light forces, would simulate an attack towards Atina and thereafter be prepared to send reinforcement to the others.

U.S. Fifth Army, advancing with four divisions of French Colonials on the right and two divisions of U.S. II Corps on the left, would strike first to take the mountains that dominate the Ausonia defile. It would then advance on an axis parallel with Route 6 to cut the road from Itri to Pico.

The forces in the Anzio beachhead were ordered to be ready to move into battle at twenty-four hours' notice on or after the fourth day of the attack. They were to advance through Cori to Valmontone with the purpose of cutting Route 6.

OPERATION 'HONKER'

At 2300 hours on May 10 the Allied guns, some 1,600 in all, opened against the German positions along the thirty-mile front from Atina to the Gulf of Gaeta. For forty minutes their thunder reverberated among the heights.

XIII Corps on a five mile front opened its assault with 4th Division on the right and Indian 8th Division on the left. The former crossed the Rapido between Cassino railway station and Sant' Angelo, the latter at and south of Sant' Angelo. 1st Guards Bde. and part of 26th Armd. Bde. of 6th Armoured Division were temporarily u/c 4th Division, Cdn. 1st Armd. Bde. u/c Indian 8th Division.

In spite of the weight of the barrage the crossings were stoutly opposed and many of the assault boats were lost in the fast running river. 10th and 28th Bdes. of 4th Division had gained only a shallow hold across the Gari when morning came. Attempts to advance on Sant' Angelo were defeated and by nightfall the bulk of 28th Bde. had been driven back across the river while the bridgehead of 10th Bde. had shrunk to a depth of about six hundred yards. Throughout that night, under continuous fire, the sappers toiled to bridge the river and, on the 13th, strong reinforcements crossed the 'Amazon Bridge'. 12th Bde. passed through to fight its way towards Sant' Angelo. During the night

a second bridge was thrown across the river. 26th Armd. Bde. was relieved by N.Z. 19th Armd. Regt. and returned to 78th Division.

Meanwhile Indian 8th Division's crossing had taken the Germans by surprise, but here again the dense smoke screen caused much confusion and many assault boats were lost. By dawn Ind. 17th Bde. had reached its objective half a mile south-west of Sant' Angelo with Ind. 19th Bde. due south a thousand yards away. In the late afternoon half of the village had been taken. Cdn. 1st Tk. Bde. was then committed and good progress made. Next day the advance continued. Sant' Angelo was completely occupied and the road running north to Cassino reached. Next Panaccioni was taken. That night Ind. 21st Bde. passed through and on the morning of the 14th made good progress, though against stiffening resistance. The Gustav Line had been partially breached.

To the Poles was assigned the task that had previously proved to be beyond the power of the Americans, the Indians and the New Zealanders—the capture of Monte Cassino. They chose to take the north-western route from Monte Castellone and Colle Maiola to Colle Sant' Angelo, Point 575 and Point 593 of grim memory. This was over rocky country with little cover, but there was no climbing to be done and three of the four objectives could be attacked simultaneously. The assembly areas were west and south-west of the village of Cairo.

The tactical plan adopted was as follows: The Poles would attack from Colle Maiola towards Massa Albaneta. By capturing the ridge from Point 593 to Colle Sant' Angelo they could then dominate Route 6 and isolate the monastery. Monte Castellone being held in strength and Monastery Hill being screened by smoke and heavily shelled, 5th Kresowa Division would advance to capture the heights from Colle Sant' Angelo to Point 447 and 3rd Carpathian Division to attack Massa Albaneta, Points 593 and 569 and thereafter turn east against the monastery. Then the Poles would advance against the Hitler Line beyond Route 6 and turn it from the north.

On April 23, the Poles took over 78th Division's sector in the line, this division going into XIII Corps reserve. On the night of May 10 the Poles moved into their assembly areas. At 2330 hours on May 11 the guns opened and at 0100 hours on the 12th the infantry of the Kresowa and Carpathian Divisions advanced to the assault. They encountered very determined opposition and, although ground was gained, it could not be held, and when darkness fell on the 12th the Poles were withdrawn to their starting line. Their losses had been severe and re-organisation was necessary. For the next four days while this proceeded the guns and the fighter-bombers maintained the battle.

The French sector, east from Castelforte, included the hills of Turlito, Iuga and Ornito captured by 46th Division in February, and stretched to the Garigliano and along the east bank to the left wing of Eighth

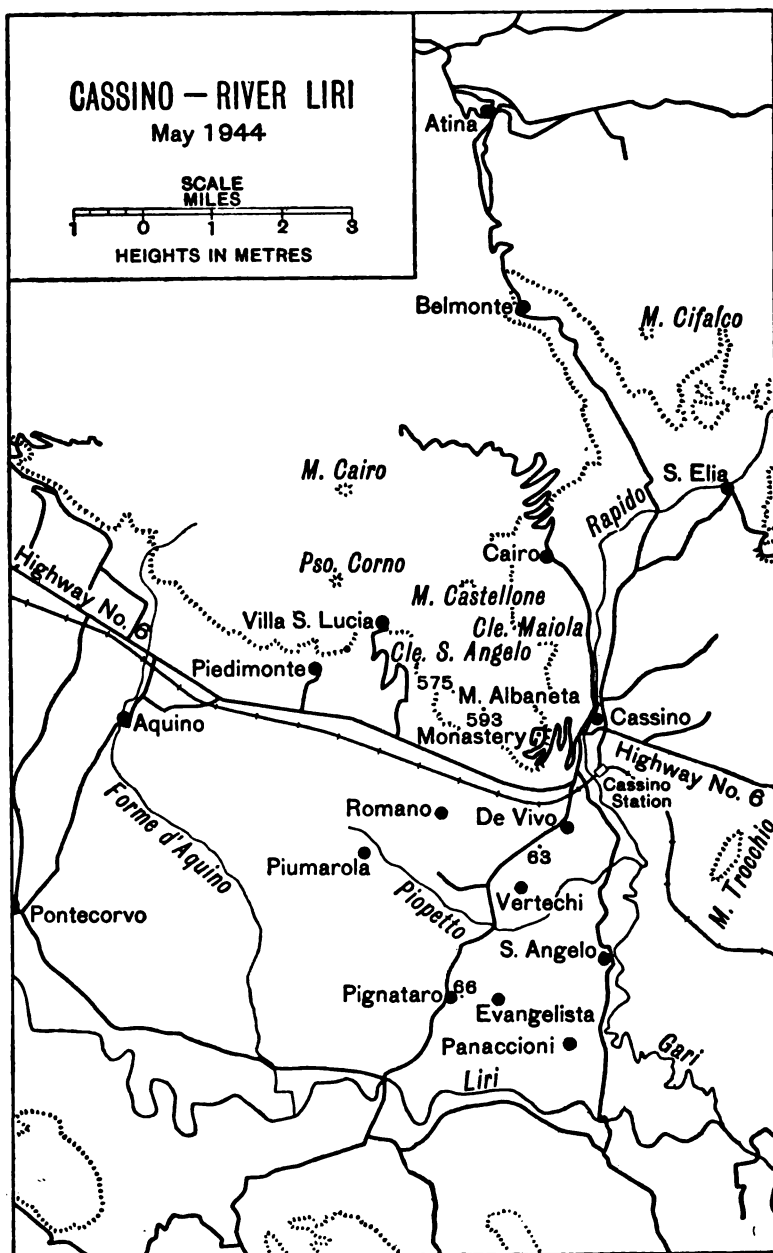


FIG. 56. Cassino-River Liri.

Army. It was now held by 4th Mountain and 2nd Division of Moroccan Infantry, a brigade of 1st Motorised Division and two battalions of 3rd Algerian Division. In reserve were the remainder of the Algerian Division and three groups of Tabors.

On May 11, 2nd Moroccan Division began its advance north-westwards towards Monte Girofano and Monte Faito. By 0300 hours Monte Faito had been captured and the advance continued until checked on the saddle between Monte Faito and Monte Feuci about noon on the 12th. Monte Girofano was captured on the 13th. A violent counter-attack on the Faito saddle was repulsed and the Moroccans thereupon attacked and secured the crest of Feuci and reached the crown of the 3,000 feet high Monte Maio. Meanwhile 1st Motorised Division had made a substantial advance in the loop of the Garigliano north-east of Monte Maio, to reach Conventi on the 12th. Preparations were then made to co-ordinate a further advance with 2nd Moroccan Division's attack on Monte Girofano. When this height was taken 1st Motorised Division advanced to the Fontanelle ridge and thereafter both armour and infantry drove forward to occupy Sant' Andrea, Sant' Apollinare and Monte La Guardia.

On the left of the French Expeditionary Corps' sector, 4th Mountain Division quickly took Point 664 and cleared the western slopes of Monte Iuga and Monte Turlito on the 13th.

3rd Algerian Division, on the extreme left flank, with the support of American armour, drove forward to surround, and finally capture, Castelforte and Damiano. On the afternoon of the 13th U.S. 350th Infantry took Monte Rotondo and the French cleared Monte Ceschito and the stage was set for an advance to Esperia. On the 14th the French went forward with the Goumiers in the van.

On the seaward flank of the Allied armies, U.S. 85th and 88th Divisions of U.S. II Corps had attacked with varying success the heights south-east of Castelforte. The villages of Ventosa and Ceracoli and Monte Rotondo were quickly taken. After very severe fighting Santa Maria Infante was occupied and Solacciano cleared. The success achieved by the French Corps began to have its repercussions in U.S. II Corps sector for, on the 14th, the Germans began to withdraw.

In XIII Corps sector, 12th Bde. of 4th Division crossed the Pignataro road in the early morning of the 14th and 28th Bde. took Massa Vertechi after two hours of fighting. Cdn. 14th Armd. Regt. cleared the Liri Appendix—the area of ground east of the road from Sant' Angelo confined by the Gari, the Liri and their confluence. Ind. 17th Bde. of Indian 8th Division had established itself on Colle Romano and at Casa Vittiglio Ind. 19th Bde. was moving west towards Pignataro and Ind. 21st Bde. was crossing the river.

On May 15, Ind. 21st Bde. reached Evangelista and captured

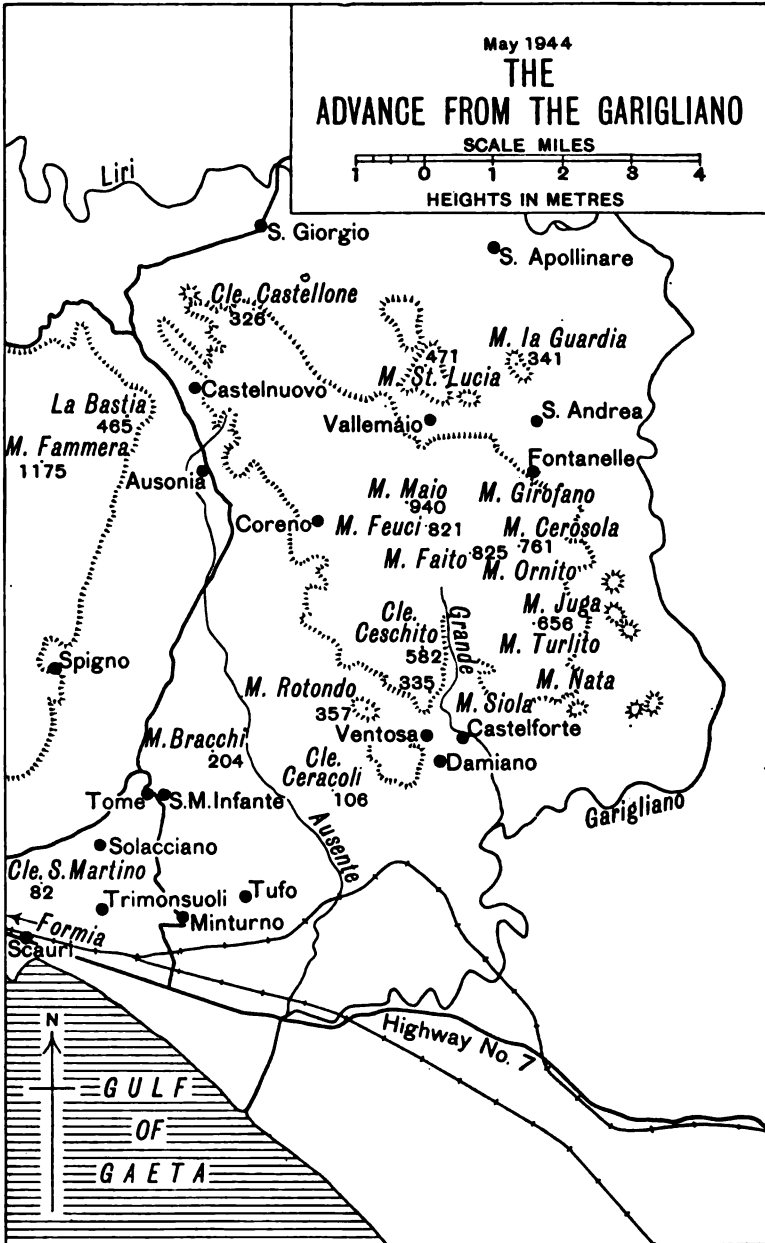


FIG. 57. The Advance from the Garigliano.

Pignataro and 4th Division closed a gap between its 10th and 12th Bdes. and now held a continuous line between Massa de Vivo and Point 63. The division was to serve as a pivot on which 78th Division might base a wheeling movement to the north.

78th Division planned to advance in four bounds to the 'Grafton', 'Pytchley', 'Fernie' and 'Bedale' lines. On the morning of the 15th 'Grafton' (the Pignataro road) was reached by the Inniskillings leading 38th Bde. Assisted by a squadron of 16/5th Lancers, the Inniskillings captured the village of Tamburrini and advanced on Point 66 on the Pignataro road. Then the L.I.R. with 2nd L.F. of 11th Bde. and supported by tanks of 16/5th Lancers went on to take the 'Pytchley' line. This was secured on the morning of the 16th. In the evening of the 16th in 4th Division's sector a small German salient that threatened the junction of 10th and 12th Bdes. was eliminated with the aid of New Zealand tanks.

Indian 8th Division was relieved by Canadian 1st Division on the 16th and the command of this sector was assumed by the Canadian Corps. Indian 8th Division passed into reserve, save for its 17th Bde. which remained u/c Canadian Corps.

On May 17, 4th Division attacked towards the railway that below Monte Cassino runs nearly parallel with Route 6 and 78th Division continued its wheeling movement towards the 'Fernie' line to threaten Route 6 further to the west. The 'Fernie' line was reached without much difficulty and Massa Carro was taken. The division had to fight hard for Piumarola, however. 10th and 12th Bdes. of 4th Division reached the railway and Route 6 and in the evening cut this vital supply line to Cassino.

On the night of the 16/17th the Kresowa Division, making a reconnaissance in force, captured a number of German positions on 'Phantom Ridge' with unexpected ease. At once this success was exploited and in the morning of the 17th Colle Sant' Angelo was stormed and held against two counter-attacks but partly lost during the course of a third. A second attack restored the position. The Carpathian Division fought its way to the summit of Point 593. The Poles thereon looked down on the monastery on Monte Cassino two hundred feet below and across the intervening valley. An attempt to take Point 596 was checked by withering fire from the monastery and Point 575 and it became obvious that before Point 596 could hopefully be attacked Massa Albaneta would have to be taken.

This was not necessary, however, for on May 18 a Polish patrol setting out from Colle d'Onufrio found no more than thirty Germans, mostly wounded, holding the mighty ruins of the monastery on Monte Cassino. These promptly surrendered and by 1030 hours the Polish standard flew above it.

While the Poles ferreted out parties of Germans on Massa Albaneta, on Point 596, Point 593 and Point 575, 4th Division was clearing the wreckage in the town and hunting in the warren of cellars and tunnels around the Continental Hotel, the Hotel des Roses, the Baron's Palace and the gaol.

The loss of Cassino made untenable all the German positions below it and on May 18 the Germans broke contact in the Liri valley and withdrew to the Hitler Line. But this line was already being outflanked from the south by the advance of the French Expeditionary Corps. A force of 12,000 men and 4,000 mules had been organised and despatched to force its way through the mountains from the Ausonia valley to the road between Itri and Pico.

West of the Ausonia valley lies a wild mountainous region in the centre of which rises the 4,000 foot Monte Revole. This region is roadless and treeless. The only path into it from the south and east is a shepherd's track at Spigno with a gradient that at its worst is one in two. From Monte Revole a number of tolerable tracks reached north and west. The French decided that the path from Spigno was possible, not only for their mountain infantry but also for their mules and guns.

As soon as Ceschito had fallen the force, divided into three groups, moved forward. On May 15, Monte Castello and Monte Fammera were captured and at 0600 hours on the 16th the crest of Monte Revole was occupied. Opposition was negligible for the Germans had not thought it necessary to prepare any defence of this area. Supplies were sent forward by mule train and were also dropped from the air by Tactical Air Command. On the 17th Monte Calvo, Monte Faggeto and Serra del Lago were occupied and the Itri road brought under fire. The Goums on Monte Faggeto repulsed a counter-attack and by the morning of the 18th were firmly established on Monte Faggeto and Monte le Pezze. Campodimele was occupied on the morning of the 19th and patrols were across the Itri-Pico road. In the afternoon the Americans entered Itri and the French flank was made secure.

Meanwhile 2nd Moroccan Division had advanced to occupy the village of Castelnuovo on May 15. From this position the division commanded the Ausonia defile. 1st Motorised Division thrust along the south bank of the Liri and, joined by U.S. armour, captured the village of San Giorgio. On the 16th, 1st Motorised, 2nd Moroccan, 4th Mountain and 3rd Algerian Divisions began to clear the country north and west of Monte Maio so as to facilitate the concentration for the attack on Esperia. By the 17th the stage was set for this attack. By midnight on the 18th the village of Sant' Oliva was taken and patrols were on Monte d. Mandrone and Monte della Commune, about four miles south-east of Pico. From Monte d'Oro the French looked down on Pico and it was clear that the Hitler Line could not be held much longer.

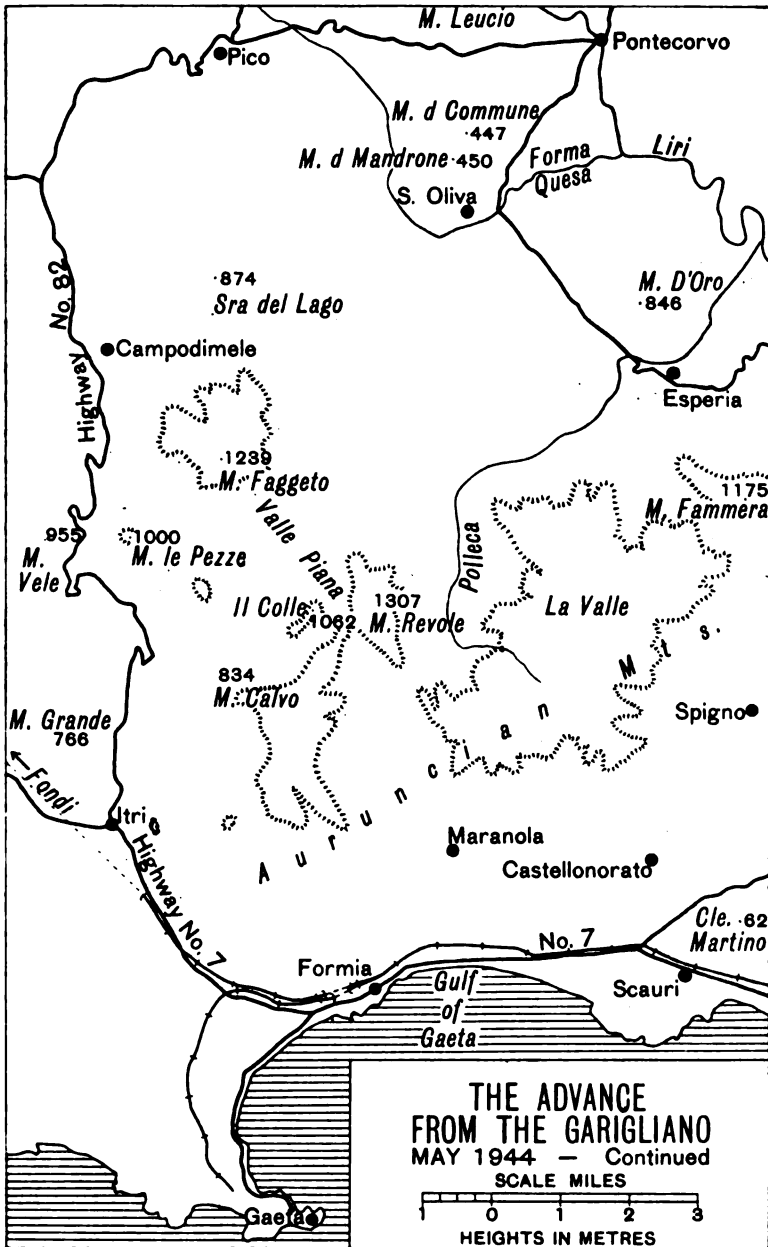


FIG. 58. The Advance from the Garigliano (contd.).

On the seaward flank, following the capture of Santa Maria Infante on the 14th, the Americans advanced rapidly. On the 15th they occupied Spigno and entered Castellonorato. On the 16th U.S. 88th Division moved west through the mountains towards Itri and U.S. 85th Division towards Formia, which was entered on the 17th. Monte Grande and Itri were quickly taken and the Germans withdrew towards Fondi.

U.S. 36th Division from U.S. II Corps reserve had already been sent to Anzio. U.S. 85th Division was now warned of its withdrawal to Naples for embarkation to Anzio and H.Q. U.S. II Corps was about to hand over to H.Q. IV Corps and depart with the corps troops for the same destination.

On May 16, Canadian I Corps took over the southern part of XIII Corps' front. Cdn. 1st and 3rd Inf. Bdes. at once advanced abreast toward the Hitler Line and on the night of the 18th consolidated their position along the *Forme d'Aquino*, which was rapidly bridged. On the night of the 19th the Royal 22ième Regt. attacked midway between Pontecorvo and Aquino but met with fierce resistance and the attack was halted. For the next three days the guns of the Canadians and French Expeditionary Corps systematically bombarded the German positions and plans for a set piece action were prepared.

On the morning of the 21st, Cdn. 4th Recce. Regt. and Cdn. 1st Bde. made a breach in the German wire, the Canadian engineers cleared lanes in the minefield and, on the morning of the 23rd, Cdn. 2nd Bde. supported by tanks went through and the Canadian Seaforth Highlanders reached the Pontecorvo-Aquino road and consolidated their positions. Cdn. 3rd Bde. on the left also won a hold on the road and, being reinforced, moved forward to secure objectives beyond Pontecorvo. On the 24th the Canadians entered Pontecorvo and cleared the road to Aquino. The Hitler Line was broken.

The Germans, now withdrawing, might stand on the line of the Melfa but there was no possibility of any prolonged defence south of Rome save in the area of the Alban Hills (the Caesar Line). The Allies' immediate tasks were to pursue the Germans as hard and as fast as possible, to break the Caesar Line, if this should be held, and to press on to the area of Rieti and Terni, some fifty miles north of Rome, and to occupy Rome itself. U.S. VI Corps in the Anzio beachhead was to break out and seize the Alban Hills and thus prevent the Germans from manning the Caesar Line.

On the night of the 23rd a brigade group of Canadian 5th Armoured Division moved forward through the gap that had been made in the Hitler Line to secure a base in the vicinity of Mancini about two and a half miles east of Aquino. During the morning of the 24th the division followed and quickly reached the Melfa after considerable fighting. The stream was bridged and, on the 25th, Cdn. 11th Inf. Bde. passed through

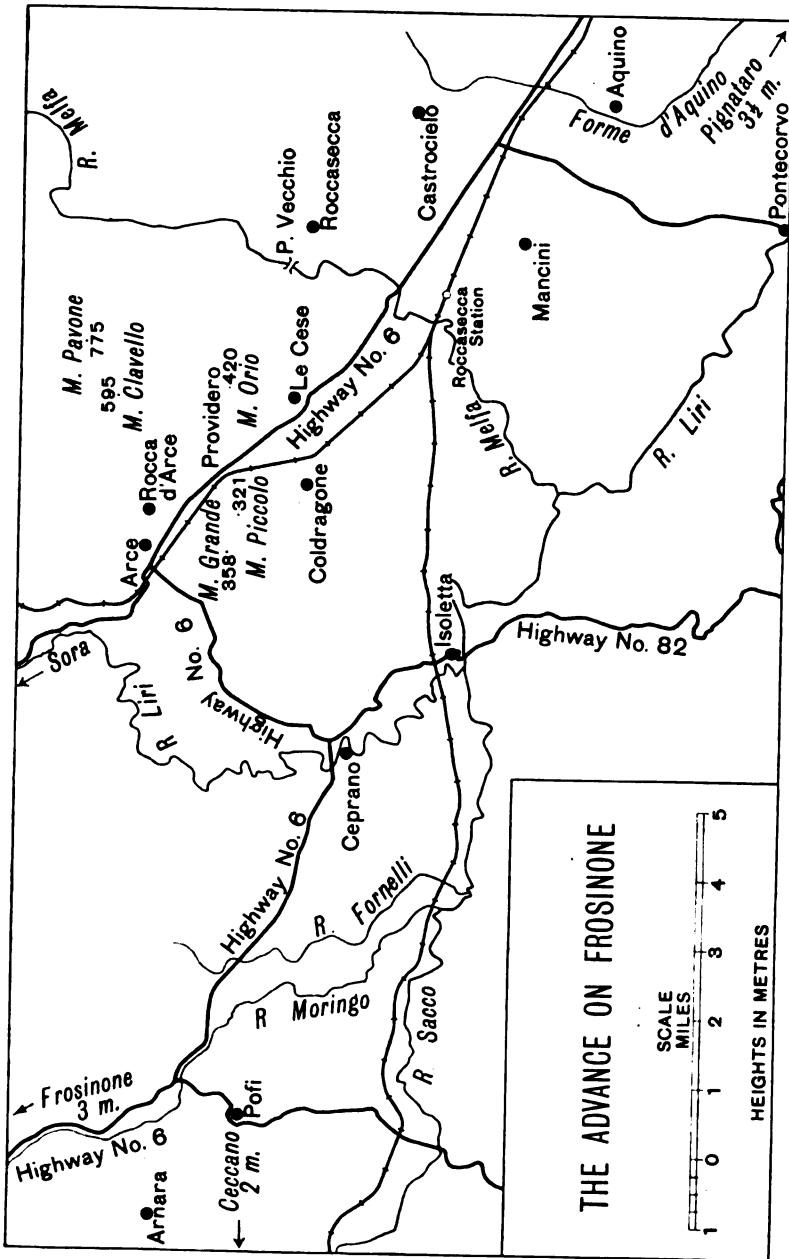


FIG. 59. The Advance on Frosinone.

the bridgehead and began to advance on Ceprano, which was entered unopposed that night.

XIII Corps began to advance at dawn on the 25th. 6th Armoured Division ran into a minefield two or three miles east of Pontecorvo. The Derbyshire Yeomanry and 10th Rifle Bde. crossed the Melfa but were forced to withdraw. 78th Division entered Aquino to find two bridges intact and Cdn. 1st Armd. Bde., leading 78th Division along Route 6, reached Roccasecca while, on the right, Indian 8th Division entered Castrocielo.

On the 26th, XIII Corps resumed its advance. On the 27th the Canadian Corps advanced from Ceprano towards Arce over country heavily mined and booby-trapped and under continuous gun and mortar fire. Progress was slow for small knots of resistance and snipers were numerous. On the 26th, Indian 8th Division occupied Roccasecca and then went to the assistance of the Welsh Guards and Coldstream Guards who had been checked on a line through Providero to Monte Piccolo. Monte Orio and Monte Clavello were taken and Monte Pavone stormed. On the 28th, 2nd Coldstream and 3rd Grenadiers captured Monte Grande and Monte Piccolo which guarded the Providero defile. 78th Division by-passed the defile by moving westwards off the axis of Route 6 and patrols reached the Liri. Canadian 5th Armoured Division advanced towards Arnara in order to outflank Pofi which, standing high upon its hill, commands the countryside. After it had been bombed 11th Bde. stormed into Pofi and occupied Arnara. On the last day of May, Frosinone was in Canadian hands.

Though the resistance offered by the retreating Germans was stubborn and caused much delay, the main difficulty besetting the advancing Allied armies derived from the paucity of first class roads leading northwards from the Liri valley. There were but two—the Via Casilina or Route 6 and the road from Pignataro to Pontecorvo. The rest were of little use for the transport of a large mechanised force. Many new tracks had to be built. As the pursuit continued every road of every kind became choked with traffic and the forward movement of divisions impossible unless the normal traffic stream stood aside. Ultimately the confusion was overcome and the pursuit continued. Indian 8th and 78th Divisions were both thrusting towards Alatri, which was entered on June 2 by the 78th while the Indians thrust the Germans out of Veroli and moved parallel to Route 6 through Vico towards Guarcino. The Canadians entered Ferentino late on June 1 and U.S. II Corps cut Route 6 in its attack on Valmontone.

On the 3rd the Germans along the whole front rapidly withdrew northwards. Eighth Army thereupon changed direction to the north to cut this retreat if possible while U.S. Fifth Army moved on Rome.

U.S. II Corps at Itri prepared to advance along Route 7 to Terracina.

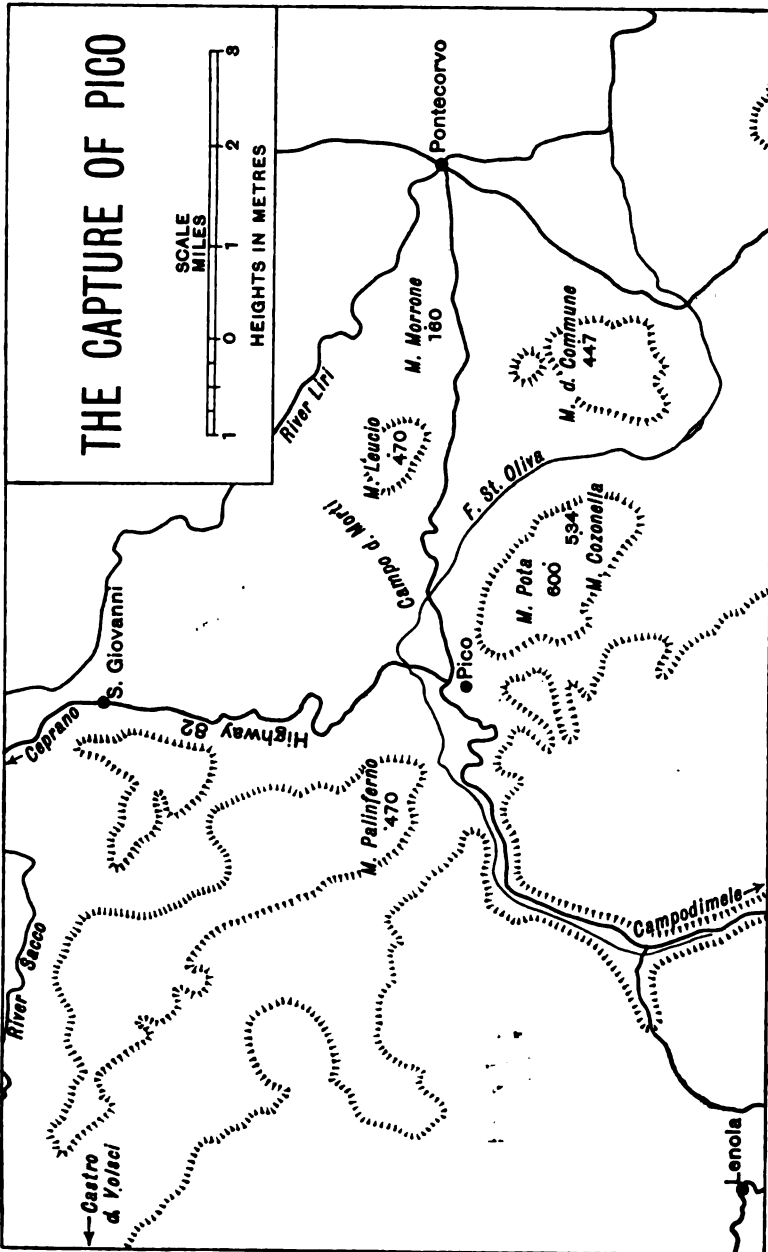


FIG. 60. The Capture of Pico.

On May 20, U.S. 88th Division took Fondi after a sharp engagement and, moving north-west over the mountains, drew ahead of the French Expeditionary Corps in the area of Valecorsa, reaching Roccasecca dei Volsci, fourteen miles north of Terracina, on the 23rd. Then U.S. 85th Division began to clear the hills south of Route 7 while a battalion of U.S. 338th Infantry embarked in D.U.K.Ws. at Gaeta and landed at Sperlonga. U.S. 337th Regt. advanced against Terracina and after two days of fighting captured the place and cleared Monte Croce and Sonnino.

U.S. II Corps then pushed northwards over the flooded Pontine marshes and, during the morning of the 25th, near Borgo Grappa, made contact with a composite U.S. and British force that had broken out of the Anzio bridgehead by way of Littoria.

U.S. II Corps then waited for the advance of the French on its right. The Algerians captured the heights of Monte Leucio, Monte Cozonella and Monte Pola on May 20 while the rest closed in on Pico. On the 21st Lenola was captured and Pico itself entered. But fierce counter-attacks compelled the French Colonials to withdraw. During the night of May 21/22 the Germans in Pico thinned out and when, on the morning of the 22nd, the Algerians attacked again Pico was quickly captured, as were the heights north of Lenola. The Germans withdrew to the north-west and the French were behind the Hitler Line. By the evening of the 25th they had fought their way to San Giovanni. Thereafter they cleared the Lepini mountains and fought their way up the south bank of the Sacco.

The Anzio bridgehead on May 22 extended from the ridge south of the River Molletta to the Mussolini Canal and its north-eastern front, parallel to the railway through Cisterna, lay two miles to seaward of it. The perimeter was manned from left to right by 5th, 1st, U.S. 45th, U.S. 34th Divisions and U.S. 36th Engineer Combat Regt. During the first half of May large reinforcements had been sent to the bridgehead. On May 22 U.S. 36th Division arrived. In reserve were U.S. 1st Armoured and U.S. 3rd Divisions.

The plan for the breakout of U.S. VI Corps was that it should first establish a base about two miles beyond Cisterna and thence attack the high ground near Cori and press the assault to Ardena. The two British Divisions were to make small diversionary attacks to hold the Germans in their sector and were not to be employed north of the Tiber.

At 0545 hours on May 23, in a drizzle of rain, the Allied guns opened fire and light bombers and fighter-bombers attacked the area around Cisterna. Forty-five minutes later the armour and infantry moved forward. U.S. 45th Division secured its objectives about Carano. U.S. 1st Armoured, U.S. 3rd Division and U.S. 1st Special Service Force passed through U.S. 34th Division to advance about a mile. On the 24th Cisterna was surrounded, German communications between

Littoria and Velletri cut and a task force despatched to make contact with U.S. II Corps.

On the 25th, though Cisterna still held out, the German left flank hurriedly retreated towards Velletri and Valmontone. The Tactical Air Force choked the roads from Cori to Giulianello and from Velletri to Valmontone with the wreckage of burnt out tanks and transport. The Americans reached the general line Monte Arrestino-Cori-Giulianello and in the evening the dwindling garrison of Cisterna was overwhelmed.

On the 26th, U.S. 34th and 45th Divisions changed direction and moved on Rome while U.S. 3rd Division continued its drive on Valmontone. 3rd Division captured Artena on the 27th but was held in check sufficiently long to enable a very large proportion of the German troops to the east of Valmontone to escape the closing net. U.S. 34th and 45th Divisions advanced about a mile and a half on the 26th, but there was to be no break-through, for the German rearguards for three whole days denied the American advance. On the night of the 28th U.S. 1st Armoured Division passed through U.S. 45th Division and attacked towards Albano, but it, like the infantry, quickly encountered the most stubborn and skilful resistance and made but little progress. However, U.S. 36th Division, holding Route 7 north of Cisterna, had discovered a gap in the German line. Monte Artemisio was unguarded and on the night of May 30/31 the division went forward, meeting no opposition whatsoever until midday on the 31st. By the evening the division was on the high ground overlooking the road from Velletri to Nemi.

On June 1 the Germans withdrew from Valmontone. U.S. 3rd Division reached Route 6 and U.S. 85th and 88th Divisions were approaching Monte Ceraso. On the 2nd the Germans were retreating towards Tivoli and U.S. 3rd Division entered Valmontone and pushed on towards Cave and Palestrina. The American Special Service Force east of Colle Ferro linked up with the French, who had completed their task of clearing the Lepini mountains, U.S. 85th Division captured Monte Ceraso and U.S. 88th Division cut Route 6 at San Cesareo.

On June 3 U.S. II Corps, turning towards Rome, drove astride Route 6 and by dark had reached the crossroads at Osteria Finocchio.

By midnight on June 4 the Americans were on the line of the Tiber from the sea to the River Aniene with the French on their right and Rome had been taken, just two days before the Allies successfully landed on the Normandy beaches.

During these events British 1st and 5th Divisions were also moving out of the Anzio bridgehead. They crossed the Molletta on May 30 and moved north near the coast towards Lido di Roma. When Rome was taken 1st D.W.R. and a composite battalion from the French Expeditionary Corps joined U.S. 3rd Division to serve as its garrison.

The battle for Rome had cost the Americans 18,000 casualties, killed,

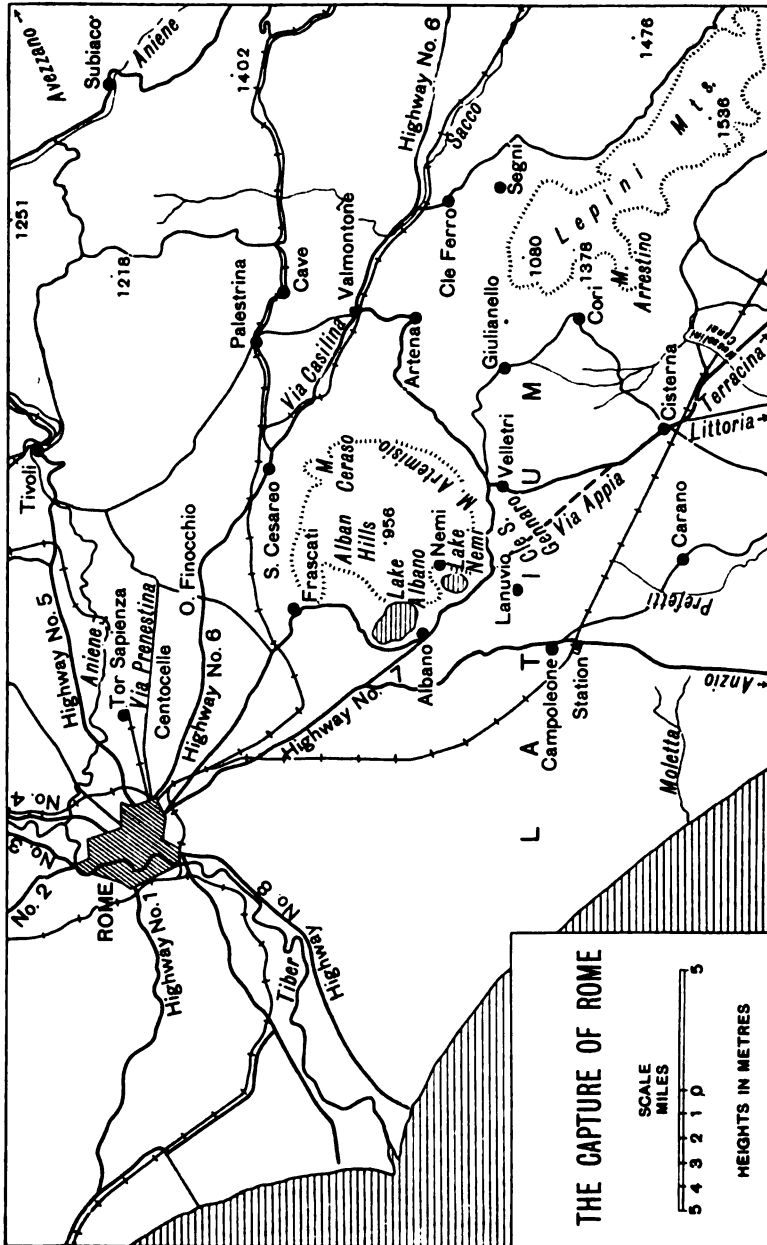


FIG. 61. The Capture of Rome.

wounded and missing; the French 10,000 and the British Commonwealth more than 14,000.

When Rome fell the forward divisions of Eighth Army were echeloned back facing the mountains. On the right X Corps, led by N.Z. 2nd Division, was on the road from Sora to Avezzano with light forces moving from Atina to Opi. In the centre XIII Corps had Indian 8th Division on the road from Alatri to Guarcino, 6th Armoured Division advancing from Alatri to Fiuggi and S.A. 6th Armoured Division was leading Canadian I Corps from Anagni to Paliano.

EIGHTH ARMY MEDICAL ARRANGEMENTS, OPERATION 'HONKER'

On April 5 it was agreed that a new medical area capable of accommodating 5,000 hospital and 4,000 convalescent beds should be developed immediately in western Italy. Canello was the area selected. 16 C.G.H. was already there. Within a short time it became possible to move and to open 69, 72 and 100 B.G.Hs., 5 Cdn.G.H., 31 C.G.H. and 10 Con. Depot. Later these were joined by 48 B.G.H. and 7 Con. Depot.

To conform with the movement of the Canadian Corps, 1 and 5 Cdn.G.Hs. had vacated their sites at Andria, 1 Cdn.G.H. relieving the Canadian 200-bed hospital at Avellino in order that the latter might move forward. A division of the Canadian convalescent depot which had been functioning in the east was brought over to western Italy where it joined the division already open at Mercatello. To Andria went 106 S.A.G.H. and 18 I.G.H. which arrived in Italy in May.

30 I.G.H. had been moved from Taranto to Potenza in February. This location proved to be unsatisfactory and ultimately the unit was moved to the former site of 58 B.G.H. at Pontecagnano.

31 C.G.H. on its arrival in Italy was sited at Termoli where it opened under canvas to serve the Indian divisions in the Adriatic sector. But no sooner had it been established in Termoli than, in association with the movement of the formations to the west, this medical unit was moved to Canello.

These medical arrangements were complete by April 30.

The 'G' estimate of casualties, including sick, was 17,000 during the first nine days, this on the Eighth Army front alone and not taking into account V Corps or the British Component in the Anzio bridgehead. Based on these figures a detailed ambulance train programme was arranged by 'M' Branch, H.Q. A.A.I. with Eighth Army, whereby clearance during the early days of the battle would be effected to hospitals in 2 District and to the most southerly group of hospitals in 3 District, leaving the Caserta, Canello and Naples groups relatively empty to carry the peak load from D-day +4 onwards. Preliminary arrangements

were made with M.A.A.F. for air evacuation in the later stages of the battle, this being dependent upon the capture of landing-grounds.

To produce an adequate number of empty beds evacuation from 3 District had been going on steadily during April. All 75-day cases were cleared to the United Kingdom and to the Delta. Cases with a 56-day expectancy were cleared to North Africa by hospital ship and shorter-term sick and wounded were flown to Sicily. All other transportable cases were evacuated to eastern Italy by daily ambulance trains and the maximum number possible had been discharged to convalescent depots. A programme for evacuation to the United Kingdom for the months of May and June, estimated on a 75-day basis, was agreed upon with Movements.

In Italy and Sicily on May 1 there were the following empty beds :

1 District	1,756
2 District	3,874
3 District	6,658
giving a total of	12,288

In the event it transpired that the 'G' estimate of casualties was too high and no real difficulty was encountered in respect of hospital accommodation.

The ambulance control post of 3 District at Capua (and later at Cassino) was the distributing centre for all Eighth Army casualties. In its long lanes of tents ambulances from all sectors of the front unloaded. With the minimum of delay patients found themselves in other ambulance cars bound for a British, Canadian, New Zealand, Indian or other hospital. The distributing officers maintained a list of the bedstates of all these hospitals. The loaded ambulances moved off singly. The odd case in need of emergency treatment was retained at the control post but the great majority, their dressings having been checked, passed quickly on their way to Caserta or Naples. All cases of head, nerve or blood vessel injury, irrespective of nationality, were directed to that British hospital to which the appropriate special surgical teams had been attached.

The control post had a holding capacity of 250 beds and facilities for life-saving surgery as well as for staging and sleeping and feeding the ambulance car crews. During the course of the operation it amply displayed its usefulness. In the later phases of the battle, as the L. of C. lengthened and the roads became thronged with maintenance traffic, priority of passage for ambulance cars could not be guaranteed and often they were held up for many hours.

1. XIII CORPS

(a) *Medical units available*

2 (Ind.) C.C.S.	} at Vairano
7 C.C.S.	

19 C.C.S.
 1 (N.Z.) C.C.S. } at Presenzano
 three surgical teams and one F.T.U. to be attached to each C.C.S.

(b) *Evacuation*

(1) To M.D.Ss. under divisional arrangements.
 Two of these M.D.Ss. would be at Mignano and to them a F.T.U. would be attached for resuscitation work.

(2) From M.D.Ss.
 British battle casualties to 7 and 19 C.C.Ss. and also to 1 (N.Z.) C.C.S. if necessary.
 Indian battle casualties to 2 (Ind.) C.C.S.
 Exhaustion cases to Corps Exhaustion Centre (corps field ambulance).
 Sick (both British and Indian) to field ambulances established under Corps arrangements.
 Ambulance cars available:

485 A.F.S. A.C.C. (three plns.)	90
18 M.A.S.	25
	115

(3) From C.C.S. (Army responsibility) to 3 District Control Post (under control of D.D.M.S. 3 District) at Capua by 88 M.A.C. (two secs.) and 146 M.A.C. (one sec.) under arrangements made by A.D.M.S. 55 Area.

(4) From Control Post to hospital in Naples area.
 At the Control Post cases were to be unloaded from Army ambulance cars, sorted according to type and each special type of casualty sent on to that hospital dealing with it (65 and 92 B.G.Hs. in Naples, 70 B.G.H. in Pompeii, 104 B.G.H. in Afragola, 2 B.G.H. (2,060 beds) and 2 N.Z.G.H. (700) in Caserta).

The general policy was to get all cases back in the base hospitals as quickly as possible, only life-saving surgery being undertaken in front of these hospitals. At the M.D.Ss. the casualties would be examined in the ambulance cars and all fit to continue their journey would be sent straight on to the C.C.S. The only route of evacuation available to XIII Corps was Route 6 and along it the journey from A.D.S. to C.C.S. would take not more than two hours on the average.

2. POLISH CORPS

(a) *Medical units available*

3 (Pol.) C.C.S.
 5 (Pol.) C.C.S. } in the vicinity of Venafro
 6 Pol.G.H. (200) }
 seven Polish F.S.Us. and one British F.S.U. attached
 two F.T.U.s. attached to field ambulances.

(b) Evacuation

(1) To M.D.Ss. under divisional arrangements.

(2) From M.D.Ss.

Battle casualties in Corps ambulance cars to 3 and 5 (Pol.) C.C.Ss. and 6 Pol.G.H.

Exhaustion cases and sick to Polish field ambulance in vicinity of Venafro.

Corps ambulance cars available:

29 (Pol.) M.A.C. (two secs.)	. 50
567 A.F.S. A.C.C. (one pln.)	. 30
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
	80

(3) From C.C.Ss. (Army responsibility) to 2 Pol.G.H. (600 expanded to 800) at Campobasso and Pol. Con. Depot (1,000) at Campobasso *via* Isernia and Boiano by 29 (Pol.) M.A.C. (one sec.) and 567 A.F.S. A.C.C. (one pln.) under arrangements made by A.D.M.S. 86 Area.(4) From Campobasso *via* Termoli to Taranto (Polish Base).

From Campobasso to Termoli by ambulance car under arrangements made by D.D.M.S. 3 District.

From Termoli to Taranto by hospital rail coach.

3. X CORPS

(a) Medical units available

15 C.C.S. at Macchia

1 (N.Z.) C.C.S. at Presenzano

three surgical teams and one F.S.U. attached to each of these.

two F.D.Ss.

one F.T.U. with 6 (N.Z.) Fd. Amb. for forward co-ordination of blood supply and resuscitation duties.

(b) Evacuation

(1) To M.D.Ss. under divisional arrangements.

(2) From M.D.Ss.

New Zealand cases to 1 (N.Z.) C.C.S.

Others to 15 C.C.S. in Corps ambulance cars.

Ambulance cars available:

N.Z. M.A.C.	. . . .	25
25 M.A.C.	. . . .	75
567 A.F.S. A.C.C.	. . . .	30
		<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
		130

(25 M.A.C. to help 86 Area with one pln. if necessary)

(3) From C.C.Ss. (Army responsibility)

1 (N.Z.) C.C.S. by 88 M.A.C. to Capua under arrangements made by 55 Area.

15 C.C.S. by 25 M.A.C. to Capua Control Post.

2 Fd. Hosp. was functioning as an air evacuation centre. This unit was relieved by a section of 151 Lt. Fd. Amb. from Campobasso on June 8 and proceeded to Frosinone to serve there as an air evacuation centre.

MEDICAL COVER

CANADIAN I CORPS

In the first half of April the Canadian Corps troops moved to Telese and S. Salvatore and Canadian 5th Armoured Division to the vicinity of S. Agata and Melizzano, east of Caserta. Then, on April 21, Canadian 1st Infantry Division was pulled out of the Ortona salient and moved to the area of Campobasso and Vinchiatiuro.

In connexion with these moves 5 (Cdn.) C.C.S. opened in Telese and 24 (Cdn.) Fd. Amb. accompanied Cdn. 11th Inf. Bde. to the vicinity of Cassino.

In the first week of May the troops moved to their assembly areas, south of Vairano, north of Capua and east of Caserta. The corps medical units congregated about 4 (Cdn.) C.C.S. with the light sections of 3 and 8 (Cdn.) F.D.Ss. open. The divisional medical units were with their divisions. 1 (Cdn.) Research Lab. and 3 Cdn.G.H. (200) joined Canadian I Corps on May 6 and 11 respectively. 1 Cdn.G.H. was now open in Avellino, 5 Cdn.G.H. open in Cancellio and 14 and 15 Cdn.G.Hs. open in Caserta.

On May 15 the Canadian Corps, headed by Canadian 1st Division, passed through Indian 8th Division which had secured a bridgehead across the Gari. By the 18th the Canadians had reached a point only a mile short of the Pontecorvo-Aquino road. Then, on the 23rd, Canadian I Corps launched a full-scale assault upon the Gustav Line. Canadian 1st Division broke through and Canadian 5th Armd. Division then passed through to advance towards the River Melfa. This was crossed and a bridgehead secured. Then the pursuit began. On May 27, Canadian 5th Armd. Division reached Ceprano and on the 29th captured Pofi. Then Canadian 1st Division went into the lead to capture Frosinone on the 31st. By June 4, Canadian I Corps was in the Anagni area. It was then withdrawn in order to give free scope for the movement of U.S. Fifth Army.

When Canadian I Corps passed through Indian 8th Division its casualties were cleared across the Gari to 19 C.C.S. at Presenzano. When Canadian 1st Division attacked across the Pignataro-Cassino road 4 and 9 (Cdn.) Fd. Amb. established casualty collecting posts on the west side of the Gari and their A.D.Ss. close up to the eastern bank. Further back along Route 6, 2 (Cdn.) F.D.S. functioned as an advanced surgical centre for Priority I and II cases near the crossroads known as 'Cox's Corner'. Priority III cases were cleared to 4 (Cdn.) C.C.S. near Vairano. 5 (Cdn.) C.C.S. was moving up to Mignano (Fig. 62).

As Canadian 1st Division fought its way into and through the Gustav

Line towards the Hitler Line the A.D.Ss. of the field ambulances moved across the Gari and then forward, keeping pace with the advance.

On May 18, 5 (Cdn.) C.C.S. opened in Mignano for Priority III cases, and on the following day 1 (Cdn.) F.D.S. established an advanced surgical centre on the west side of the Gari and relieved 2 (Cdn.) F.D.S. of responsibility for Priority I and II cases.

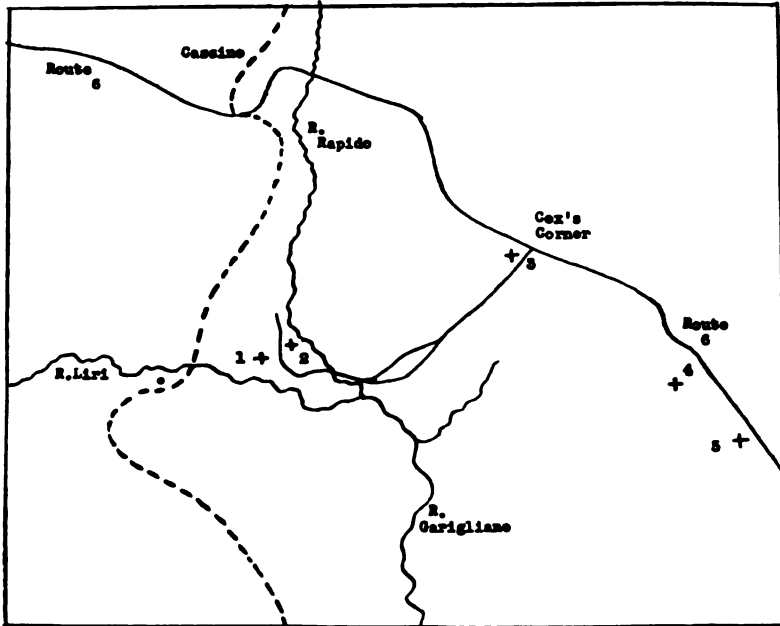


FIG. 62. The Distribution of the Canadian Forward Medical Units. May 17, 1944.

Canadian 1st Division relieving Indian 8th Division. Canadian 5th Armoured Division moving up from its concentration area.

- | | |
|---------------|-------------------------------------|
| 1. 4 Fd. Amb. | 4. 5 Fd. Amb. |
| 2. 9 Fd. Amb. | 5. 5 C.C.S. setting up near Mignano |
| 3. 2 F.D.S. | ----- = Front Line |
| 2 & 3 F.S.Us. | |
| 3 F.T.U. | |

On May 20, 4 (Cdn.) C.C.S. opened at 'Cox's Corner' close to 2 (Cdn.) F.D.S. Casualties were now directed to both 4 and 5 (Cdn.) C.C.Ss. from the advanced surgical centres, 100 to each in rotation.

On the 22nd all the F.D.Ss., F.S.Us. and F.T.Us. were pooled under D.D.M.S. Corps in preparation for the assault upon the Hitler Line. 3 and 13 (Cdn.) F.D.Ss. moved up to positions close behind Canadian 1st Division and 16 (Cdn.) F.D.S., on wheels, close to 1 (Cdn.) F.D.S.'s. advanced surgical centre.

In the assault 4, 5 and 9 (Cdn.) Fd. Ambs. moved in close support of Cdn. 1st, 2nd and 3rd Inf. Bdes. Casualty collecting posts were established close behind the battalions and A.D.Ss. immediately to the rear of the headquarters of the brigades. A section of 5 (Br.) Lt. Fd. Amb. was attached to each regiment of 25th Tk. Bde. (Canadian 1st Division's armoured support for this battle).

When Canadian 5th Armd. Division concentrated to the east of the Forme d'Aquino ready to exploit any success of Cdn. 1st Inf. Division, 7 (Cdn.) Lt. and 24 (Cdn.) Fd. Ambs. opened A.D.Ss., since this area was under constant shellfire. Casualties were evacuated along the same chain as those of Canadian 1st Division.

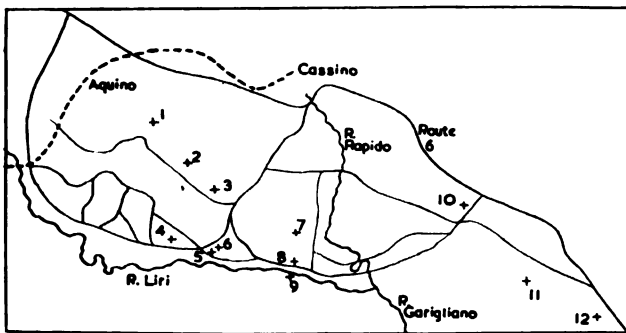


FIG. 63. The Distribution of the Canadian Forward Medical Units. May 20 1944.

Canadian I Corps in the Line.

- | | |
|---------------------------------|--------------------------------------|
| 1. 24 Fd. Amb. | 8. 1 F.D.S. open, relieving 2 F.D.S. |
| 2. 7 Lt. Fd. Amb. | 3 F.S.U. 3 F.T.U. |
| 3. 9 Fd. Amb. | 9. 3 F.D.S. closed & on wheels |
| 4. 5 Fd. Amb. | 10. 2 F.D.S. open. 4 C.C.S. |
| 5. Br. 5 Lt. Fd. Amb. | 2 F.S.U. |
| 6. 4 Fd. Amb. | 16 F.D.S. on wheels |
| 7. 13 F.D.S. closed & on wheels | 11. 8 F.D.S. open for sick |
| 4 F.S.U. 2 F.T.U. | 12. 5 C.C.S. |

During the assault on May 23 casualties were numerous (272 killed, 601 wounded) and so 3 (Cdn.) F.D.S. was obliged to open an advanced surgical centre to relieve the congestion in 1 (Cdn.) F.D.S. Later in the day 13 (Cdn.) F.D.S. found it necessary to open in order to lighten the load of 3 (Cdn.) F.D.S. Four surgical teams from the Canadian general hospitals were also sent forward. During the 24th no less than four F.S.Us., two auxiliary surgical teams and two F.T.U.s. were working to capacity in this conjoint advanced surgical centre. At this point Canadian nursing sisters were sent forward from the general hospitals and four to six ambulance cars of 1 (Cdn.) M.A.C. were attached to each A.D.S.

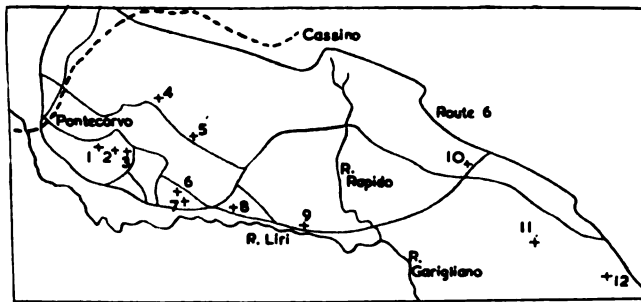


FIG. 64. The Distribution of the Canadian Forward Medical Units. May 23, 1944.

The Gustav Line broken; the Assault upon the Hitler Line begun.

- | | |
|--|----------------------------|
| 1. 4 Fd. Amb. | 8. Br. 5 Lt. Fd. Amb. |
| 2. 9 Fd. Amb. | 9. 1 F.D.S. open |
| 3. 5 Fd. Amb. | 3 F.S.U. 3 F.T.U. |
| 4. 24 Fd. Amb. | 10. 2 F.D.S. closed |
| 5. 7 Lt. Fd. Amb. | 4 C.C.S. open |
| 6. 16 F.D.S. closed & on wheels | 11. 8 F.D.S. open for sick |
| 7. 3 F.D.S. 2 F.S.U. 13 F.D.S. 4 F.S.U. 2 F.T.U. | 12. 5 C.C.S. closed |

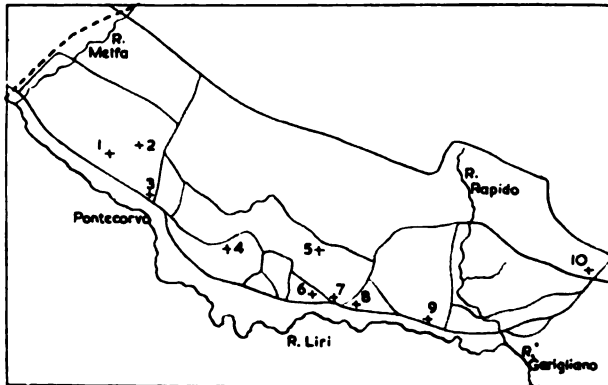


FIG. 65. The Distribution of the Canadian Forward Medical Units. May 25, 1944.

Canadian 5th Armoured Division over the Melfa. Canadian 1st Infantry Division moving up to the Melfa.

- | | |
|-----------------------|--|
| 1. 9 Fd. Amb. | 7. 5 C.C.S. open for Priority I and II cases |
| 2. 24 Fd. Amb. | 8. Br. 5 Lt. Fd. Amb. |
| 3. 16 F.D.S. (A.S.C.) | 9. 1 F.D.S. closed |
| 4. 4 Fd. Amb. | 2 F.D.S. closed & on wheels |
| 5. 7 Lt. Fd. Amb. | 10. 4 C.C.S. open |
| 6. 8 F.D.S. on wheels | |
| 3 F.D.S. closed | |
| 13 F.D.S. (A.S.C.) | |

On May 25, 24 (Cdn.) Fd. Amb. opened an A.D.S. west of the Pontecorvo–Aquino road and took over responsibility for clearing the Canadian 1st Divisional front. This unit also established a light A.D.S. on the south bank of the Melfa to cover the crossing. 9 (Cdn.) Fd. Amb. had its A.D.S. west of Pontecorvo. Then 5 (Cdn.) C.C.S. moved up alongside 3 and 13 (Cdn.) F.D.Ss. and, opening, greatly shortened the journey for Priority III cases. 16 (Cdn.) F.D.S. opened an advanced surgical centre in Pontecorvo when the traffic congestion on the evacuation route began seriously to interfere with the clearance of Priority I and II cases.

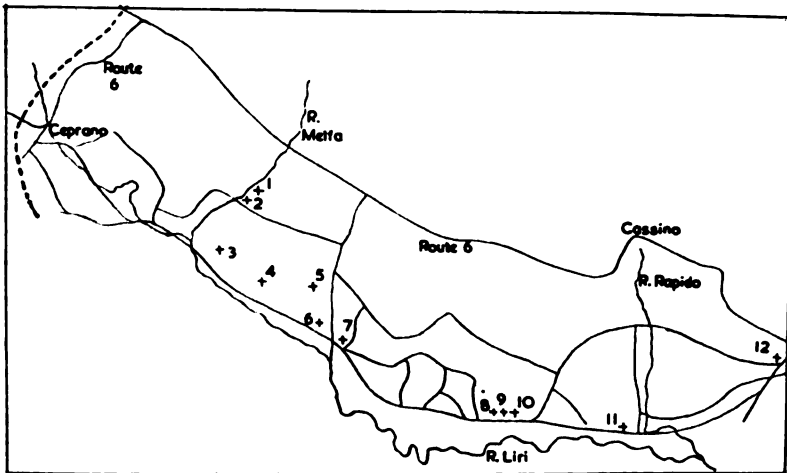


FIG. 66. The Distribution of the Canadian Forward Medical Units. May 27, 1944.

- | | |
|-------------------------------------|---|
| 1. 24 Fd. Amb. Advanced A.D.S. open | 7. 8 F.D.S. closed & on wheels.
16 F.D.S. (A.S.C.) |
| 2. 7 Lt. Fd. Amb. closed | 8. 2 F.D.S. closed & on wheels |
| 3. 9 Fd. Amb. | 9. 13 F.D.S. closed |
| 4. 4 Fd. Amb. | 10. 5 C.C.S. open
3 F.D.S. closed |
| 5. 24 Fd. Amb. | 11. 1 F.D.S. closed |
| 6. 5 Fd. Amb. | 12. 4 C.C.S. closed & on wheels |

On May 26, two sections of 7 (Cdn.) Fd. Amb. opened a light A.D.S. midway between the River Melfa and Ceprano. On the following day H.Q. 7 (Cdn.) Lt. Fd. Amb. followed and cleared the divisional front until Ceprano had been captured. Then 24 (Cdn.) Fd. Amb. leapt-frogged to open just south of Ceprano to cover the advance to Frosinone.

To shorten the evacuation route 8 (Cdn.) F.D.S. on May 29 established an advanced surgical centre in Ceprano itself. Then, when 5 (Cdn.) Fd. Amb. with Cdn. 2nd Inf. Bde. reached Pofi, Priority I and II cases had to travel only a short distance to obtain skilled surgical intervention.

On May 31, 4 (Cdn.) C.C.S. opened in the vicinity of Ceprano to receive all Priority III battle casualties and all sick from units west of the River Liri.

During the advance of Canadian 1st Division toward Ferentino and Anagni, 4 and 5 (Cdn.) Fd. Amb. established successive A.D.Ss. along the axes of advance of Cdn. 1st and 2nd Inf. Bdes. On June 4, 4 (Cdn.) Fd. Amb. opened an A.D.S. in Anagni.

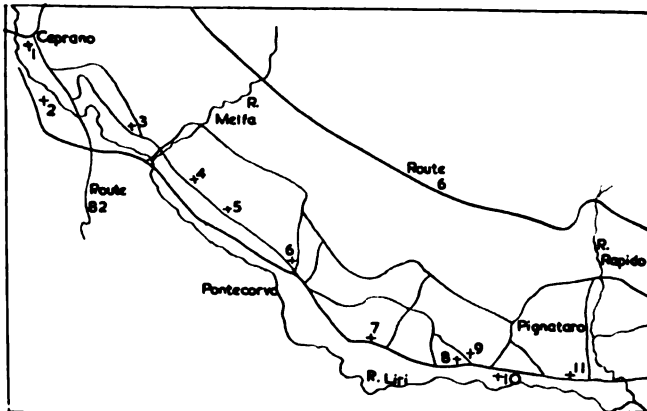


FIG. 67. The Distribution of the Canadian Forward Medical Units. May 29, 1944.

Canadian 5th Armoured Division in Pofi. Canadian 1st Infantry Division in reserve.

- | | |
|--------------------------|--------------------------------|
| 1. 8 F.D.S. open. A.S.C. | 7. 2 F.D.S. closed & on wheels |
| 2. 24 Fd. Amb. | 8. 13 F.D.S. closed |
| 3. 7 Lt. Fd. Amb. | 3 F.D.S. closed |
| 4. 9 Fd. Amb. | 9. 5 C.C.S. open |
| 5. 4 Fd. Amb. open | 10. Br. 5 Lt. Fd. Amb. |
| 6. 16 F.D.S. open | 11. 1 F.D.S. closed |

During the last few days of the advance on Rome, 2 (Cdn.) F.D.S. moved up along Route 6 to a point east of Ferentino, there to establish an advanced surgical centre and to receive Canadian, British and South African Priority I and II cases. (S.A. 6th Armd. Division had come u/c Canadian I Corps.) 3 Cdn.G.H. and 1 (Cdn.) Adv. Depot Med. Stores moved up to Anagni.

TABLE 28

Canadian Casualties. May-June 1944

May 11-June 4

Killed	903
Wounded	2,574
Sick and Injured	4,000 (approx.)

14 and 15 Cdn.G.Hs. at Caserta received the bulk of the Canadian casualties, 1 and 5 Cdn.G.Hs. being kept in readiness for forward

movement. But during the assault upon the Hitler Line and the crossing of the Melfa casualties were numerous and up till May 26, 14 Cdn.G.H. received about 900 battle casualties and 15 Cdn.G.H. more than 1,000. That night admissions to both of these hospitals were stopped for the next fifteen hours and casualties were diverted to 5 Cdn.G.H. at Canello and to 1 Cdn.G.H. at Avellino. A surgical team and several medical officers were sent from 1 Cdn.G.H. to assist the staff of 15 Cdn.G.H. As the battle reached its final phase the flow of casualties diminished. The hospitals were cleared by hospital ship during the last few days of May. Discharges and transfers to 1 (Cdn.) Con. Depot at Mercatello then began to equal and overtake admissions. On May 31 there were 880 empty beds in the four hospitals.

In retrospect it seems clear that had the German defence in the Hitler Line and along the Melfa been much prolonged, the Canadian hospitals would have been severely taxed and it is highly probable that their beds would have become insufficient.

Of the work of the Canadian medical units during these battles D.M.S., A.F.H.Q., found reason to observe that 'never before had casualties reached hospital so quickly and in such good condition'. In this observation, certainly most justified, D.M.S., A.F.H.Q., must have found a peculiar gratification, since the Canadian field medical organisation was fashioned by the recommendations of the Hartgill Committee, since this was the first time that this organisation had been tested to the full and since D.M.S., A.F.H.Q., was himself the chairman of the committee that bears his name and that made the recommendations.

Since the tactical doctrine promulgated by the Hartgill Committee was first fully tested by the Canadians it is desirable to consider the utilisation of the Canadian medical units in Italy where this doctrine, with the exception of the recommendation relating to the grouping of the F.D.Ss. under the control of the D.D.M.S., was strictly followed.

Canadian battle casualties between May 11 and June 4, exclusive of those suffered by Canadian 1st Special Service Battalion in the break-out from the Anzio beachhead, numbered 903 killed and 2,574 wounded. Over 2,200 of these passed through the medical units of Canadian I Corps. So also did over 400 battle casualties from other forces. During the same period these medical units dealt with some 4,000 sick and accidentally injured.

The evacuation routes were along poor roads, many of them little more than cross-country tracks.

The Field Ambulance

(H.Q. and two bearer companies, each of three sections.)

The employment of the field ambulance by Cdn. 1st Inf. Division and Cdn. 5th Armd. Division differed. In the former each of the three field ambulances allotted to the division was attached to a brigade. One

bearer company was used for evacuation in front of the A.D.S., the other held in reserve, usually in the divisional administrative area.

The forward company maintained a casualty collecting post to clear the whole of the brigade front, supplying extra S.Bs. and jeep ambulances to R.M.Os. as required. The reserve company, forming a tactical reserve, was available to assist the H.Q. company in operating the A.D.S. which usually was located on a 'down' traffic route slightly in rear of brigade H.Q. approximately three miles behind the front line.

In the armoured division the one field ambulance was made responsible for casualties in the motor battalion as well as in the infantry brigade. One bearer section was allotted to each of these four battalions, the two remaining sections being held in reserve. H.Q. company, as in the infantry division, ran an A.D.S. at about the level of brigade H.Q., but this was echeloned with that of the light field ambulance so that, normally, as one opened the other closed and leap-frogged ahead.

The light field ambulance (H.Q. and four sections) of the armoured division placed one section with each armoured regiment of the armoured brigade and the fourth with the divisional armoured reconnaissance regiment. When a unit was deployed over a wide front the bearer section covered one flank, the R.M.O. the other.

When an independent tank brigade (e.g. 25th Tk. Bde.) was employed u/c of the infantry division, the brigade's light field ambulance (e.g. 5 Lt.) maintained an A.D.S. in the divisional administrative area. Here local sick from the brigade were retained. So that it might function in this manner, the H.Q. company was reinforced by one bearer section. Each of the three remaining sections was attached to an armoured regiment. As it was the practice for an armoured regiment to support an infantry brigade, its casualties were evacuated through the A.D.S. clearing that brigade.

The officer commanding the field ambulance was responsible for maintaining close liaison with the brigade H.Q., for the collection and triage of all casualties from the brigade area and for the evacuation of Priority I and II casualties to an advanced surgical centre. In Canadian 5th Armd. Division these responsibilities devolved upon the officer commanding whichever unit it was that was running the forward and open A.D.S. He controlled not only his own unit but also whatever sections of the other that was in action.

The collection of casualties from R.A.Ps. was generally by jeep ambulance, but when necessary by S.Bs. on foot. In rear of the C.C.Ps. it was usually possible to use ambulance cars.

The Field Dressing Station

Six were available. The field dressing station functioned primarily as the nucleus around which were aggregated F.S.U.s. and F.T.U.s. to form an advanced surgical centre. Such centres were established by

D.D.M.S. in succession on the main 'down' traffic route. Prior to the crossing of the Melfa the average distance between them was five to six miles. During the pursuit the interval expanded to over ten miles. If an advanced surgical centre was to be moved forward during this rapid advance it was necessary to move it quickly, for the roads soon became congested with traffic. The advanced surgical centre, therefore, commonly found itself well within range of enemy artillery and exposed to considerable hazards. The risks taken were justified by the results achieved. Early surgical aid was provided for 205 critically wounded and the post-operative mortality was only 16.5 per cent.

When an advanced surgical centre ceased admitting casualties, the F.S.U.s. and F.T.U.s. moved on to the F.D.S. that had gone ahead, leaving the post-operative care of the patients to the F.D.S. personnel and the attached nursing sisters from the general hospitals. Thus pockets of seriously wounded post-operative cases were to be found at various points along the axis of advance. Abdominal, chest and compound fracture cases, operated on within twelve hours, were accommodated in good beds in these pockets and were in receipt of expert post-operative care. The attachment of nursing sisters to these F.D.S.s. was of the greatest value.

The C.C.S. and 200-bed Hospital

Two C.C.S.s. and one such general hospital were available. The C.C.S.s. were under control of D.D.M.S. and were used in orthodox fashion. They were sited on the main 'down' route, about thirteen to fourteen miles behind the R.A.P.s. Both were open, receiving 100 patients in succession. When one was about to move, all casualties were directed to the other.

The 200-bed hospital was more commonly used as a stationary C.C.S. for Priority III casualties and sick than as a roadhead hospital. Until it was moved to Anagni it functioned also as a staging centre on the long ambulance run between Cassino and Capua. One of the greatest services it rendered was that of providing medical and nursing personnel out of its ample establishment for the reinforcement of the medical units further forward.

563 cases were operated on in 4 and 5 (Cdn.) C.C.S.s. and 3 Cdn.G.H. The post-operative mortality was 4 per cent.

The F.S.U. and F.T.U.

Four F.S.U.s. and three F.T.U.s. were available. The former were employed mainly in the advanced surgical centres, though on occasion they were used to augment the facilities of the C.C.S.s. Usually two F.S.U.s. were allotted to each active F.D.S. where they worked in alternate eight or twelve hour shifts. The four auxiliary surgical teams provided by the general hospital functioned in similar fashion.

The F.T.U.s. served a dual purpose. They supervised pre-operative resuscitation in the advanced surgical centre and also distributed transfusion materials and equipment to forward medical units. To ensure a twenty-four-hour resuscitation service one additional transfusion orderly was attached to each F.T.U. from the C.C.S. The transfusion officer himself was ordinarily assisted and relieved by a medical officer of the F.D.S. or C.C.S. concerned. This arrangement, however, was found to be unsatisfactory for the reason that the medical officer had seldom received any training in resuscitation procedures.

Post-operative care was supervised by the medical officers of the F.D.S. assisted by the nursing sisters attached from the general hospital. Altogether 22 nursing sisters worked in Canadian I Corps area during the battles in the Liri valley, 8 in operating theatres and 14 in post-operative wards.

Mobile Laboratories

The forward element of 1 (Cdn.) Research Laboratory was attached in turn to various advanced surgical centres. Its base element remained with 14 Cdn.G.H. It undertook a number of investigations into such matters as shock, post-operative anuria, post-transfusion haemolytic reactions, the bacteriology of wounds and penicillin therapy.

1 (Cdn.) Mob. Bact. Lab. was employed at the Corps V.D.T.C., while 1 (Cdn.) Mob. Hyg. Lab. was attached first to 5 (Cdn.) Mob. C.C.S. and later to 3 Cdn.G.H.

The M.A.C.

1 (Cdn.) M.A.C. was responsible primarily for clearing Priority III casualties from A.D.Ss. to C.C.Ss. or to 3 Cdn.G.H. One platoon of 30 cars and 2 troop-carrying vehicles for sitting cases was placed u/c each A.D.M.S. Each open A.D.S. was provided with one section of 6 cars; a control post was established in rear of the A.D.S., where one or more sections were held in reserve. As loaded cars checked through, empty ones were sent forward to replace them. In times of stress, when field ambulance cars were overtaxed, the M.A.C. assisted in clearing Priority I and II casualties to the advanced surgical centre.

XIII CORPS

The medical arrangements proved to be satisfactory. Each ambulance leaving the M.D.S. area on Route 6 near Mignano passed through the control post where it was given a card directing it to one or other of the three C.C.Ss., 19 at Presenzano, 7 and 2 (Ind.) at Vairano. One hundred cases were sent to each in rotation. Later in the battle a rearrangement was made. All head, maxillo-facial and neurosurgical cases were directed to 19 C.C.S. so that for each 100 cases sent to this C.C.S. 150 went to 7; 2 (Ind.) received only Indian patients.

On May 20, the need for a forward C.C.S. being felt, 2 C.C.S. opened on a site near San Pietro Infine in the vicinity of Tav. San Cataldo. This unit was joined by 2 (Ind.) C.C.S. and the corps field ambulance.

On May 31 it was possible to open 4 C.C.S. at Castrocielo and thither 2 (Ind.) C.C.S. moved. On June 6, 2 (Ind.) C.C.S. and 19 C.C.S. opened in Frosinone which later became a large medical centre under Army control. As the advance quickened 8 (S.A.) C.C.S. came under command and opened at Finocchio on June 8, there to be joined by 2 C.C.S. which remained closed.

The next forward jump was to an area south of Civita Castellana where 15 C.C.S. opened on June 10. On the 12th 8 (S.A.) C.C.S. leap-frogged over 15 C.C.S. to open in Viterbo. On the 17th 4 C.C.S. opened in Orvieto where it was later joined by 59 B.G.H. Then on June 30 8 (S.A.) C.C.S. jumped forward to open in Chiusi.

The general policy was to have a forward and a rear C.C.S. under Corps administration. When a third C.C.S. was required and was sent forward the rearmost C.C.S. was taken over by Army.

X CORPS

At the beginning of April 1944 X Corps left U.S. Fifth Army to join Eighth Army. It relieved the Polish Corps in the Apennine sector by April 15. At this time the Corps consisted of 'Hermonforce' (K.D.G. and 12th Lancers), on the right, 24th Guards Bde., Italian 1st Raggruppamento Motorizzato (later to become the Corpo Italiano Liberazione, C.I.L.) and, on the left, N.Z. 2nd Division. The sector it held at this time was quiet and casualties were few. The composition of the corps was not constant throughout this period.

The evacuation of casualties was difficult only on the left flank of the sector, for the way from Sant' Elia down to Route 6 was under direct observation by the Germans. The track was reserved solely for ambulance traffic and no instance of deliberate interference was reported.

866 F.D.S., 133 M.D.U. and 25 M.A.C. were at Isernia, 865 F.D.S. at Macchiagodena and a platoon of 567 A.F.S. at Venafro. H.Q. of this A.C.C. was at Campobasso. Serving with independent brigades were 5 Lt. Fd. Amb. at Carovilli, 51 Sezione Sanita at Scapoli, 244 Ospedale di Campo at Lucenteforte, with 29 Ambulanza Radiologica under command, 470 and 866 Ospedale di Campo and 34 Nucleo Chirurgico at Montaquila. New Zealand casualties were evacuated to 1 (N.Z.) C.C.S. at Presenzano, 24th Guards Bde. sick and Priority III cases to 866 F.D.S., Priority I and II cases to 15 C.C.S. at Macchia, Italian sick and battle casualties from the Italian camp hospitals to the Italian Military Hospital at Maddolini, near Caserta. All British sick

with an expected duration of stay up to fourteen days were held in 865 F.D.S. at Macchiagodena.

SOUTH AFRICAN 6TH ARMoured DIVISION

This division reached Italy from Egypt on April 20-28 and moved from Taranto to the area of Altamura, Matera and Gravina. It consisted of S.A. 12th Mot. Bde. and S.A. 11th Armd. Bde. and supporting arms and services including :

- 1 (S.A.) F.S.U.
- 19 (S.A.) Fd. Amb.
- 20 (S.A.) Fd. Amb.
- 6th S.A. Armd. Div. Fd. Hyg. Sec.
- 6th S.A. Armd. Div. Dental Unit

Its average daily strength was :

Officers . . .	910
O.Rs.	
European . . .	13,800
Cape Corps . . .	1,750

On April 30, S.A. 12th Mot. Bde., to which 20 (S.A.) Fd. Amb. was attached, moved to the area Pozzilli-Vallerotonda to pass u/c N.Z. 2nd Division. It served with the New Zealanders until May 24, when it returned to its own division. While with the New Zealanders, the brigade took part in the operation on the Rapido River and about Sant' Elia. The field ambulance was organised to provide a M.D.S. and six light sections. Evacuation was difficult and arduous. Commonly casualties had to be hand-carried for two or more miles from the R.A.P. to the jeephead at Volvurito, about twelve miles in front of Vallerotonda where the A.D.S. was sited. 1 (S.A.) F.S.U. was attached to the A.D.S. S.B. posts were provided between the jeephead and R.A.P. and C.C.Ps. were established in the rear of the regiments in the F.D.Ls. Evacuation from the A.D.S. to the M.D.S. at Pozzilli, near Venafro adjacent to the Polish C.C.S., was by ambulance car or jeep. During this period the brigade had 22 killed and 55 wounded, and of the latter 20 passed along the New Zealand evacuation chain.

On May 24, 24th Guards Bde., with 226 Fd. Amb., passed u/c S.A. 6th Armoured Division and during the period May 29-June 3 the division served under the Canadian Corps.

This association was of great profit to the U.D.F. medical services for they were able to assess the value of the Canadian medical organisation based on the recommendations of the Hartgill Committee. As a result of this, 20 (S.A.) Fd. Amb. was reorganised. The H.Q. company now provided an A.D.S., five C.C.Ps. (one of which was sufficient to form a light A.D.S.) and bearer sections. The light A.D.S. remained with brigade H.Q.; of the C.C.Ps. one was at brigade B echelon

and the rest in echelon with the regiments. 19 (S.A.) Fd. Amb., serving with the armoured brigade, retained its organisation of a H.Q. company and four light sections, but the names A.D.S. and C.C.Ps. were adopted. Two of the C.C.Ps. remained with brigade H.Q., one was with the brigade B echelon and the others were with the regiments.

24th Guards Bde's. 226 Fd. Amb. for operational purposes was at this time organised into H.Q.—(1) Lt. A.D.S.; (2) A Echelon; A Coy.—(1) H.Q. section moving with brigade H.Q.; (2), (3) and (4) light sections working in echelon with battalions; B Coy.—(1) reserve section, (2) bearer section.

On May 31 the division set out on a forward move which was to take it from Pontecorvo—Ceprano—Route 6—Frosinone—Ferentino—Valmontone—Colonna—Rome—Route 3 to Civita Castellana by June 7. On June 4 the division passed u/c XIII Corps.

Save for the short spells on Routes 6 and 3, the going was far from easy. For this advance the field ambulances were brigaded. The division was well supplied with ambulance cars or their equivalent. It had 30 4-stretcher ambulance cars with the field ambulances and one with the regiments, 18 2-stretcher ambulances with the field ambulances and 11 with the regiments—a total of 60—plus 7 White scout cars fitted with stretcher gear and about 80 jeeps with stretcher fittings. In addition to all these there were A.F.S. ambulance cars that plied between the A.D.S. and the C.C.S.

During the advance it was the rule for all three brigades to be operating at the same time, so that all three A.D.Ss. were employed throughout. However, casualties were not numerous during the advance, the greatest number passing through an A.D.S. during the course of a day being 82, so that none of the A.D.Ss. was overtaxed. The distance between A.D.S. and F.D.S. varied between five and eleven miles and between A.D.S. and C.C.S. between fourteen and forty-five miles. The division provided 1 (S.A.) F.S.U. from its own resources.

As a result of this experience A.D.M.S. S.A. 6th Armoured Division was persuaded that there should be provided a divisional F.D.S., two divisional F.S.U.s. and one divisional F.T.U. These additions would place the U.D.F. on a parity with the Canadians and New Zealanders, for, like these, the South Africans wished to have a complete evacuation chain of their own. These units in front of 8 (S.A.) C.C.S. and 102 and 106 S.A.G.Hs. would complete such a chain. At this time only 102 S.A.G.H. at Bari was open.

4TH DIVISION

10th and 12th Inf. Bdes. and 21st Tk. Bde., with 10 and 12 Fd. Ambs., 6 Lt. Fd. Amb. and 4 Fd. Hyg. Sec., moved from Tunisia to Egypt on December 14, 1943. 21st Tk. Bde. passed from u/c on December 28.

On January 2, 1944, the division was joined by 28th Inf. Bde., less one battalion, from Gibraltar. No field ambulance accompanied this brigade.

On February 9 the division began to move to Italy, disembarking at Naples and moving up into line along the River Garigliano in relief of 46th Division. 2nd/4th Hampshires and 185 Fd. Amb. from 46th Division came u/c on March 16. 4th Division took over the transport of the field ambulances of 46th Division, which returned to Egypt to rest.

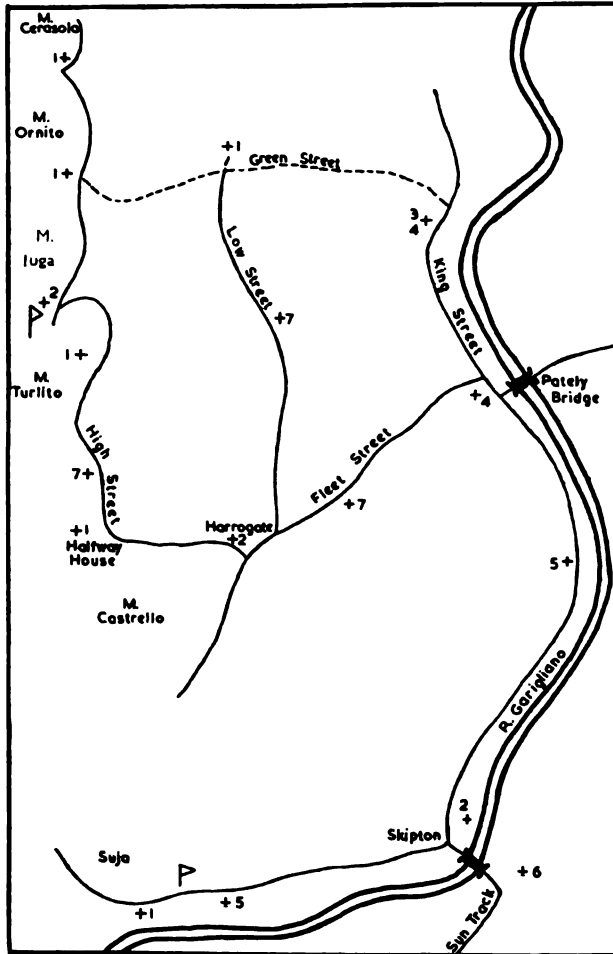


FIG. 68. 4th Division. Medical Cover west of the Garigliano, March 1944.

- | | |
|-----------------------------------|--------------------------------|
| 1. R.A.P.s. | 5. Evacuation by ambulance car |
| 2. A.D.S.s. | 6. Reserve ambulance cars |
| 3. First-Aid Post of 2/4th Hamps. | 7. S.B. Post |
| 4. Evacuation by ambulance jeep | |

▷ = Bde. H.Q.

The divisional sector was mountainous and lay on either side of the Garigliano, half way between the coast and the town of Cassino. The part to the west of the river was a salient flanked on either side by strong enemy positions and with only one road running parallel to the river. Thus the supply route was under direct observation by the enemy. All communications into the salient, apart from the road, were by mule tracks. The part of the sector east of the river was mountainous, but again the approaches thereto were overlooked by the enemy.

While in this sector there were 42 cases of trench foot and 47 cases of exhaustion. The positions were very exposed and the weather cold and wet.

Casualties were carried by field ambulance S.Bs. from the forward R.A.Ps. by a system of bearer relay posts established 150-400 yards apart. From the advanced A.D.S. personnel of pioneer companies carried the casualties down a further series of posts until they reached the road. Over five hundred porters were employed for this purpose. The distances over the tracks varied between one and five miles and cases took from six to twelve hours to reach the A.D.S. at 'Skipton'.

Part of the road along the river was under observation and it was found expedient to use jeeps fitted for the carriage of stretchers. Cases were taken thus to the ambulance car posts. These ambulance jeeps were also employed along the Cocuruzzo-Calabritto track which was too rough and steep even for four-wheel-drive ambulance cars. From the ambulance car posts the casualties were taken by the A.F.S. A.C.C. cars, of which fortunately there was an almost unlimited supply. Sixteen were employed with 4th Division on this sector. The Austin K.2 four-stretcher ambulance cars thus released from normal duty on forward evacuation were employed on rearward runs to the C.C.S. The distribution of the medical units east of the Garigliano during this period is shown in Fig. 69.

During the last week in March, 4th Division moved from the Garigliano sector, handing over to French 4th D.M.M. Division and taking over a new sector to the north of Cassino from the French 3rd D.I.A.

The rôle of 4th Division was to hold the line and to engage in aggressive patrolling. Much of the divisional area was under observation from Monastery Hill and from the forward slopes of Monte Cairo. Evacuation of casualties during the day, therefore, depended entirely on the enemy's respect for the Red Cross. In general, stretcher parties and ambulance cars were allowed to move unmolested. All stretcher parties and ambulance cars carried large and easily distinguishable Red Cross flags. The ambulance cars also had large Red Crosses painted on the panels. The protected personnel wore Red Cross brassards. Movement by day was kept to a minimum and the sick and minor casualties were evacuated at night. The line of evacuation was kept clear of military

objectives as far as possible and the ambulance route developed between the 'Inferno Gully' and Route 6 and ran south through open ground easily seen from the monastery.

Casualties in the battalions occurred in the isolated *sangars* and the R.M.Os. found difficulty in getting cases into their R.A.Ps. For the

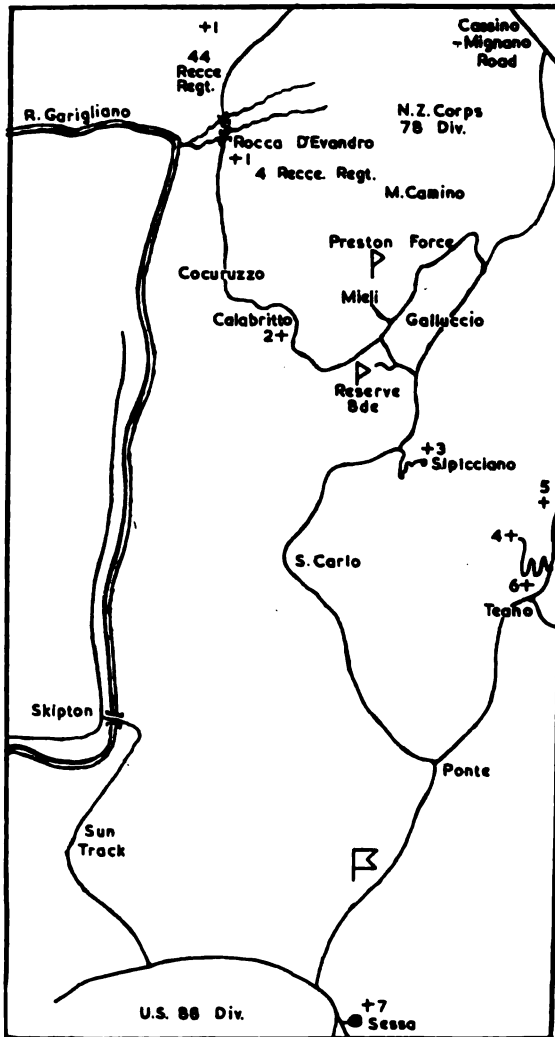


FIG. 69. 4th Division. Medical Cover east of the Garigliano. March 1944.

- | | |
|-------------------------|---------------------|
| 1. R.A.Ps. | 5. H.Q. 12 Fd. Amb. |
| 2. A.D.Ss. | 6. 4 Fd. Hyg. Sec. |
| 3. M.D.Ss. 185 Fd. Amb. | 133 & 140 M.D.Us. |
| 4. M.D.Ss. 10 Fd. Amb. | 7. 8 C.C.S. |
| ⊠ = Div. H.Q. | ⊐ = Bde. H.Q. |

most part, however, the S.Bs. were able to bring them in under cover of the Red Cross flag. Jeep ambulances came forward as far as possible and took the casualties back either to the A.D.S. or to a forward ambulance car post. The jeephead was in Belmonte.

In the Vallerotonda sector part of the route to the A.D.S. was impassable to jeeps but the S.Bs. were relieved of about two hundred yards carry by the use of a wheeled stretcher. The A.D.Ss. in Sant' Elia and Vallerotonda were each in houses upon which the Red Cross was prominently displayed, and although both were under observation neither was shelled deliberately.

During Operation 'Honker', May 11-17, the sites chosen for the battle A.D.Ss. were Pastinelle on Route 6 (10 Fd. Amb.) and S. Lucia, on a track to be developed later as the 'yellow' route (185 Fd. Amb.). It was arranged that each A.D.S. should have forward medical posts as near the river crossing as possible so that the R.M.Os. would not have to unpack their stores until they had crossed the river. Each medical post was to have stretcher-bearer parties to work in front of it and ambulance jeeps for the run back to the A.D.S.

After darkness fell on May 11, the A.D.S. of 185 Fd. Amb. at S. Lucia opened up. The A.D.S. of 10 Fd. Amb. moved up to occupy the house selected for an A.D.S. in Pastinelle. The artillery barrage opened up at 2300 hours and the infantry moved down to the river, together with the field ambulance detachments which were to establish the forward medical posts. 10th Inf. Bde. began to cross at 2345 hours. 28th Inf. Bde. was delayed and did not cross until thirty minutes later. Both brigades came under heavy machine-gun fire but the assault battalions of 10th Inf. Bde. reached their objective, approximately six hundred yards beyond the river. 28th Inf. Bde. was less successful and only disorganised groups of their assault battalions survived the crossing. Bridging operations, under the conditions that existed, were impossible and the troops across the river were thus left for the remainder of that night and the next day, the 12th, without any link with the east bank of the river other than the very occasional assault boat which was pulled across under fire and with considerable loss.

The R.A.Ps. of the Surreys and of the Beds. and Herts. of 10th Inf. Bde. crossed the river during the night of May 11/12 and dug in on the far bank. To begin with, one N.C.O. and twenty S.Bs. of 10 Fd. Amb. were attached to each of these battalions. These also crossed the river, but as no further advance was made they came back with wounded during the day. Casualties from these two R.A.Ps. were loaded into assault boats and pulled across the river by means of a rope. On the near bank field ambulance stretcher parties carried the casualties to the jeephead. Jeep ambulances were available in these forward posts by 2359 hours. Evacuation was under continual machine-gun and mortar fire.

From the ambulance jeephead casualties went to the forward ambulance car post and thence *via* the A.D.S. to the M.D.S. Some 350 casualties were evacuated during the first twenty-four hours.

Most of the wounded from the assault battalions of 28th Inf. Bde. came from the near bank of the river. The R.A.Ps., each with one N.C.O. and twelve S.Bs. from 185 Fd. Amb., remained on the east bank. Casualties were collected at medical posts on the near bank, each manned by one N.C.O. and twelve S.Bs., carried to the ambulance jeeps and by them to the A.D.Ss. Approximately 400 casualties reached the M.D.S. in the first twenty-four hours.

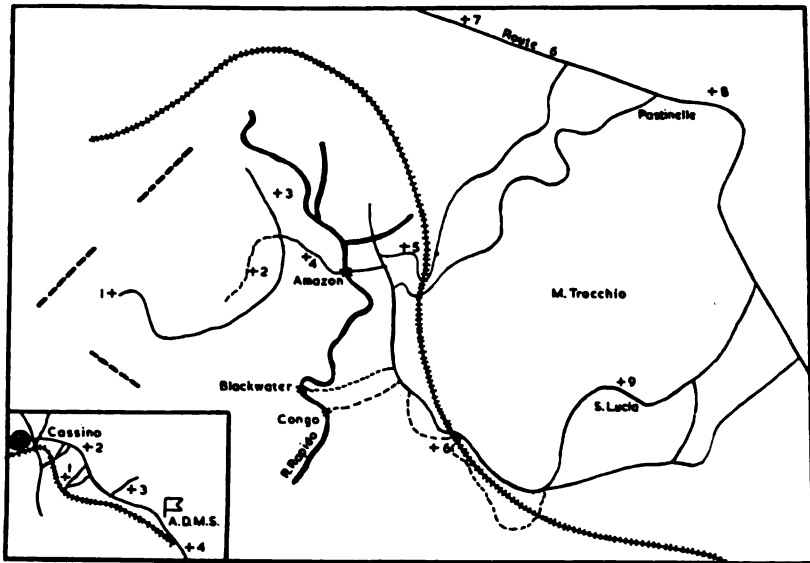


FIG. 70. 4th Division. Operation 'Honker'. The Crossing of the Rapido. May 11-15. Medical Cover.

- | | |
|------------------------------------|--------------------------|
| 1. C.P. for 6th B.W. | 6. Jeephead 185 Fd. Amb. |
| 2. R.A.P. 2nd R.F. | 7. A.D.S. 1 Fd. Amb. |
| 3. R.A.P. 2nd D.C.L.I. | 8. A.D.S. 10 Fd. Amb. |
| 4. A.D.S. 12 & 185 Fd. Ambs., C.P. | 9. A.D.S. 185 Fd. Amb. |
| 5. A.D.S. 10 Fd. Amb. | |

- (Inset)
1. A.D.S. 185 Fd. Amb.
 2. A.D.S. 10 Fd. Amb.
 3. Car Relay Post
 4. M.D.S. 10 Fd. Amb.
- ☐ = Divisional H.Q.

'Amazon Bridge' was completed by 0500 hours on the 13th. 12th Inf. Bde. passed over, as did also the 2/4th Hamps. Casualties from 10th and 12th Inf. Bdes. were evacuated by ambulance jeep and later by ambulance car from the R.A.Ps. across the river to the A.D.S. O/C 'A'

Coy. 12 Fd. Amb. with three ambulance jeeps and two ambulance cars went over the river on the evening of the 13th to form a car post on the far side of the bridge. During the afternoon of the 13th 50 casualties from Kings and Somersets were reported over on the far side of the river before contact had been made with 'Amazon Bridge' and the 2/4th Hamps. Minefields made movement exceedingly difficult. O/C 'A' Coy. 185 Fd. Amb. and the chaplain of the 2/4th Hamps. swam the river, salvaged a stray assault boat and established a ferry service which cleared the wounded on the far bank. This ferry service remained in operation until the morning of the 14th when 'Queen Street' was opened and evacuation could proceed across 'Amazon Bridge'. During the period 0500 hours May 13-0540 hours May 14, 31 officers and 624 O.Rs. were evacuated.

'A' Coy. 12 Fd. Amb. established a car post and a light A.D.S. on the far side of the river on the morning of the 14th. Unit and field ambulance jeeps brought casualties thereto from the R.A.Ps. A.F.S. ambulance cars brought them over the river onto Route 6. This A.D.S., becoming surrounded by tanks during the day, sustained a direct hit, 1 medical officer and 9 O.Rs. R.A.M.C. being killed or wounded. Since the traffic congestion on 'Amazon Bridge' was now no longer delaying evacuation across the river, 'A' Coy. 12 Fd. Amb. withdrew to the site of the previous A.D.S., leaving a car post behind. During the period 0500 hours May 14-0500 hours May 15, 19 officers and 505 O.Rs. were evacuated.

On the 15th, save for the establishment of another car post for 12th Inf. Bde., evacuation continued as before. On the 17th the M.D.S. of 10 Fd. Amb. closed, having admitted during the course of the battle 123 officers and 2,429 O.Rs. In its place the M.D.S. of 12 Fd. Amb. opened.

Following Operation 'Honker' 12th Inf. Bde. was in the line with 78th Division, the remainder of 4th Division being concentrated in the area of Piedimonte d'Alife, resting.

In the early days of June, 4th Division was concentrated near Arce in the rear Corps area.

INDIAN 8TH DIVISION

From early January until April, 1944, Indian 8th Division was engaged in aggressive patrolling. Time came when it extended its line by taking over Indian 4th Division's sector about Orsogna. Throughout March and April Indian 8th Division held this very extensive part of the line with two brigades up and one in reserve. The weather was at its very worst and the troops suffered greatly from exposure.

During this period medical cover was provided as follows :

- (1) Brigaded companies of the field ambulances provided A.D.Ss. for the brigades.

- (2) 33 (Ind.) Fd. Amb. provided the M.D.S. in Lanciano.
- (3) 29 (Ind.) Fd. Amb. provided a M.D.S. for minor sick and wounded in Lanciano.

The evacuation of the casualties incurred during the ceaseless patrolling presented much difficulty. Hand-carries up to three miles were common. The condition of the roads was such that only jeep ambulances could be used.

The division was relieved on April 10 by Indian 4th Division, returning from the Cassino sector, and moved to a training area near Larino where 31 (Ind.) Fd. Amb. opened a divisional M.D.S.

On April 22, H.Q. Indian 8th Division took over the Gari sector from 6th Armd. Division and came u/c XIII Corps. Ind. 17th and 19th Inf. Bdes. moved across the Apennines and concentrated in the vicinity of Dragoni, on the banks of the Volturno some twenty miles to the west of Cassino. In the attack on May 11 each of these brigades was supported by a Canadian armoured regiment. In the Indian sector the Gari was about forty feet wide and from six to eight feet deep. The attack was planned in three phases: (1) to secure a bridgehead at and south of S. Angelo; (2) to secure the S. Angelo horseshoe—the high ground bounded by S. Angelo, Pignataro and the village of Panaccioni—and (3) to enlarge the bridgehead further to the west.

Following a heavy bombardment, the assaulting infantry moved forward at 2334 hours on May 11. 4th Division was on the right of Indian 8th Division. By midnight Ind. 17th Inf. Bde. had crossed to the west bank of the Gari. On its left Ind. 19th Inf. Bde. also had got across, but both came under very heavy fire. Most of the assault craft were holed and rafts had to be improvised. However, by early morning on the 12th the bulk of the three hundred yards between the river bank and the high ground to the west had been secured and two bridges had been constructed, enabling the armour to support the harassed infantry. On the right of Indian 8th Division 4th Division had succeeded in crossing the Gari and was consolidating the bridgehead.

At 1740 hours on the 12th, Ind. 17th Inf. Bde. began its advance on S. Angelo. The village was stoutly defended and the advance was halted. At noon on the 13th the attack was resumed and after very bitter fighting the village and the high ground to the north of it were captured at the cost of 41 killed and 129 wounded. By 1400 hours Ind. 19th Inf. Bde. had captured Panaccioni, the bridgehead was secured and the Pignataro-Cassino road threatened.

Ind. 21st Inf. Bde. moved forward to cut this road; this was done by 2000 hours on May 15. Ind. 19th Inf. Bde. passed through to capture Pignataro.

Indian 8th Division was then relieved by Canadian 1st Division and withdrew to the vicinity of Dragoni to rest and refit.

When Indian 8th Division took over the sector previously held by 6th Armd. Division, H.Q. 29 (Ind.) Fd. Amb. established a M.D.S. to receive the divisional battle casualties, 'A' Coy. opened an A.D.S. and 'B' Coy. was placed u/c Ind. 21st Inf. Bde. H.Q. 31 (Ind.) Fd. Amb. established a M.D.S. for divisional sick and 'A' and 'B' Coys. were placed u/c Ind. 17th Inf. Bde. They provided two S.B. squads for each battalion, a light section with three S.B. squads to follow each assault battalion to establish an A.D.S. on the west bank of the Gari, a car post at each assault battalion crossing and an A.D.S. on the east bank of the Gari when the bridge had been constructed. H.Q. 33 (Ind.) Fd. Amb. was held in reserve. Its 'A' and 'B' Coys. provided two S.B. squads for each assault battalion, a light section with three S.B. squads to follow each assault battalion to establish an A.D.S. on the west bank of the river as soon as the bridgehead had been secured, a car post at the site of each assault battalion crossing and two A.D.Ss. on the east bank to receive all casualties from the west bank.

Casualties from the R.A.Ps. were evacuated to the light A.D.Ss. by S.B. squads or by stretcher-fitted jeeps. From light A.D.S. to the car post on the east bank was by S.B. or jeep and then by assault craft. From the car post on the east bank casualties were evacuated to the A.D.Ss. by stretcher-fitted jeeps or by ambulance cars and from A.D.S. to M.D.S. by ambulance car. To the battle M.D.S. a F.T.U. was attached.

The ambulance cars of all the field ambulances were pooled u/c A.D.M.S. : 43 four-wheel- and 20 two-wheel-drive cars were available; in addition 15 stretcher-fitted jeeps were provided.

For Canadian troops u/c Indian 8th Division 2 (Cdn.) Lt. Fd. Amb. opened an A.D.S., whence Canadian casualties were evacuated to the M.D.S. of this medical unit.

Until the Gari had been bridged the evacuation of casualties was attended by considerable difficulty. Often they had to be collected in some relatively safe spot on the west bank and there detained until the means to get them across the river became available. By the morning of the 12th, however, vehicles were able to cross the river. Between May 12 and 15, 1,177 casualties were admitted to the divisional M.D.S.

Triage was carried out in the M.D.S. of 29 (Ind.) Fd. Amb. Indian battle casualties were sent on to 2 (Ind.) C.C.S. at Vairano, British battle casualties to 7 and 19 C.C.Ss. at Vairano and Presenzano. Exhaustion cases were evacuated to 132 Fd. Amb. (corps field ambulance), which functioned as the corps exhaustion centre. Indian exhaustion cases went to 2 (Ind.) C.C.S. All Indian sick were despatched to the M.D.S. of 31 (Ind.) Fd. Amb. V.D. cases were sent therefrom on to 12 C.C.S. at Riardo.

As the advance continued Army moved 7 C.C.S. forward to San

Pietro where it came u/c XIII Corps. On the 20th, 2 (Ind.) C.C.S. and 132 Fd. Amb. also moved to this area. The system of utilisation of C.C.Ss. was for Corps to have one C.C.S. well forward and a second behind. Then, when need arose, Army sent a third C.C.S. forward and the rearmost of the three then reverted to Army command. The Corps field ambulance was used not only for the provision of a Corps exhaustion centre but also to furnish sections to look after pockets of immobile post-operative cases and to hold some 200 of these. To this unit the Corps psychiatrist was attached and did excellent work in separating those cases that could be treated and quickly returned to their units from those which needed to be evacuated to the base psychiatric centres.

Evacuation from C.C.S. to base was by 146 M.A.C., 18 M.A.S. and detachments of the A.F.S. Some 115 cars were usually available, quite an adequate number for the purpose.

When the attempt to pierce the Hitler Line made by Canadian I Corps on May 19 failed, XIII Corps was assigned the task of maintaining pressure in the Aquino area while a large-scale assault was launched in the area of Pontecorvo. Indian 8th Division was called up from Dragoni to protect the right flank of XIII Corps.

Ind. 21st Inf. Bde. was employed to assist Polish II Corps in the capture of Piedimonte S. Germano. On May 20 this brigade took up a position on the right of XIII Corps and moved forward to attack Point 115, about five hundred yards below Piedimonte, a village lying at the foot of Monte Cairo and forming an outpost of the Hitler Line. Piedimonte was finally captured on May 25.

While the Canadians were breaking into the Hitler Line, Ind. 19th Inf. Bde. moved through Ind. 21st Inf. Bde. and advanced to Castrocielo, which was entered without opposition on May 25. By 1000 on the 26th the brigade was in Roccasecca and the area between the village and Route 6 was cleared. Elements of Ind. 19th Inf. Bde. then moved up to the River Melfa but could advance no further since all the bridges were down. Early on the 27th, however, a bridgehead across the Melfa was established.

Ind. 17th Inf. Bde. was now ordered to advance on Arce in order to relieve pressure on Canadian I Corps which had also crossed the Melfa and was encountering stubborn opposition. Ind. 17th Inf. Bde. passed through the bridgehead established by Ind. 19th Inf. Bde. at Vicchio on the 27th and closed in on the village of Frajoli. The Germans were now pulling back and Frajoli, Monte Pavone and Arce were all occupied by the 29th.

Indian 8th Division was then unleashed for the pursuit beyond the Liri to Monte S. Giovanni and thence through the hills to Veroli. Ind. 21st Inf. Bde., seizing Monte Mero and Colle Lizzulo in the early hours of May 29, thereafter concentrated in Arce and occupied Fontana

Liri, its patrols crossing the Liri. On the 30th Anitrella was captured and on the 31st Monte S. Giovanni was occupied. Ind. 19th Inf. Bde. then captured Veroli on June 2 after stiff fighting.

This rapid advance of Indian 8th Division did much to relieve the pressure on other formations and facilitated the task of 78th Division, which made good progress. From Veroli Indian 8th Division moved on to Vico nel Lazio over mountain tracks. It was entered on June 3.

The line of evacuation was along good roads and the divisional M.D.S. was always able to choose a good site near the main highway. Stretcher-fitted jeeps made good use of the cross-country roads and there was but little hand-carrying. Throughout the period the division was always able to hold one of the field ambulances in reserve.

One company of each of the two field ambulances engaged was brigaded to open an A.D.S. when required. A M.D.S. was opened by the H.Q. of one field ambulance as far forward as possible and the remaining company held in reserve. The second field ambulance opened a M.D.S. in the rear to deal with the sick, while the H.Q. and one company of the third field ambulance was held in reserve. This field ambulance opened a M.D.S. in front of the 'battle' M.D.S. when the divisional front had advanced and the 'battle' field ambulance began to function as a staging post, later passing into reserve. In this way a chain of medical units was formed, unrolling in front and rolling up behind as the medical commitments in the rear were taken over by Corps and Army medical units.

When Ind. 21st Inf. Bde. was assisting Polish II Corps in its attack upon Piedimonte, one company of 29 (Ind.) Fd. Amb. was brigaded while H.Q. 33 (Ind.) Fd. Amb. opened the first battle M.D.S. on Route 6, about three miles to the east of Cassino, on May 20. For units still in rear areas 31 (Ind.) Fd. Amb. opened a M.D.S. in the vicinity of Dragoni.

On May 22, H.Q. and one company of 29 (Ind.) Fd. Amb. moved up to the site of the battle M.D.S. from Dragoni, remaining on wheels and in reserve. On May 25, H.Q. 29 (Ind.) Fd. Amb. opened a M.D.S. to receive divisional sick and the M.D.S. of 31 (Ind.) Fd. Amb. closed in the Dragoni area and moved up to the site of the battle M.D.S. to remain in reserve. On May 28, H.Q. 31 (Ind.) Fd. Amb. moved to a site about a mile to the north-west of Aquino on Route 6 and opened a second battle M.D.S. A F.D.S. was established nearby and functioned as an advanced surgical centre. 29 (Ind.) Fd. Amb. passed into reserve. On May 31, 29 (Ind.) Fd. Amb. moved to Arce and opened the third battle M.D.S. The M.D.S. of 31 (Ind.) Fd. Amb. then ceased to deal with battle casualties and took in the sick for the rear areas. 33 (Ind.) Fd. Amb. passed into reserve.

For the final advance to Vico, 33 (Ind.) Fd. Amb. opened the fourth

battle M.D.S. at Casamari on June 2 and to it a detachment of a F.D.S., two F.S.U.s. and one F.T.U. were attached.

Lt. Sec. 2 (Ind.) C.C.S. moved from Vairano to S. Vittore, five miles behind the first battle M.D.S. on May 19, its heavy section following on the 22nd. On June 1 the light section again moved forward to Santa d'Aquino, near the site of the second battle M.D.S. where the heavy section joined it on the 3rd.

Evacuation from the C.C.S. was by way of the control post at Capua to 16 C.G.H. at Cancellò.

N.Z. 2ND DIVISION

When the attack opened on May 11, N.Z. 6th Bde. was holding the Terelle sector, N.Z. 5th Bde. was resting in the Volturno valley and N.Z. 4th Bde. was resting at Pietramelara. The N.Z. artillery went into action, supporting the Polish attack upon the monastery. On the 13th/14th the N.Z. armour was called upon to support 4th Division in the Liri valley. In the next few days this armour led the infantry in a left hook thrust that cut Route 6. 4 (N.Z.) Fd. Amb. sent one officer with two ambulance cars along with the armour.

By May 29 Terelle, Belmonte and Atina had been cleared by the New Zealanders. The Maoris entered Sora on May 31. Thereafter the New Zealanders pursued the retreating Germans along Route 82 towards Balsorano and Avezzano, following the banks of the upper Liri River, until they were checked before Balsorano.

On June 6 the Germans withdrew and the New Zealanders entered Balsorano. Thereafter the division moved back along Route 6 to Arce, there to rest.

5 (N.Z.) Fd. Amb. established its M.D.S. in Atina on May 30, while the M.D.S. of 4 (N.Z.) Fd. Amb. dealt with the divisional sick at San Pasquale, between Sant' Elia and Cassino. To the M.D.S. at Atina the N.Z. surgical team from 1 N.Z.G.H. and 2 F.T.U. were attached. Abdominal cases were evacuated to 1 C.C.S. at Presenzano.

On June 3 the M.D.S. of 5 (N.Z.) Fd. Amb. moved to half a mile south of Sora and remained there until June 17 when it proceeded to Arce. The M.D.S. of 4 (N.Z.) Fd. Amb. also moved forward towards Sora on June 4. 6 (N.Z.) Fd. Amb. was in reserve in Atina though its A.D.S., moving with N.Z. 6th Bde., got as far forward as Civitella Roveto, near Avezzano before it halted and returned to Arce. On June 7, 1 (N.Z.) C.C.S. moved from Presenzano to Frosinone, whence air evacuation was to 2 N.Z.G.H. at Caserta.

From the hills about Avezzano hundreds of escaped prisoners-of-war—British, Australian, New Zealand, South African, American, Indian and Russian—made their way into the New Zealand lines. 4 (N.Z.) Fd. Amb. was opened for the reception of these P.o.W. on June 17.



PLATE XVIII. Stretcher-bearers in Cassino Town.

(Imperial War Museum)



PLATE XIX. A mule litter.



PLATE XX. Evacuation from the Regimental Aid Post by Jeep with Stretcher Gear.

[Imperial War Museum]



PLATE XXI. A 3-ton Weapons Carrier used for the evacuation of casualties. Three stretchers on top tier, two below.



PLATE XXII. A Regimental Aid Post. Anzio Beach-head.

[Imperial War Museum



PLATE XXIII. A Main Dressing Station. Anzio Beach-head.



PLATE XXIV. Forward Surgery.

[Imperial War Museum]



PLATE XXV. Forward Dentistry.

[Imperial War Museum]

N.Z. Casualties.

	<i>Killed</i>	<i>Wounded</i>	<i>Missing</i>	<i>P.O.W.</i>
Terelle (Mountain sector)	115	590	1	3
April 11 - June 16				

5TH DIVISION

On May 28, local advances began on the whole of the divisional front in the Anzio beachhead. 17th Inf. Bde. on the left flank continued to evacuate to the A.D.S. of 141 Fd. Amb. on the coast road. 13th Inf. Bde. in the central sector cleared to the A.D.S. of 164 Fd. Amb. in a valley south-east of Ardea. 15th Inf. Bde. on the right flank evacuated to the A.D.S. of 158 Fd. Amb. in a deep German medical post.

As the Germans withdrew northwards, 5th Division followed on their heels as far as the south bank of the Tiber. The M.D.S. of 164 Fd. Amb., which moved by road from Naples as soon as the road was cleared, opened at Pomezia in a large civic centre on June 14. It was called upon to deal with only a few casualties. The M.D.S. of 141 Fd. Amb. opened at Ostia on June 6 to receive the divisional sick. It closed on the 9th, for the division was now about to move to a concentration area at Pignataro. 158 Fd. Amb. remained in the Anzio medical area. On June 15 it closed and moved by sea to Naples.

1ST DIVISION

The field ambulances not being used for the establishment of battle M.D.Ss. were opened for the reception and retention of sick, minor wounded and exhaustion cases. Until the break-out, 137 Fd. Amb. provided stretcher accommodation for 240 sick while 3 Fd. Amb. offered similar accommodation for 100 exhaustion cases and 100 sick. A psychiatrist from U.S. VI Corps was attached to 3 Fd. Amb. and was in charge of the exhaustion centre which received all exhaustion cases from X Corps.

2 Fd. Amb. was used exclusively for the reception and distribution to C.C.Ss. and the other field ambulances of all battle casualties and sick from forward areas. 3 and 137 Fd. Ambs. could hold sick for a maximum of ten days. Evacuation of these from these units was direct to hospital ship and not through the C.C.Ss. Just over 50 per cent. of the sick admitted to the M.D.Ss. of these units were treated and returned to their units direct.

In expectation of the break-out, 137 and 3 Fd. Ambs. were closed on May 30 and prepared to move. On June 4 the M.D.S. of 3 Fd. Amb. moved forward and 2 Fd. Amb. was closed. At first one A.D.S. in support of each infantry brigade maintained evacuation from the R.A.Ps., but later, when the line of advance of X Corps followed a single axis, one A.D.S. serving both of the forward brigades was sufficient. The ambulance cars of all the divisional field ambulances were pooled

under command of the transport officer of one of them, usually at the location of the previous A.D.S. as leap-frogging occurred. A small first-aid party was stationed at this site. This arrangement proved to be the most useful, for this party was able to cater for the needs of the many units, such as gunners and engineers, which were moving forward in the wake of the infantry and armour. Furthermore, this party acted as a staging post for ambulance cars and as a roadside first-aid post for accidents and the like.

After the fall of Rome the division was concentrated south of the Tiber. The field ambulances opened their M.D.Ss. in or near to brigade concentration area.

V CORPS

In the Adriatic sector, on May 11, V Corps consisted of Indian 4th and 10th Divisions, 23rd Armd. Bde. and 7th Armd. Bde. Gp. For the time being this sector was relatively quiet for both sides had gathered their main strength for the decisive battles in the west. V Corps underwent continual changes in composition in the first half of 1944 as divisions left for the west or returned therefrom for service in a relatively quiet area.

INDIAN 4TH DIVISION

Indian 4th Division, returning from Cassino, relieved Indian 8th Division in the Adriatic sector on April 10. Here it remained until May 30, when it was relieved by an Italian formation and thereupon side-stepped to the right to relieve Indian 10th Division.

When, on June 7, the Germans began to withdraw to the north in this sector, Ind. 7th and 11th Inf. Bdes. were charged with the task of harrying them. On June 10, Ind. 7th Inf. Bde. entered Chieti and Pescara unopposed and Ind. 11th Inf. Bde. reached Francavilla. Thereafter, being relieved by a Polish formation, the division moved back to the vicinity of Campobasso.

Medical cover was provided as follows :

32 (Ind.) Fd. Amb. provided a M.D.S. for Ind. 11th Inf. Bde. at Torre Nuova on the Sangro. This site proved to be too malarious, however, and so the M.D.S. moved to the east bank of the River Perano. 17 (Ind.) Fd. Amb. provided a M.D.S. for minor sick at Atessa. 26 (Ind.) Fd. Amb. provided a M.D.S. for Ind. 5th and 7th Bdes. at Lanciano. Priority I and II cases were evacuated direct from the A.D.Ss. to 1 C.C.S. at Lanciano. Priority III cases went to 1 C.C.S. and 9 (Ind.) C.C.S. at Torino di Sangro, whither it had moved from Vasto on April 24, on alternate days and exhaustion cases to 216 Fd. Amb. at Casalbordino.

On April 20 Lanciano was bombed and the M.D.S. of 26 (Ind.) Fd. Amb. was hit. A total of 124 casualties occurred among the personnel of this field ambulance, 15 Fd. Hyg. Sec. and a malaria control unit. Of these, 10 died. 26 (Ind.) Fd. Amb. was then closed, to open again on April 29 about a mile to the south of Lanciano.

During the months of April and May experiments were undertaken to devise a single saddle seat for evacuation along tracks too narrow for the bilateral type. Ultimately a general service saddle, fitted with a simple back support, waist band and hand grip, was evolved for sitting cases. It became clear, however, that the casualties should never be tied to their seats as it was found that, when the necessity arose, difficulty was usually encountered in unfastening them.

The use of jeeps for evacuation from forward areas came to be indispensable. A simple and effective stretcher-carrying gear was designed for the jeeps which provided the maximum of balance and convenience without interfering with the all-purposes nature of the vehicle. One stretcher extended from a rest bar fixed to the front bumper back over the bonnet to the non-driving seat, with the handles of the stretcher fixed to two loops fitted to the back of the seat. The other stretcher extended from the back of the driving seat, in which were two similar iron loops for stretcher handles, over the rear of the vehicle, where it rested on a horizontal bar fixed to the vehicle and protruding about a foot in the rear of the vehicle. Sufficient space was therefore left for one sitting case in addition.

32 (Ind.) Fd. Amb. undertook experiments to minimise, if not solve, the problems of evacuation across flooded rivers. A simple aerial ropeway, suspended upon bipods on either side of the river, carrying a light trolley on which a stretcher could be hitched, was perfected and subsequently became an item of special equipment known as 'the flying fox' to be carried by each field ambulance of a division. The bipods could be improvised, if necessary, by tying together two folded stretchers. Other apparatus designed for the same purpose included an eight-man raft made by lashing together nine stretchers and covering the whole with a lorry tarpaulin.

When Indian 4th Division took over the coastal sector from Indian 10th Division on June 3, 26 (Ind.) Fd. Amb. established a divisional M.D.S. at San Vito, to the south of Ortona. To the M.D.S. there were now attached one F.D.S. and two F.S.U.s. for the treatment of priority casualties. 17 (Ind.) Fd. Amb. opened a M.D.S. at Torino di Sangro for the reception of the divisional sick, while 32 (Ind.) Fd. Amb. remained in reserve. When the Germans withdrew on June 7, 17 (Ind.) Fd. Amb., with Ind. 7th Inf. Bde., and 32 (Ind.) Fd. Amb. with Ind. 11th Inf. Bde., established a series of A.D.Ss. and M.D.Ss. in rapid succession, while 26 (Ind.) Fd. Amb. functioned as the rear M.D.S.

INDIAN 10TH DIVISION

Indian 10th Division reached Italy from the Middle East during the latter part of March 1944. It consisted of Ind. 10th, 20th and 25th Inf. Bdes. and brought with it 14, 21 and 30 (Ind.) Fd. Ambs. and 12 (Ind.) Fd. Hyg. Sec.

On April 22 the division relieved Canadian 1st Division in the Adriatic sector and entered the line on the right of Indian 4th Division. Here it remained until June 3, when Indian 4th Division took its place. Indian 10th Division thereupon moved to Venafro.

During its tour of duty in the line there was no major engagement. There was much aggressive patrolling, however, and in the earlier part of the period the weather was exceedingly bad.

Medical cover was provided as follows :

14 (Ind.) Fd. Amb. provided the battle M.D.S. at P. del moro di Acquabella (two miles south of Ortona). 21 (Ind.) Fd. Amb. provided a M.D.S. for minor sick at Torino di Sangro. 30 (Ind.) Fd. Amb. was in reserve at San Vito. One company of each field ambulance was attached to a brigade to provide an A.D.S.

APPENDIX XIII

ALLIED ARMIES IN ITALY (ALLIED CENTRAL MEDITERRANEAN FORCE).
ORDER OF BATTLE. JANUARY 22, 1944 (Abbreviated)

15 Army Group

N.Z. 2nd Division . . . in Termoli area. Passed from u/c Eighth Army January 19.

U.S. Fifth Army

U.S. 1st Armd. Division,
less Combat Command
'B'

U.S. 45th Division . . . relieved by 3rd Algerian Division
January 10.

U.S. 1st Special Service
Force in Caserta area.

Italian 1st Motorised
Group in Sorrento area.

U.S. II Corps

U.S. 34th Division . . . diversionary attack Cassino area January
20.

U.S. 36th Division . . . attack across Rapido January 20.

Combat Command 'B' of
1st Armd. Div. in Mignano area.

U.S. VI Corps

U.S. 3rd Division }
Br. 1st Division } . . . landing in Anzio area.

French Expeditionary Corps took over U.S. VI Corps sector January
3.

2nd Moroccan Division .	attacking S. Croce.
3rd Algerian Division .	took over U.S. 45th Division sector January 10.
3rd & 4th Gp. Tabors .	
2nd Tk. Gp.	
Br. X Corps	assault on R. Garigliano started on January 17.
5th Division	from Eighth Army to Fifth on January 6 in Minturno area.
46th Division	attacking across R. Garigliano.
56th Division	in Castelforte and Damiano areas.
23rd Armd. Bde. . . .	on R. Garigliano.

Eighth Army

Polish 3rd Carpathian Division	not in Army area.
Canadian 5th Armoured Division	moving to Army area u/c XIII Corps January 25.
Canadian I Corps	not in Army area.
V Corps	
Canadian 1st Division .	approaching Tollo.
Indian 8th Division . .	east of Orsogna.
2nd Para. Bde.	u/c Indian 8th Division.
Cdn. 1st Armd. Bde. . .	
XIII Corps	
Indian 4th Division . .	relieved N.Z. 2nd Division January 16.
78th Division	north of Agnone.
Cdn. 11th Inf. Bde. Gp.	u/c Indian 4th Division January 20.
4th Armd. Bde.	moving to United Kingdom.

APPENDIX XIV

ALLIED CENTRAL MEDITERRANEAN FORCE (A.C.M.F.) MEDICAL UNITS.
DECEMBER 1943—MARCH 1944

Strength of British and Commonwealth troops:

Eighth Army	197,422
V Corps	75,856
Br. Component U.S. Fifth Army	38,494
Base & L. of C. Troops	
No. 1 District	22,157
„ 2 „	202,879
„ 3 „	145,970
	<hr/>
	682,778
	<hr/>

(1) *Under Command Eighth Army*

C.C.Ss.	7, 12 (acting as V.D.T.C.), 18, 19, 2 (Ind.), 1 (N.Z.), 3 (Pol.), 5 (Pol.)
Fd. Ambs.	14, 132, 31 (Pol.)
F.S.Us.	4, 8, 23, 25, 26, 28, 29, 31, 1 (N.Z.), 47 (Pol.)
F.T.Us.	11, 12, 23, 2 (N.Z.), 50 (Pol.)
Adv. Depots Med. Stores	3, 10, detach. 344 (Pol.)
Mob. Bact. Lab.	1, 2, 5
Fd. Hyg. Secs.	13, 19, 25, 32
M.D.Us.	130, 151, 156, 157, 12 (Ind.), 1 (N.Z.), 'D'.
V.D.T.C.	102 (N.Z.)
I.S.S.	39

(2) *Under Command V Corps*

B.G.H.	50
C.C.Ss.	1, 5, 4 (Cdn.)
Fd. Ambs.	216, 2 (Cdn.), 4 (Cdn.), 9 (Cdn.), 29 (Ind.), 31 (Ind.), 33 (Ind.)
Fd. Hyg. Secs.	8, 2 (Cdn.), 20 (Ind.)
F.D.Ss.	1 (Cdn.), 2 (Cdn.)
F.S.Us.	7, 21, 22, 32, 1 (Cdn.), 3 (Cdn.), 4 (Cdn.)
F.T.Us.	3, 34, 1 (Cdn.), 3 (Cdn.)
Adv. Depot Med. Stores	7
Mob. Bact. Lab.	1 (Cdn.)
Mob. Ophthal. Unit	3
M.D.Us.	150, 163, 202, 15 (Ind.) Dent. Surg. Unit
V.D.T.C.	5
I.S.S.	48
A.M.C.U.	36, 80, 81, 2 (Cdn.), 3 (Cdn.)

(3) *Under Command Br. Increment U.S. Fifth Army*

C.C.Ss.	8 Lt., 14 Mob., 21 Mob.
F.D.Ss.	865, 866
F.S.Us.	1, 3, 5, 9, 10, 24, 30
F.T.Us.	1, 4, 25, 33
Fd. Hyg. Sec.	52
M.D.Us.	132, 133, 135, 130, 140, 152, 161
A.M.C.U.	78
X Corps Physical Exhaustion Centre	

(4) *Under Command I District*

B.G.Hs.	11, 33, 66
Fd. Hosp.	2
C.G.H.	14, section
Basuto Sec. of a general hospital	
Fd. San. Sec.	12

Con. Depot	9, 'B' Division
Adv. Depot Med. Stores	1
Dental Lab.	2
M.D.Us.	160, 164
Dental Centre	73, 74
B.R.C.S. Officers Con. Home	
A.M.C.Us.	13, 71, 73

(5) *Under Command 2 District*

B.G.Hs.	22, 45, 54, 71, 76, 83, 84, 93, 98, 1 Mob. Mil. Hosp., 1 (Cdn.), 5 (Cdn.), 3 (N.Z.), 1 (Pol.), 3 (Pol.)
C.G.Hs.	14
I.G.Hs.	11, 30
Expansions	15, 16, 17, 18, 25 (Psychiatric)
Basuto section	7
West African sections	42, 43
Mob. Mil. Hosp.	1
Yugo-slav. Mil. Hosp.	
C.C.Ss.	4, 9 (Ind.)
Fd. Ambs.	15, 151, 159
Con. Depots	11, 1 (Cdn.), 1 (N.Z.), 3 (Ind.), 1 (Pol.), Allied Officers B.R.C.S. Rest & Con- valescent Home
Base Depot Med. Stores	4
Adv. Depot Med. Stores	4, 7, 7 (Ind.), B.R.C.S. Store
Fd. Hyg. Secs.	11, 17, 20, 34, 36
A.M.C.Us.	12, 17, 35, 37, 46, 52
F.S.Us.	7, 22, 35, 3 (Cdn.), 1 (Ind.) Mob. Surg. Unit
B.T.Us.	4, 5
F.T.Us.	9, 34, 3 (Cdn.)
Mob. Bact. Lab.	1
Mob. Hyg. Lab.	3
Mob. Neurosurg. Unit	4
Max. Facial Team	1
Orthopaedic Centre	4
Mob. Mal. Lab.	1
Mob. Ophthal. Unit	2
Mob. X-ray Units	2, 1 (Ind.), 9 (Ind.)
Indian Fd. Lab.	12, 14, 16
P.A.Cs.	41, 44, 45, 47, 50, 52, 63
V.D.T.C.	6 (Comb.)
Brick Med. Sec.	32, 35
Port Detachments	6, 7, 'Y'
M.A.C.	60
A.C.C.	219

Br.S.S.	19
I.S.Ss.	18, 30
Army Dental Centres	85, 93, 95, 97
Army Dental Labs.	4, 10, 42
M.D.Us.	136, 137, 138, 141, 154, 163, 165, 166, 167, 201, 202
Br. Dental Surg. Team	2
Indian Dental Mech. Unit	3
Amb. Trains	B1, B3, B4, B5, B6
(6) Under Command 3 District	
B.G.Hs.	2, 58, 59, 65, 67, 69, 70, 72, 92, 103, 104, 3 (Cdn.), 14 (Cdn.), 15 (Cdn.), 2 (N.Z.)
C.G.H.	16
I.G.H.	one section
Expansions	19, 20, 22, 23, 26 (Psychiatric), 27, 28, 29, 30, 31, 33, 'A', 'B', 'C', 'D', West African (two), V.D. (200 beds), V.D. (100 beds), Cdn. (1 × 300) two
Con. Depots	7, 9, 10, 1 (Cdn.) B.R.C.S. Officers Con. Home, 4 (Ind.)
Fd. Ambs.	220, 226
Fd. Hyg. Secs.	1, 62
A.M.C.Us.	31, 32, 47, 76
Base Depots Med. Stores	2, 10
Adv. Depots Med. Stores	1 (Cdn.)
B.T.U.	5 (detach.)
Mal. Fd. Lab.	9, 10
Entomological Field Unit	
Operational Research Team	
from Directorate of Medi-	
cal Research	
Ind. Fd. Lab.	6
Mob. Hyg. Lab.	1
Ind. Ophthal. Unit	25
Ind. Surg. Team	24
Base Ophthal. Centre	
Neurosurg. Unit	5
Max. Facial Team	4
Chest Surg. Team	2
Orthopaedic Wing	17
M.A.C.	45, 74 (one pln.), Detach. 485 A.F.S. A.C.C.
A.C.C.	219 (one pln.)
Port Detach.	11
M.D.Us.	153, 155, 'D' Br. Dental Surg. Unit
Army Dental Labs.	9, 41, 44
Amb. Train	2

APPENDIX XV

X CORPS, MEDICAL ORDER OF BATTLE AND LOCATION STATEMENT AS AT MARCH 18, 1944

<i>Type of Unit</i>	<i>Location</i>	
8 C.C.S.	Sessa	A. S. C. 24 and 30 F.S.Us. 25 F.T.U. attached 5 and 9 F.S.Us. 33 F.T.U. 1 Mob. Ophthal. Unit Corps Exhaustion Centre attached closed 3 F.S.U. 152 M.D.U.
14 C.C.S.	Francolise area	
21 C.C.S.	Francolise	
865 F.D.S.		
866 F.D.S.	Sparanise	132 M.D.U. attached
220 Fd. Amb.	"	
52 Fd. Hyg. Sec.		
78 A.M.C.U.		
25 M.A.C.		
485 A.F.S., A.C.C.		
With divisions and areas		
133 M.D.U.		u/c 4th Division
140 "		"
161 "	Capua	attached M.I. Room

APPENDIX XVI

ORDER OF BATTLE AS AT MAY 11, 1944 (abbreviated)

H.Q. A.A.I.

V Corps Adriatic Coast Sector
 Indian 4th Division
 Indian 10th Division
 23rd Armd. Bde.
 7th Armd. Bde. Gp.

EIGHTH ARMY

X Corps Apennine Sector
 N.Z. 2nd Division
 Italian 1st Motorised Gp.
 S.A. 12th Mot. Bde.
 24th Gds. Bde.
 2nd Para. Bde.
 Cdn. 11th Inf. Bde. Gp.

- XIII Corps Cassino and R. Rapido Sector
 4th Division
 78th Division
 Indian 8th Division
 6th Armoured Division
 Cdn. 1st Armd. Bde.
- Polish II Corps Cassino Sector
 3rd Carpathian Division
 5th Kresowa Division
 Pol. 2nd Armd. Bde.
- Canadian I Corps south of Mignano
 Canadian 5th Armoured Division north of Capua
 Canadian 1st Inf. Division . S. Agata area
 25th Tk. Bde.
- Army Reserve
 S.A. 6th Armoured Division less
 S.A. 12th Mot. Bde.

U.S. FIFTH ARMY

- U.S. IV Corps
 U.S. 36th Division Army Reserve
- U.S. II Corps Garigliano Sector
 U.S. 85th & 88th Divisions
- U.S. VI Corps Anzio Beachhead
 U.S. 3rd, 34th & 45th Divisions
 U.S. 1st Armoured Division
 1st and 5th Divisions
- French Expeditionary Corps Aurunci Mountains Sector
 1st Motorised Division
 2nd Moroccan Division
 3rd Algerian Division
 4th Moroccan Mountain Division
 1st, 3rd & 4th Gp. Tabor

CHAPTER 4
THE CAMPAIGN IN ITALY (contd.)
C. June–December 1944

PRÉCIS

THE GERMANS next attempted to stand on a line across the southern edge of Lake Trasimene, but this was quickly pierced and the Allied northward advance continued. Arezzo was captured by XIII Corps on July 16 and the Germans withdrew to the line of the river Arno. On the west coast U.S. Fifth Army captured Leghorn on the 23rd. XIII Corps fought its way into the southern half of Florence on August 4 and within a week had gained possession of the southern bank of the Arno on both sides of the city. In the Adriatic sector the Polish Corps stormed into Ancona on July 18 and by August 10 had reached the line of the River Cesano.

The Allied armies now faced the formidable Gothic Line—the Rimini–Pisa Line. On August 22, the Polish Corps crossed the River Metauro in the Adriatic sector. On the 25th, Eighth Army struck and in less than three weeks of hard fighting V Corps and Canadian I Corps had broken through the immensely strong Gothic Line and had advanced some thirty miles. Then on September 10, U.S. Fifth Army broke through the Giogo and Futa Passes in the mountains north of Florence to reach within twelve miles of Bologna by the end of October. On December 4, the Canadians captured Ravenna and V Corps and the Polish Corps crossed the Lamone. This winter offensive was maintained until early January 1945 when it was halted by the inclemency of the weather on the line of the River Senio.

(i)

The Pursuit to the Arno

EIGHTH ARMY

Rome was but the starting point of a pursuit that was to stretch a hundred and thirty miles to the north. With its capture came no pause, for the pursuit was swift and relentless.

But the railway from Cassino to Rome had been completely demolished and Route 6 very badly damaged. The railhead was at Mignano, a hundred miles to the south, and the nearest port the little one at Anzio. Thus for the pursuit no more than nine divisions could be

employed for more could not be supplied. As reinforcements reached the Germans the Allied armies prepared to advance, Eighth Army being somewhat hindered by the disposition of U.S. Fifth Army athwart its route. General Leese decided to advance on a front of four divisions using X and XIII Corps. To bring his main strength into the plain of the Tiber he moved gradually to the left, XIII Corps advancing along both banks of the river and up the road from Tivoli to Palombara, X Corps through the Simbruini mountains towards Rieti on Route 4. S.A. 6th Armoured Division passed from Canadian I to XIII Corps and the Canadians went into reserve. Indian 8th Division passed from XIII Corps to X Corps on June 5 and moved on Subiaco while N.Z. 2nd Division advanced on Avezzano. 1st Armoured Division, newly arrived, went into Eighth Army reserve and the Polish Corps and V Corps passed u/c A.A.I.

6th and S.A. 6th Armoured Divisions of XIII Corps moved on Routes 3 and 4 with 4th Division, with 25th Tk. Bde. under command, on the right flank from Tivoli to Palombara. The passage of the South African division through Rome to reach Route 3, the Via Flaminia, was facilitated by U.S. Fifth Army and, advancing swiftly, it captured at Civita Castellana a German C.C.S. with some 600 patients on June 6 and sent patrols to Borgheno where they found the bridge down. 6th Armoured Division on Route 4, the Via Salaria, had to fight for Monte Rotondo on June 7 and on the following day for a ridge running west from Monte Maggiore. In the central Apennines Indian 8th Division led X Corps through Guarcino to Subiaco and to Arsoli, which was reached on June 9. On its right N.Z. 2nd Division entered Balsorano on the 6th and Avezzano on the 10th.

On June 7, General Alexander instructed Eighth Army to advance with all possible speed direct on the general area Florence-Bibbiena-Arezzo and U.S. Fifth Army direct on the general area Pisa-Lucca-Pistoia. The armies were to maintain general contact on their inner flanks but were not to wait on each other's advance. Their commanders were authorised to take extreme risks to secure their objectives before the Germans could reorganise or be reinforced.

The pursuit on the Adriatic flank was to be halted so as to diminish the demand for transport and bridging material. V Corps had moved up to the line of the Foro and was in possession of Pescara and Chieti. The direction of XIII Corps' advance was changed; Arezzo and not Terni and Narni now became its objective. S.A. 6th Armoured Division was directed to Orvieto and 78th Division and 9th Armd. Bde. were ordered to follow the South Africans. X Corps took over from XIII Corps the sector east of the Tiber. X Corps now commanded 6th Armoured Division on the left, Indian 8th Division on the right with Indian 10th Division, 7th Armd. Bde., 25th Army Tk. Bde., K.D.G.

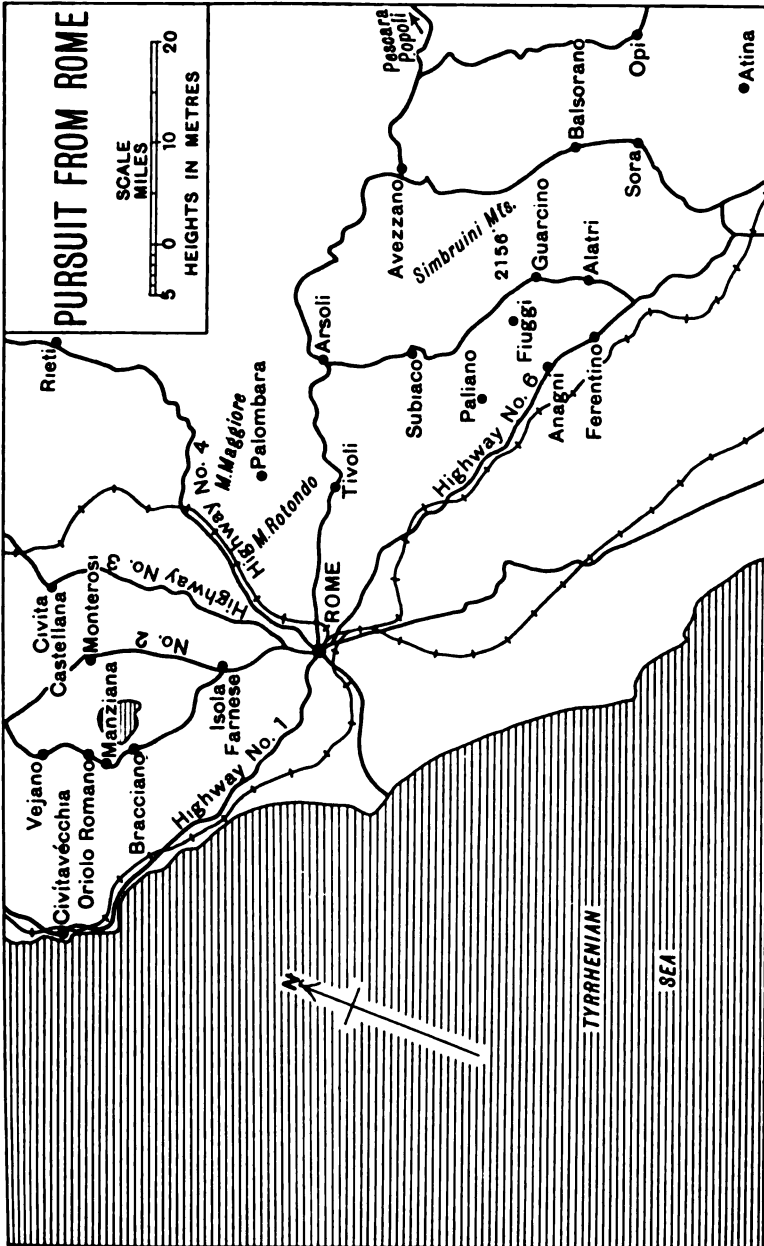


FIG. 71. The Pursuit from Rome.

and 12th Lancers in reserve. West of the Tiber XIII Corps, led by S.A. 6th Armoured and 78th Divisions, had 4th Division and Canadian 1st and 9th Armd. Bdes. in reserve. At Avezzano N.Z. 2nd Division passed from X Corps to Eighth Army's command.

XIII Corps' main axis of advance was through Viterbo, captured by U.S. VI Corps on June 9, and Bagnoregio to Orvieto. On June 9, S.A. 6th Armoured Division, assisted by a U.S. task force, broke through strong German defences first at Vallerano and then at Celleno. Then, with 24th Guards Bde. in the lead, the division pushed on to the river gorge south of Bagnoregio, there to be checked by a defensive line that ran west to Lake Bolsena and east to the Tiber. Here were also halted patrols of 78th Division advancing from Civitella d'Agliano.

On June 13, the Guards attacked Bagnoregio while S.A. 11th Armd. Bde. probed for a passage to the west and the South African infantry climbed the gorge to enter the village from the east as the Guards came in from the south. By the evening the South African armour was within four miles of Orvieto. On the right 78th Division was in sight of this town, notable for its remarkable black and white cathedral and strikingly situated on an oval platform of a great isolated rock which rises sheerly out of the valley. On the 14th the Germans withdrew north-west into the hills and Orvieto was taken.

X Corps took the Terni road, reached this town early on June 15 and at once passed on to Perugia. The K.D.G., u/c 6th Armoured Division, went forward into the country about Perugia and the valley of the Tiber. 12th Lancers, u/c Indian 8th Division, advanced along Route 3 to Foligno and into the Apennines on the right. The Lothians drove two miles past Todi without a check. Indian 8th Division defeated strong rearguards at Massa Martana, Osteria Bastardo, Foligno and Assisi and got across the River Chiascio.

Perugia, the principal city of Umbria standing a thousand feet above the valley and containing within its walls a vast heritage of works of art, was now within Eighth Army's grasp. 6th Armoured Division moved on Route 75 along the northern shore of Lake Trasimene. Indian 8th Division proceeded north along the Tiber valley and, on June 18, turned right-handed off the road and for three days fought its way through the rough country between the Chiascio and the Tiber. As 6th Armoured Division advanced against Perugia its defenders withdrew to a perimeter around the city, but when Monte Malbe, which overlooks the city from the west, was captured the Germans abandoned the city during the night of June 19/20.

In XIII Corps sector 9th Armd. Bde. on the right and S.A. 6th Armoured Division on the left advanced from Orvieto to fight violent actions at Ficulle and Allerona. The advance was greatly impeded by a break in the weather, for on the 17th there were thunderstorms and



FIG. 72. The Pursuit from Rome (contd.).

torrential rain which continued without ceasing during the next two days. There was but one good road, Route 71; all the others quickly became impassable. Nevertheless, the advance continued, if but slowly, and the walled village of Città della Pieve was captured and Monte Petrarvella reached. 11th Bde. of 78th Division quickly cleared Monte Petrarvella and took the villages of Paciano and Panicale while 36th Bde. captured and held the village of Strada.

The Germans were now standing on a line between Lakes Trasimene and Chiusi and it was clear that they meant to hold it. The pursuit was halted with XIII Corps south-west of Trasimene and X Corps just north of Perugia. The Trasimene line, roughly a hundred and thirty miles to the north of Rome, was based on the Chienti River in the east and ran along the high ground to the north of Perugia, through Lake Trasimene, near which the Carthaginian Hannibal destroyed a Roman Army in 217 B.C., through the hill town of Chiusi and thence along the lines of the Rivers Astrone, Orcia and Ombrone. By holding this line the Germans could gain time for the completion of the prepared position that ran along the summits of the northern Apennines—the Gothic Line—protecting the rich lands of northern Italy.

In spite of their recent defeat with its heavy losses, certain advantages lay with the Germans. The supply lines of the Allied armies had become severely stretched. Not until Leghorn and Ancona had been captured and the ports put into commission could their difficulties be eased. Their railhead was still at Roccasecca, two hundred miles away, and much time must pass before the destruction of the railways north of this could be repaired.

The assault on the Trasimene line had, perforce, to be a fully organised attack that demanded most careful preparation. The nature of the terrain and the paucity of roads capable of bearing the traffic were such that the operations of X and XIII Corps had to be almost independent until they met after Arezzo had been taken. Owing to supply difficulties each corps could only employ one armoured division and one infantry division with the appropriate artillery. With X Corps were 6th Armoured and Indian 8th Divisions; with XIII Corps were S.A. 6th Armoured and 78th Divisions with 4th Division in reserve.

By June 20, XIII Corps was fiercely engaged between the south-west shore of Lake Trasimene and Lake Chiusi and was probing the outer defences of Chiusi, the city of Lars Porsena which in the 18th century had been redeemed from marsh and malaria by shifting the watershed twenty-five miles to the south. 78th Division succeeded in taking the German forward positions in the vicinity of the villages of Sanfatucchio and Vaiano and the Pucciarelli ridge, holding this for two days against furious counter-attack. On the 24th, 38th Bde. advanced and 36th Bde., passing through, got across the Pescia, a quarter of a mile north of the

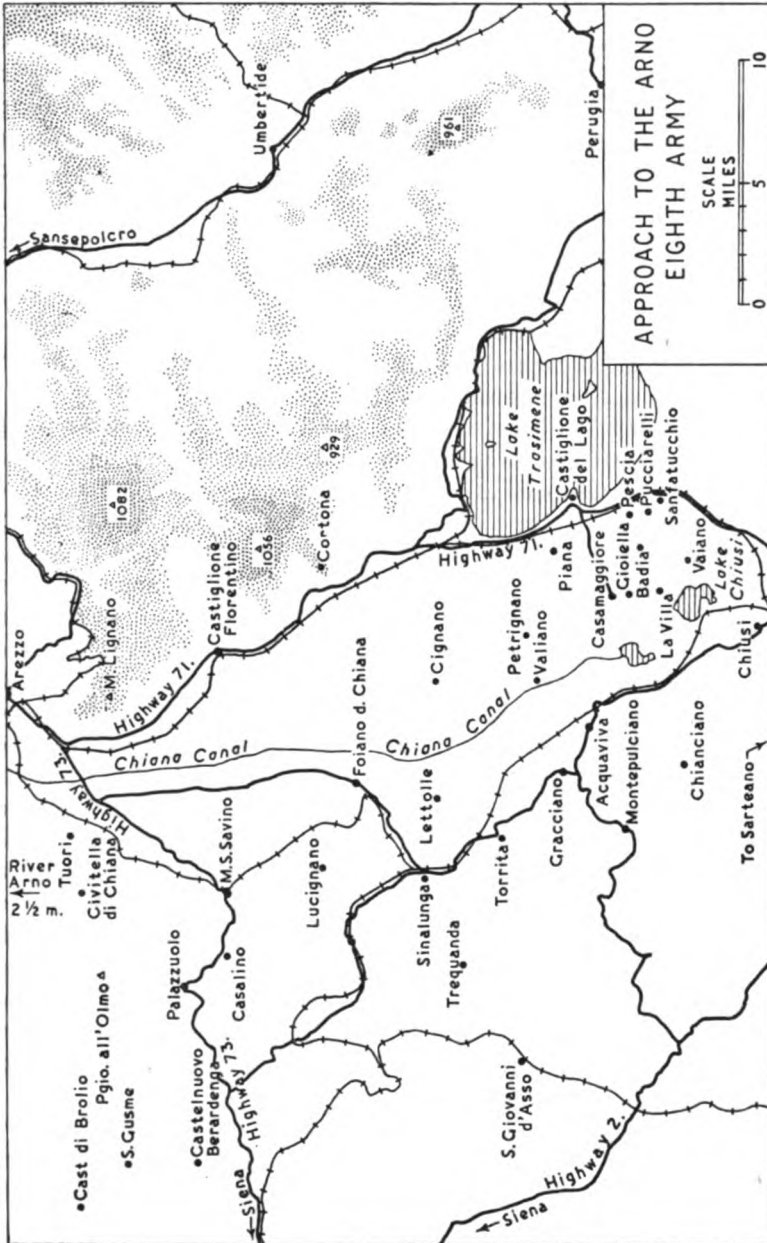


FIG. 73. Eighth Army. The Approach to the Arno.

village of the same name. 28th Bde. of 4th Division, supported by the Canadian armour, fought its way towards Badia and La Villa. 4th Recce. Regt. reached the north shores of Lake Chiusi and the Germans promptly abandoned Chiusi during the night of June 25/26. Blown bridges and innumerable demolitions denied progress to the armour in this area and so the Canadian armoured brigade moved westwards along the ridge from Chiusi. The Sappers having repaired the bridge on Route 71 over the Pescia, 36th Bde. crossed during the night of June 24/25 to advance about a thousand yards. On the 26th, 10th Bde. of 4th Division, with Cdn. 12th Armd. Regt., advanced from La Villa to Gioiella, which was taken after violent fighting, and reached the top of the ridge between Casamaggiore and Frattavecchia. Then 36th Bde. took these two villages. The Trasimene line was thus broken after eight days of bitter fighting. The wet valley and the innumerable irrigation channels greatly reduced the pace of the S.A. armoured division advancing through the Chiana valley. By first light on June 29 the Germans had broken contact along the whole front and Castiglione del Lago was entered without opposition.

As XIII Corps advanced 4th Division caught up with German rear-guards south-east of Valiano while 78th Division, on the right, reached Piana. 24th Guards Bde., on the left of S.A. 6th Armoured Division, took Montepulciano, secured the road between it and Acquaviva and S.A. 11th Armd. Bde. pressing on, encountered German rear-guards between Gracciano and Valiano. These were out-flanked and the advance continued. On July 2 the Germans abandoned Sinalunga and Bettolle and left rear-guards to cover Foiano d. Chiana. These were brushed aside and Cignano and Foiano d. Chiana were entered. By mid-day the armour was crossing the canal.

On the 3rd the advance quickened and patrols entered Cortona, a typical Tuscan hill town eight hundred feet above the plain, unopposed. On Route 71, 6th Armoured Division moved forward to find the hills to the south of Monte Lignano and overlooking Castiglione Fiorentino strongly held. 4th Division took Tuori, Monte Altuzzo and Poggio all' Olmo before being checked. S.A. 6th Armoured Division, advancing from Lucignano and Sinalunga, reached Casalino on July 4 and pushed on to Palazzuolo on Route 73. 24th Guards Bde., after desperate fighting, crossed Route 73 and reached San Gusmè north-east of Siena and three miles beyond it on the 5th.

The Germans now stood on the dominating heights south of Arezzo from Monte Castiglione Maggiore to Castel di Bròlio. 61st Inf. Bde. of 6th Armoured Division, supported by armour, established itself high up on the forward slopes of Monte Lignano and Monte Castiglione Maggiore on July 7, but 4th Division could make no headway towards Pergine in the Arno valley nor could S.A. 6th Armoured Division in the Chiana valley.

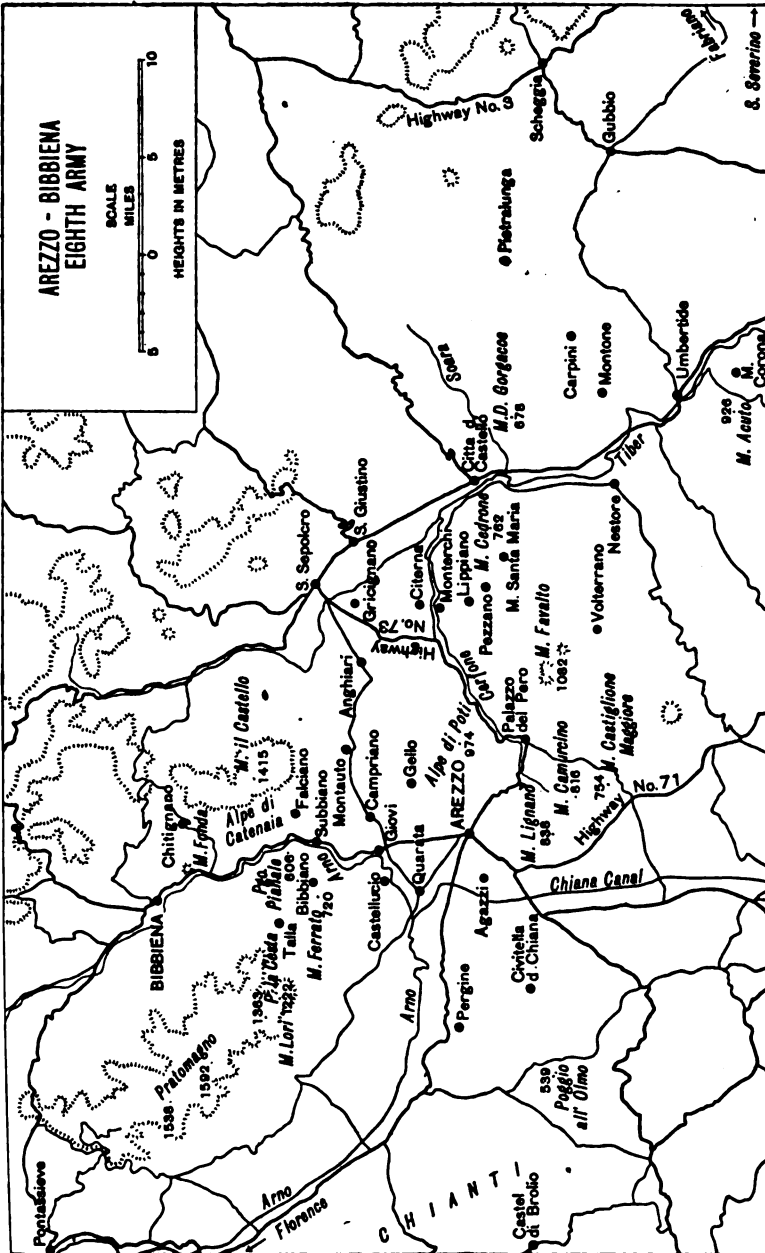


FIG. 74. Eighth Army. Arezzo-Bibbiena.

N.Z. 2nd Division was called forward from its training area in the Liri valley to join XIII Corps and an improvised force built out of 9th Armd. Bde.—'Sackforce'—was used to guard XIII Corps' exposed right flank between Indian 10th Division, north of Perugia, and XIII Corps.

The plan for the taking of Arezzo was as follows. The New Zealanders, relieving 'Sackforce', would open the battle on July 15 and protect 6th Armoured Division's flank by occupying the heights from Monte Castiglione Maggiore to Monte Lignano. On the left South African 6th Armoured and 4th Divisions would simulate an attack to divert attention. 6th Armoured Division would capture the high ground to the south-east, cut the roads north and west of Arezzo, cross the Arno, advance along its right bank and seize Arezzo.

1st Guards Bde. and 17/21st Lancers, leading the advance, met stubborn resistance and the New Zealanders, having taken the crest of Monte Lignano, had a hand-to-hand battle for the reverse slopes. By the end of the day the Guards had driven a wedge into the centre of the German position and the New Zealanders were firmly established on Monte Lignano and overlooked Arezzo. During the night the Germans broke contact and Arezzo was entered by 26th Armd. Bde. about 1000 hours on July 16.

X Corps, moving north from Perugia, took no great part in this operation. North of Perugia the country was so difficult that only infantry could manoeuvre. It was not until June 27, when the German defences west of Trasimene were crumbling, that any progress was made. Then the Germans withdrew and X Corps moved forward. Indian 10th Division relieved 6th Armoured and Indian 8th Divisions. On July 8, Indian 4th Division arrived in the sector west of the Tiber and, with 9th Armd. Bde. under command, pressed on towards San Sepolcro. By the morning of the 13th, Ind. 5th and 7th Bdes. had occupied the great ridge between Monte Santa Maria and Monte Favalto. East of the Tiber Indian 10th Division forced the Germans back step by step.

Following the capture of Arezzo the paths of X and XIII Corps again diverged, X Corps advancing east of the great mountain mass of the Pratomagno towards Bibbiena while XIII Corps wheeled north-west against Florence. XIII Corps' plan was to advance with 6th and S.A. 6th Armoured Divisions, the former in the valley of the Arno and the latter astride the road to Radda, with 4th Division in the hills between them. On the left of XIII Corps the French were soon to join U.S. Seventh Army (for Operation 'Anvil') and in their place Indian 8th Division was to advance on the axis of the road from Siena to Empoli. XIII Corps' front would then extend to about forty miles.

On July 16, as the Germans withdrew in front of Arezzo, XIII Corps advanced about ten miles. 6th Armoured Division on the right was

checked at Castiglion Fibocchi. In the centre 4th Division was halted near Ricasoli, a little to the west of Monteverchi. On the left S.A. 6th Armoured Division reached the outskirts of Radda. On the 18th resistance weakened for the reason that the Americans had captured Pontedera on the Arno so that the Germans facing the French about Poggibonsi and XIII Corps about Radda were compelled to withdraw. Monte Marone and Monte Querciabella were taken by the South Africans and Monte San Michele by 1st Scots Guards and Castiglion Fibocchi by 3rd Welsh Guards.

N.Z. 2nd Division was then brought up to attack northward from Castellina in Chianti towards San Casciano in the Val di Pesa and thence towards the Arno a few miles west of Florence while S.A. 6th Armoured Division, astride the road from Radda to Greve and Impruneta, made a parallel advance. 4th Division, with its right flank on the Arno, was to advance and cross the river east of Florence while on the flanks Indian 8th and 6th Armoured Divisions would follow as opportunity occurred.

There was heavy fighting around Greve but S.A. 6th Armoured Division, with 24th Guards Bde. u/c, won the crest of Monte Domini and the nearby Monte Fili by the evening of the 23rd and thereafter continued to advance till checked in the vicinity of Monte Collegalle and Mercatale. On the left of the South Africans the New Zealanders had fought for Tavarnelle Val di Pesa on Route 2 and Sambuca to the east of it and had reached to within two miles of San Casciano. By the early hours of July 25 they were on the line of the road from San Casciano to Montespertoli and, along with the South Africans, were facing the Olga Line.

In the valley of the Arno, 6th Armoured Division's line of advance was dominated by the heights of the Pratomagno and 4th Division, blocked on Route 69, was obliged to move its axis to a poor road through Castelnuovo. When the advance of the South Africans to Monte Collegalle compelled the Germans west of the Arno to withdraw, they stood on the slopes of Monte Scalari, at San Giovanni on Route 69, at Loro under the Pratomagno, and blocked the road to the west from Figline to guard their open flank.

Indian 8th Division advanced steadily on the left on the axis Tavarnelle and Montespertoli, up the valley of the Elsa to Certaldo. On July 25, Ind. 21st Bde. was within two miles of Montespertoli with Ind. 19th Bde. on its left. The former brigade was checked but the latter advanced to Cambiano, north of Castelfiorentino at the western end of the Olga Line, behind which lay the Paula and Mädchen Lines. On XIII Corps' right, under Monte Scalari, 4th Division was facing the Lydia Line. As it prepared to attack Monte Scalari N.Z. 5th Bde. and S.A. 6th Armd. Bde. assaulted the Olga Line. The Germans withdrew to the Paula and

Mädchen Lines. As they were doing so they were caught by N.Z. 5th Bde. and promptly N.Z. 6th Bde. and the armour struck northwards to cross the Pesa at Cerbaia and to enter San Casciano. Here they were checked, as were the South Africans between Strada and Impruneta.

12th Bde. of 4th Division stormed Monte Scalari and held it against five vigorous counter-attacks on July 29 while 4th Recce. Regt. captured Figline on Route 69.

On the morning of July 27, Indian 8th Division occupied Montespertoli and San Donato a Libizzano, so securing the New Zealanders' flank. On the 28th the New Zealanders opened their attack on the Paula Line over the wooded slopes north of Cerbaia and at once met with the most violent resistance. N.Z. 4th Armd. Bde. secured a hold under the ridge between Faltignano and La Romola while N.Z. 6th Bde. seized and held San Michele.

The German line (the Paula, Mädchen and Lydia lines) now ran from Montelupo to Figline. West of Montelupo patrols of Indian 8th Division had reached the Arno between Montelupo and Empoli. On the night of July 29, the New Zealanders resumed the attack, N.Z. 4th Armd. Bde. against La Romola, N.Z. 5th Bde. towards Faltignano. These places were quickly taken. S.A. 6th Division took Strada in Chianti and 4th Division captured Sezzate and Monte Maggio. East of the Arno 17/21st Lancers, advancing along the river bank, reached the vicinity of Incisa on Route 69. On XIII Corps' other flank patrols of Ind. 21st Bde. crossed the Pesa between Montelupo and Ginestra and advanced some 2,000 yards.

On August 1, N.Z. 2nd Division, with all three brigades forward, resumed the attack to secure the heights of the Pian dei Cerri ridge. La Poggiona on the crest was taken and the battle for Florence was won.

As the Germans east of Route 2 withdrew, 24th Guards Bde., relieved at Strada by 4th Division, and S.A. 11th Armd. Bde. converged on Impruneta which they entered without opposition. The South Africans took Tavarnuzze but were checked a mile below Galluzzo while 24th Guards Bde. approached the Ema bridge at San Giusto. On the flanks Indian 8th Division and 4th Division were moving swiftly forward.

On August 3 the Germans withdrew behind the lower Arno and patrols of the South African division passed through the southern outskirts of Florence to reach the bank of the Arno. Of the six bridges spanning the Arno in Florence only the Ponte Vecchio had been left intact and the approaches to this on either side had been blocked by the destruction of the houses. In any case it was not strong enough to carry heavy military traffic. N.Z. 2nd Divisional Cavalry cleared the area between the Arno and Route 67 and Indian 8th Division secured the high ground above Montelupo and the suburban area opposite Signa.

4th Division was still in action in the loop of the Arno opposite Pontassieve. The monastery and hill at Incontro were stormed on August 8 and on the following day all resistance south of the river collapsed. Eighth Army stood along the Arno from Pontassieve to its boundary at Fucecchio, 6th Armoured Division facing Pontassieve, 1st Division (transferred from U.S. Fifth Army to XIII Corps) in the eastern outskirts of Florence, Indian 8th Division south of Florence and N.Z. 2nd Division in the vicinity of Empoli and in contact with the right flank of U.S. Fifth Army. On August 13, Indian 8th Division forced its way into Florence, thrusting the Germans beyond the Mugnone Canal running through the northern outskirts of the city. On August 16, 1st Division took over from Indian 8th Division.

On XIII Corps' right X Corps had continued to advance against Bibbiena, pausing for a while to attack the Alpe di Poti. This operation was undertaken by two brigades of Indian 4th Division and a regiment of 9th Armd. Bde. while Indian 10th Division, with the remaining brigade of Indian 4th Division, protected the right flank.

For Indian 4th Division's attack Route 73 could not be used for it was dominated by the German positions. It was necessary to construct a road from Volterrano to Palazzo del Pero on Route 73. This was finished and open to jeeps by July 15, by which time Palazzo del Pero had been taken by XIII Corps. The fall of Arezzo had weakened the Alpe di Poti positions and so when, on July 17, Ind. 7th Bde. attacked, the Germans fell back and Monte Cedrone was stormed by Ind. 10th Bde. X Corps then began to close in on Città di Castello.

East of the Tiber Ind. 20th Bde. took Monte delle Gorgacce on July 15 and 16 and Ind. 25th Bde. fought its way to the River Soara. The Corps then regrouped for the attack on Bibbiena, lying in a narrow plain at the head of the valley of the upper Arno. The plan of attack was that Indian 4th Division should move up the valley while Indian 10th Division guarded the right flank and then struck north-westward across the Catenaiian Alps from the plain of San Sepolcro. The units of 'Sack-force' (K.D.G. and 1/60th Rifles) would revert to Corps and the armoured car regiments would cover the gap left by Indian 10th Division when it crossed the River Tiber.

For some days Indian 4th Division made small gains in the Alpe di Poti and, on July 21, tanks crossed the Soara a mile east of its confluence with the Tiber and surprised the German infantry. The infantry then secured the ridge north of the Soara. On the morning of the 22nd, Indian 10th Division, now regrouped, set out from Monte Santa Maria to Monterchi. On the 26th, Ind. 20th Bde. occupied the ridge of Citerna. Meanwhile, in the Alpe di Poti Ind. 7th and 11th Bdes. took Monte Veriano on the 24th and Ind. 5th Bde. Monte Castiglione in hand-to-hand fighting and the high ground at Gello. The Germans then gave

ground all along X Corps front and Indian 4th Division reached the entrance of the valley of the upper Arno while Indian 10th Division secured a base in the San Sepolcro plain from which to attack across the Alpe di Catenaia and capture Bibbiena.

On August 2, Ind. 11th Bde. entered Subbiano without opposition and, on the 3rd, Ind. 5th Bde. was a thousand yards east of Falciano. Ind. 20th Bde. was concentrated on Castello Montauto where the jeep track started and, on the left, a composite armoured force—'Lindforce'—covered the Corps' extension westward to 6th Armoured Division's boundary. 9th Armd. Bde. was brought from the right flank to the sector vacated by 'Lindforce'.

The attack caught the Germans while thinning out and Ind. 20th Bde. made rapid progress to secure the twin peaks of Monte il Castello. West of the Arno Indian 4th Division quickly took the village of Bibbiano. Then followed much confused and heavy fighting to end in deadlock along the whole line.

On August 4 the whole plan for Eighth Army's assault on the Gothic Line was changed. Previously it had been intended that X and XIII Corps should conjointly attack towards Bologna. Now it was decided to launch the major attack in the Adriatic sector using Polish II, Canadian I and V Corps while X and XIII Corps held on to the positions they had occupied. XIII Corps was to be transferred to U.S. Fifth Army and X Corps would assume the task of protecting Eighth Army's left flank. 46th and 56th Divisions, which had returned to Italy from the Middle East and had replaced 5th and 78th Divisions which had left for the Middle East, were transferred from X to V Corps and Indian 4th Division, passed from the command of X Corps. Indian 10th Division was now required to hold the whole of X Corps front from Anghiari to the crest of the Pratomagno while 9th Armd. Bde. assumed responsibility for the right of the Corps' sector east of Anghiari. 6th Armoured Division from the west of the Pratomagno was to return to XIII Corps on August 12. Bibbiena remained untaken.

In the spring of 1944 in the Adriatic sector V Corps, under the direct command of A.A.I., had been holding a thirty mile front from Palena in the Abruzzi to the sea. It consisted of two divisions, Canadian 1st and Indian 8th. In June V Corps came to consist of the Italian Utili Division on the left and Indian 4th Division on the right and, without any major operation, advanced first to the line of the Pescara and then to that of the Saline. On June 15, the Polish Corps returned to the sector to relieve Indian 4th Division and, on the 17th, took over from V Corps which went into 15 Army Group reserve at Campobasso. The Poles were instructed to move with all possible speed to Ancona. This they did, and by the 20th had crossed the Aso, taken Fermo and pushed on to the Chienti, across which a small bridgehead

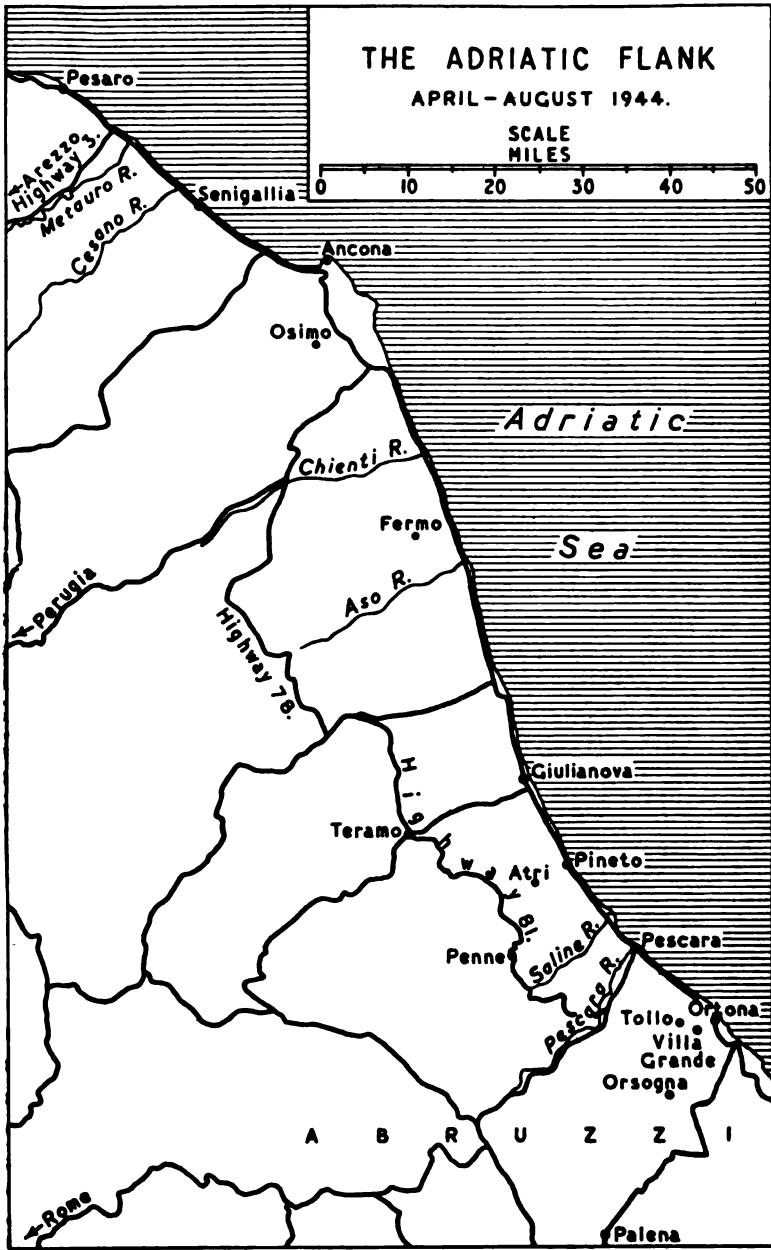


FIG. 76. The Adriatic Flank. April-August 1944.

was established. On the 22nd the Germans counter-attacked and pushed the Poles back across the river. On June 29 the Germans withdrew from the line of the Chienti and the Poles immediately followed, to enter the town of Osimo on July 6. On the 18th, they were in Ancona and at once pressed on to Senigallia and beyond to cross the Cesano on August 10. By the early morning of August 22 the Poles were on the south bank of the Metauro, the start point for the assault on Pesaro, the eastern bastion of the Gothic Line.

U.S. FIFTH ARMY

In U.S. Fifth Army's sector ran two first class roads, Route 1, the Via Aurelia, and Route 2, the Via Cassia, and several good lateral roads. South of the Arno there were no naturally strong defensive positions.

First of all the Americans secured a six mile perimeter beyond Rome. Then, on June 6, U.S. VI Corps with U.S. 34th Division on the coast and U.S. 36th Division further inland, each supported by an armoured combat command of U.S. 1st Armoured Division, reached Bracciano and entered Civitavecchia on the 7th. U.S. 34th Division took Tarquinia on the 8th and thereafter went into reserve as U.S. 36th Division went into the lead. Combat Command A, on the 7th, pushed through Manziana, Oriolo Romano, to reach the vicinity of Vejano. On the 9th it was in Viterbo, largely destroyed by the Allied Air Force. Then Combat Command B moved north-west from Vetralla to seize Tuscania on the 9th. When U.S. 36th Division reached Canino the combat commands withdrew to the area of Bracciano lake.

On June 11, U.S. IV Corps took command of this sector but U.S. 34th and 36th Divisions remained therein, H.Q. U.S. VI Corps moving back to Naples for service with U.S. Seventh Army elsewhere (Operation 'Anvil').

U.S. II Corps, with U.S. 85th and 88th Divisions and a task force from U.S. 1st Armoured Division, moved north from Rome astride Route 2. It got to within a few miles of Viterbo by the 9th, when it was relieved by the French Expeditionary Corps and Eighth Army's left boundary was moved west to include Viterbo. U.S. 85th Division withdrew to a rest area and U.S. 88th Division moved forward until it reached the new inter-army boundary near Civita Castellana, built on a series of steep declivities in an area ruined by man's ignorance and thoughtlessness. Twenty-five centuries ago this was a region of flourishing cities and prosperous agriculture. Deforestation, war and neglect had introduced malaria and had reduced its economy to that of the primitive peasant.

The French promptly formed a pursuit force out of 1st Motorised and 3rd Algerian Divisions, which at once pushed northwards to reach Montefiascone and, after severe fighting, Bolsena on June 14. On the

west side of Lake Bolsena the Algerians pushed through Piansano and Valentano to cut Route 74 near Latera, which they occupied on June 13. By the 17th the Algerian Division stood on a curving line from Vallerona through Santa Fiora to just south of Piancastagnaio. On its left Moroccan units were moving on Cinigiano. 1st Motorised Division fought its way from Acquapendente to Radicofani on the 18th and took Sarteano. By the 19th both divisions were nearing the River Orcia. 1st Motorised Division, due to join U.S. Seventh Army for Operation 'Anvil', was now relieved by 2nd Moroccan Division.

U.S. 36th Division ran into stiffening opposition as it advanced on Grosseto, a modern town that contains an older one enclosed in sixteenth century fortifications and highly malarious. It was checked at Orbetello, sited on the edge of a salt lagoon, and held until the 12th, when the Germans withdrew. The division then reached Route 74 and crossed the Albegna on the 13th to fight its way into the little town of Magliano. By the 15th it had reached the Ombrone, which was crossed. The Germans then withdrew and Grosseto was taken.

Plans for the seizure of Elba had been prepared in conjunction with those for the advance on Rome. The island was of importance in that its seizure would cut the coastal traffic supplying the Rome area. It was not possible, however, to launch the operation at this time. It was next considered as part of the general advance following the fall of Rome. For the operation a composite force was brought into being. Its ground element was entirely French—9th Colonial Infantry Division from Corsica. The supporting naval task force was predominantly British, the supporting air task force largely American. The assault took place on June 17 and by the 19th all resistance had been overcome.

At the Quebec conference in August 1943, it had been decided that the Allied forces in the Mediterranean area should contribute to the invasion of France by effecting a lodgement in the area of Toulon and Marseilles (Operation 'Anvil' or 'Dragoon') as a diversion to the invasion of Normandy. This was confirmed at the Cairo conference in December 1943.

On May 22, 1944, General Alexander was warned that A.A.I. must be prepared to free one U.S. corps H.Q., three U.S. divisions and all the French divisions then serving in Italy for employment in Operation 'Anvil'. On June 14 he was instructed to withdraw U.S. VI Corps H.Q. at once, U.S. 3rd Division on June 17, U.S. 36th Division on June 27, one French division on the 24th and a second French division during the first week of July. At the same time he was informed that the destruction of the German armed forces in Italy south of the Pisa-Rimini line must be completed and that there should be no withdrawal from the battle of any Allied forces that were necessary for this purpose.

So it was that U.S. Fifth Army in Italy lost its entire VI Corps with



FIG. 77. U.S. Fifth Army. The Approach to the Arno.

its 3rd, 36th and 45th Divisions and the whole of the French Expeditionary Force by the end of July. This serious diminution of strength necessarily had its profound effects upon the course of the Italian campaign. The vigour of the pursuit declined, the efficiency of the Allied military machine was greatly impaired and the Germans greatly advantaged. The victory before Rome could not be exploited. It is necessary, however, to recall that, because of decisions made in respect of overall strategy, the campaign in Italy is not to be considered apart from the major enterprise, Operation 'Overlord'.

On June 21, U.S. Fifth Army was on a fifty mile front running from a point about eight miles north of Grosseto to Sarteano, where it met the left flank of Eighth Army. On the extreme left of the line was U.S. 36th Division and on its right U.S. 1st Armoured Division, 3rd Algerian and 2nd Moroccan Divisions. North of Grosseto U.S. 36th Division made steady if slow progress in the rain. Piombino was entered without trouble. Then the division, under orders for U.S. Seventh Army, was relieved by U.S. 34th Division, which quickly took the villages of Suvereto, Belvedere and Sassetta and crossed the Bolgheri on the 29th to reach within half a mile of Cecina before it was checked. Cecina was captured on July 2 after three days of stubborn conflict.

On June 21, U.S. 1st Armoured Division was committed, Combat Command A on a line running north from Roccastrada on Route 73 and Combat Command B on a parallel course through Massa Marittima to the left. The former had to overcome opposition at the Torniella defile and between Radicondoli and Mensano; the latter encountered stiffer opposition but occupied Massa Marittima on the 24th and Castelnuovo on the 29th. On the following day Pomarance was taken and the Cecina crossed north of San Dalmazio. After repeated attempts to storm the walled town of Casole d'Elsa it was finally taken on July 4. U.S. 88th Division then relieved U.S. 1st Armoured Division and took Volterra, the loftiest of the Tuscan hill towns, eighteen hundred feet up, on July 5.

Further inland the French were facing strong defences along the River Orcia. On the night of June 21 they pressed forward to cross the Ombrone to reach Monte Acuto and beyond it through Casale towards Monticiano on the 24th. By the 28th the road from Monticiano for five miles eastwards to the bank of the Ombrone was cleared and San Quirico reached. On July 3, the Germans having withdrawn, the French entered Siena, its beauty unspoiled. The pursuit corps was then disbanded for 3rd Algerian Division was required to join U.S. Seventh Army. It was relieved by 4th Moroccan Division which at once pushed on through Poggibonsi to encounter stubborn opposition at Abbadia, Colle di Val d'Elsa and Sant' Andrea. This being overcome, Ligliano was taken, the valley d'Elsa cleared and Route 68, running from Poggibonsi to Cecina on the coast, crossed.

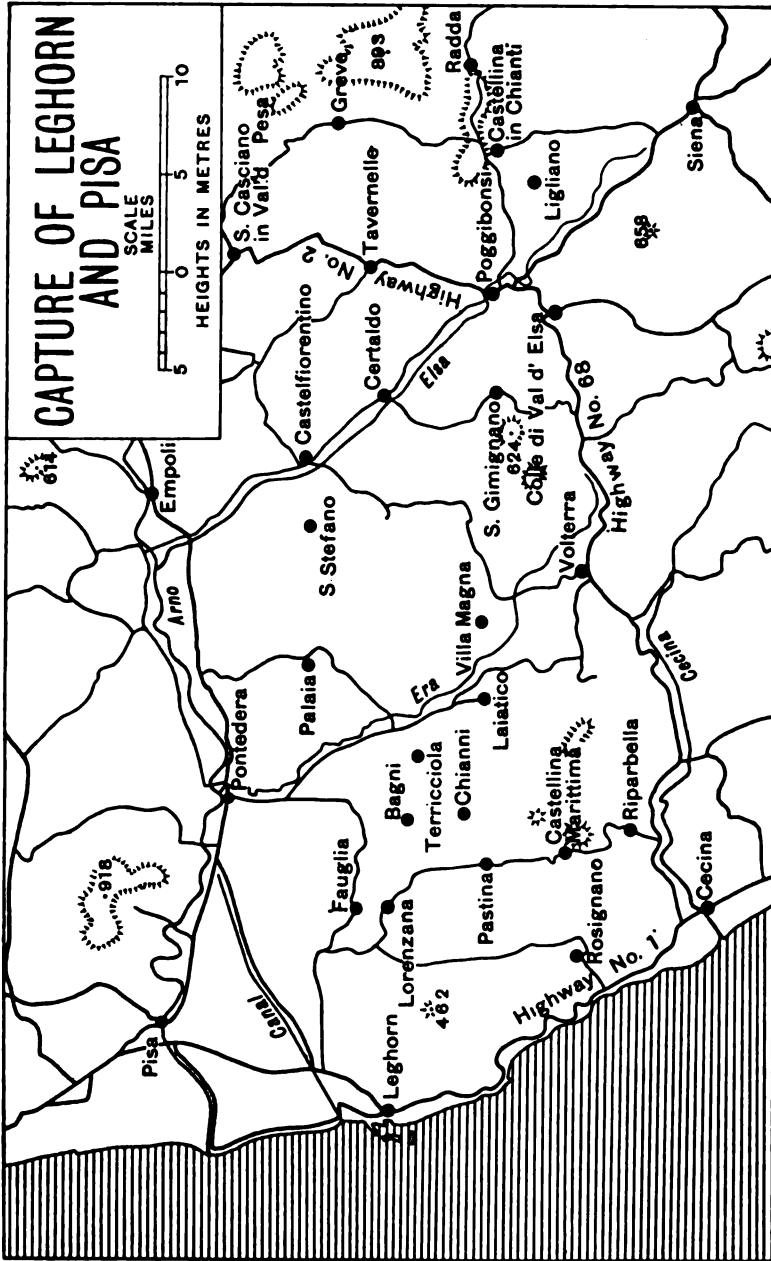


FIG. 78. The Capture of Leghorn and Pisa.

An armoured force was then organised by U.S. IV Corps for an advance up Route 1 from Cecina to Leghorn and beyond. After vicious fighting the hill town of Rosignano was cleared street by street by U.S. 135th and 442nd Regts. by July 7 while, in the hills to the east, Castellina Marittima was stormed on the 6th by U.S. 168th Infantry. On the 9th the village of Casale was taken and Pastina captured on the following day. By nightfall on the 16th the Americans were within three miles of the Arno river flats and Fauglia was captured. On the 18th, U.S. 135th and 363rd Infantry advanced on Leghorn, which was entered in the early morning on the 19th. The port had been demolished, the harbour blocked and the city heavily mined.

On the 22nd the advance was resumed. The mouth of the Arno was reached on the 23rd when that part of Pisa lying to the south of the river was entered. Its famous architectural group—cathedral, baptistry and leaning tower—was unharmed but the town was full of mines and booby-traps and under the fire of the German guns.

On the right of U.S. 34th Division U.S. 91st Division had advanced through Chianni, Bagni di Casciana and Pontedera to reach the Arno. Further to the right U.S. 88th Division, relieving U.S. 1st Armoured Division, had captured the old Etruscan walled city of Volterra and Laiatico and then Belvedere and Villamagna on July 15. Thereafter the division pressed on towards the Arno, which was reached by nightfall of the 18th.

Meanwhile the Goumiers of 4th Group of Tabors had battled for the many towered mediaeval Tuscan hill city of San Gimignano which, after stern fighting, was taken by the Moroccans on July 13. Thereafter the French Colonials took Ligliano and advanced to within a mile of Poggibonsi and to the outskirts of Castellina in Chianti. As the Germans withdrew in the American sector, the French moved into Certaldo and on to Castelfiorentino. There they were relieved by N.Z. 2nd and Indian 8th Divisions and withdrew to Naples to pass u/c U.S. Seventh Army.

MEDICAL ARRANGEMENTS

A.A.I.

HOSPITAL PLANNING

When Rome fell the General Staff expected that the Germans would stand on a line running through Viterbo and Terni. Plans were therefore made to provide 7,000 hospital beds in Rome. In the light of subsequent events, however, this number was halved. On July 1, 48 B.G.H. and 5 Cdn.G.H., each 600-bed, were opened in Rome while 8 C.C.S. had 200 beds available at Anzio. By the end of the month 104 B.G.H. and 30 I.G.H. were also open in Rome and one division of 10 Con. Depot had begun to admit patients. 21 C.C.S. was opened at Civita

Castellana for the staging of cases. The total beds then available in the Rome area numbered 3,475.

The location of the General Hospitals of the Allied Armies in Italy (excluding U.S. Medical Units) on July 1, 1944, will be found in Appendix XVII.

Meanwhile hospital sites were being reconnoitred in the forward areas in order to bring the coverage up to 3 per cent. Only one suitable site was immediately available in the operational zone, at Assisi. 5 B.G.H., which had been staging at Canello, was moved there to open 600 beds by August 1. It was proposed to move 11 B.G.H. (600) from Canello to Arezzo, or to Florence, if this had fallen before the move to Arezzo had been completed; 31 B.G.H. (600) from Canello to Bagni di Chianciano; 1 Cdn.G.H. (1,500) from Canello to Arezzo or to Florence; 18 I.G.H. (600) from Andria to Castiglione del Lago and H.Q. and one division 9 Con. Depot (1,000) to Bagni di Chianciano.

But no sooner had 11, 31 B.G.Hs. and 1 Cdn.G.H. completed their moves than the plans for the assault on the Gothic Line were changed. The main attack was no longer to be launched in the Florence sector and the troops required to hack their way over the mountains to Bologna. The greater part of Eighth Army was now to be moved back into the Adriatic sector where the major attack would be mounted. Three weeks, and no more, were left for the resiting and opening of these medical units before the battle began. Some 6,000 beds had to be provided in the province of Emilia.

2 Base Depot Med. Stores, 66 B.G.H. and one division of 9 Con. Depot were hurriedly moved up to Ancona, 13 Fd. San. Sec., two P.A.Cs. and one M.C.U. were called forward to Arezzo while 107 S.A.G.H., which had reached Italy in July, was waiting in 2 District for orders for forward movement.

EVACUATION

In the early stages of the advance to the Gothic Line evacuation from the forward areas was mainly by road and the ambulance car resources were stretched to the utmost. On the east coast, prior to the capture of Ancona, road evacuation to the railhead at San Vito came to exceed a hundred miles. To relieve the strain on road transport, air evacuation was developed to the maximum extent. The fullest co-operation was received from M.A.A.F. and 51 Troop Carrier Wing. Casualties at the rate of 400-500 a day were evacuated direct from the forward L.Gs. during peak periods. When Ancona became available for use by hospital ships, up to 2,000 casualties were evacuated by sea to Bari each week. The railways were rapidly repaired and by the end of August forward ambulance R.Hs. were in operation.

On September 10 the control of hospital shipping and ambulance

trains passed to A.F.H.Q. which then assumed command in Southern Italy.

By Sea

At the end of June the policy concerning the evacuation of long-term cases to the United Kingdom was changed. The standard was raised from 75 to 90 days' hospital expectancy. H.Ss. *Amra*, *Oranje* and *Atlantis* were allotted to the Mediterranean theatre. The restricted lying capacity of the *Oranje* led to an accumulation of lying cases and by the end of August additional shipping had to be obtained. Between July 1 and September 30, 4,508 long-term cases were evacuated to the United Kingdom.

Long-term Indian, U.D.F. and Polish tuberculosis and mental cases were cleared to the Middle East by H.Ss. *Tairea* and *Somersetshire*. During the period July 1–September 30, 2,280 casualties were evacuated.

In August the N.Z.H.S. *Wanganella* made one trip between Italy and New Zealand.

Prior to the establishment of the railhead at Rome, evacuation was by hospital carrier from Anzio to Naples. H.C. *St. Andrew* made two trips and H.C. *Leinster* one. Cases were staged at 8 C.C.S. and loading was by water ambulance.

When Ancona became available after August 21, a regular service was maintained by H.Cs. *St. Andrew* and *Leinster* and H.S. *Somersetshire* and the *Principessa Giovanna*. When H.C. *St. Andrew* struck a mine while proceeding empty to Ancona she was replaced firstly by the U.S. H.S. *John L. Meany* and later by H.S. *Leinster*.

To ease the bedstate in Southern Italy, voyages to Sicily were made by H.C. *St. Andrew* in July and by the *Toscana* and the ambulance transport *Perak* in September.

Between July 1 and September 30:

775 cases were carried from Anzio to Naples
8,088 cases were carried from Ancona to Bari
913 cases were carried from Italy to Sicily

9,776

By Air

During the early stages of the advance, evacuation was from Orvieto to Capodichino airport, Naples. When the Army medical area moved to Castiglione del Lago the air evacuation centre was transferred, on July 17, to the neighbouring Castiglione L.G. Head cases, however, were still flown from 59 B.G.H. at Orvieto. In the eastern sector air evacuation was from L.Gs. in the rear of II Polish Corps to Bari.

After the capture of Siena another air evacuation centre was established at Malignano L.G., just south of the city. All cases from Malignano and from Castiglione were flown to Naples.

When Eighth Army moved its greatest weight eastwards, air evacuation from Falconara L.G., north of Ancona, commenced. At first all cases were flown to Bari. Later, however, in order to avoid the long road journey between 1 Cdn.G.H. at Iesi and 14 Cdn.G.H. at Perugia, to make full use of 5 Cdn.G.H. in Rome, and so relieve 15 Cdn.G.H. at Caserta, all Canadian cases for air evacuation were directed, on and after September 5, to Galera airfield near Rome.

1 District's estimate for clearance of 1,000 cases by air and 1,600 by sea for the period September 12-15 was beyond 2 District's accommodation. Arrangements were therefore made with M.A.A.F. for all casualties, other than special cases for Bari, to be diverted to Naples. This was put into effect on September 11. On September 20, air evacuation from Malignano L.G. ceased and commenced from Castello airport, Florence, on the same day.

Towards the end of the month the Rome hospitals became uncomfortably full and so the air evacuation centres at Falconara and Castello began to clear to Naples. Between July 1 and September 30, 19,999 casualties were evacuated by air from the forward areas to base. It is of particular interest to note that P.M.O., M.A.A.F., placed one aircraft permanently at the disposal of O.C., 5 B.T.U., in order that transfusion materials might be delivered each day to the forward L.Gs.

By Rail

The clearance of the Rome hospitals to Naples by ambulance train began on July 10. During August the railways were repaired. Ambulance R.Hs. were established at Arezzo, Assisi and Iesi on August 10, 20 and 24 respectively, and the hospitals in these areas were cleared to Rome and Naples.

On the east coast evacuation by rail from San Vito dwindled as hospital ships began to use Ancona in increasing measure. Cases from the L. of C. south of Ancona continued to be evacuated by independent ward coaches attached to ordinary trains. Similarly inter-district transfer of New Zealand, Indian and U.D.F. cases to the east coast and of long-term British cases to the west coast continued to be by rail. A total of 11,377 casualties was cleared from the forward areas to base by rail.

There were nine ambulance trains available at the beginning of July. During August 1 (Egyptian), 2, 6, 70 and 71 Ambulance Train Units were disbanded to form 77, 78, 79 and 80 on W.E. XII/500/1. There were then eight ambulance train units all on the same W.E. and these were allotted to trains as follows :

- B.1: 77 Amb. Train Unit
 B.2: 78 Amb. Train Unit
 B.3: 21 (N.A.) Amb. Train Unit
 B.4: 12 (Ind.) Amb. Train Unit
 B.5: 20 (N.A.) Amb. Train Unit
 B.6: 79 Amb. Train Unit
 B.7: 80 Amb. Train Unit
 B.8: 22 (N.A.) Amb. Train Unit

EIGHTH ARMY

The evacuation chain as on June 9 is depicted in Fig. 79.

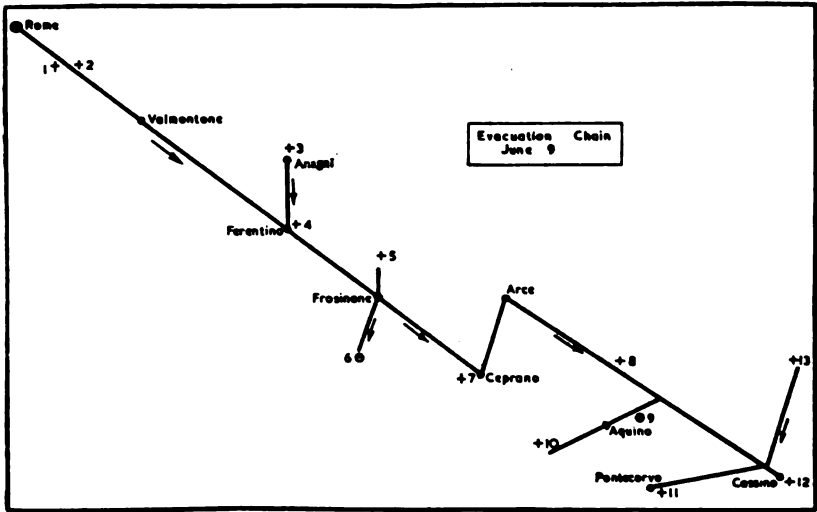


FIG. 79. Eighth Army. The Evacuation Chain. June 9, 1944.

- | | |
|--|------------------------------------|
| 1. 2 C.C.S. | 9 F.T.U. (Blood bank) |
| 2. 8 (S.A.) C.C.S. 'A' F.D.S. | 3 Adv. Depot Med. Stores |
| 3. 3 Cdn.G.H. | 6. Air Evacuation Centre |
| 4. 2 (Cdn.) F.D.S. | 7. 4 (Cdn.) C.C.S. |
| 5. 1 (N.Z.) C.C.S. | 3 (Cdn.) F.D.S., 8 (Cdn.) F.D.S. |
| 2 (Ind.) C.C.S. | 8. 4 C.C.S., 8 Mal. Fd. Lab. |
| 19 C.C.S. | 9. Air Evacuation Centre, Sec. 151 |
| 12 C.C.S. Lt. Sec. (V.D.T.C.) | Lt. Fd. Amb. |
| 132 Fd. Amb. | 10. 16 (Cdn.) F.D.S. |
| H.Q. 151 Fd. Amb. | 11. 5 (Cdn.) C.C.S. |
| 2 Mob. Ophthal. Unit | 12. Control Post |
| 2 Mob. Bact. Lab. (Shock Team attached.) | 13. 865 F.D.S. |

As the advance continued the medical units again moved forward and by June 23 their distribution and the evacuation chains of X and XIII Corps were as shown in Fig. 80.

During the fighting about Lake Trasimene that preceded the capture

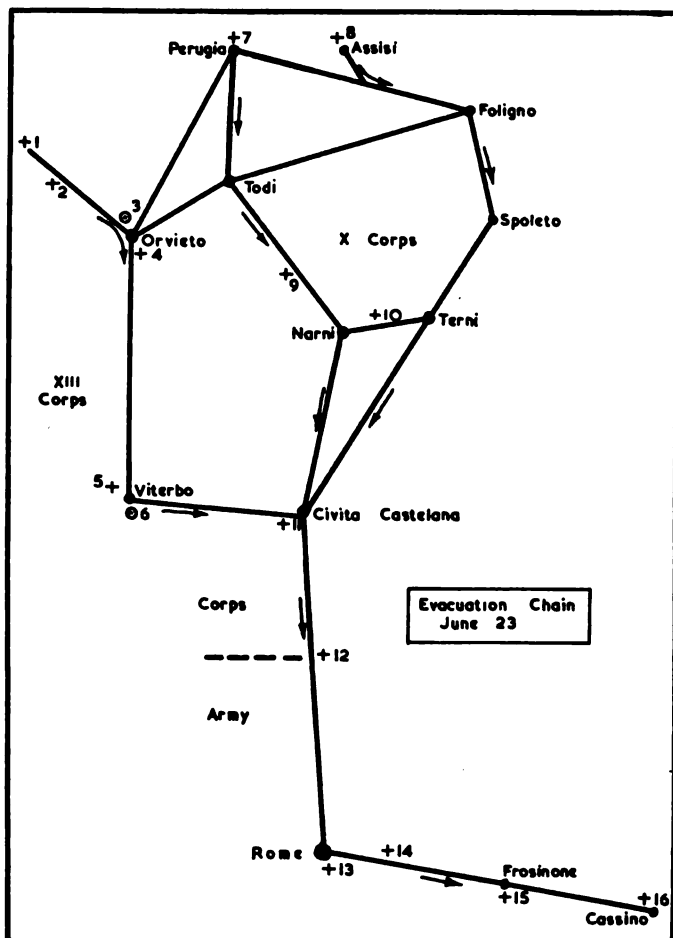


FIG. 80. X and XIII Corps. Evacuation Chains. June 23, 1944.

XIII Corps

- 1. 'C' F.D.S.
- 2. 'A' F.D.S.
- 3. Air Evacuation Centre
- 4. 4 C.C.S., 5 M.N.S.U.
4 M.F.S.U.
Mob. Ophthal. Unit
132 Fd. Amb.
- 5. 8 (S.A.) C.C.S.
- 6. Air Evacuation Centre

X Corps

- 7. 866 F.D.S.
- 8. 2 (Ind.) C.C.S. Hy. Sec.
865 F.D.S.
- 9. 2 (Ind.) C.C.S. Lt. Sec.

- 10. 'B' F.D.S., 18 I.S.S.
- 11. 15 C.C.S. Lt. Sec.

Army

- 12. 15 C.C.S. Hy. Sec.
3 Adv. Depot Med. Stores
- 13. 48 B.G.H., 5 Cdn.G.H.
- 14. 54 B.G.H., 59 B.G.H.
2 C.C.S., 3 (Ind.) C.C.S.
12 C.C.S. (V.D.T.C.)
9 Con. Depot
- 15. 1 (N.Z.) C.C.S.
151 Lt. Fd. Amb.
3 Adv. Depot Med. Stores
- 16. 3 District Control Post

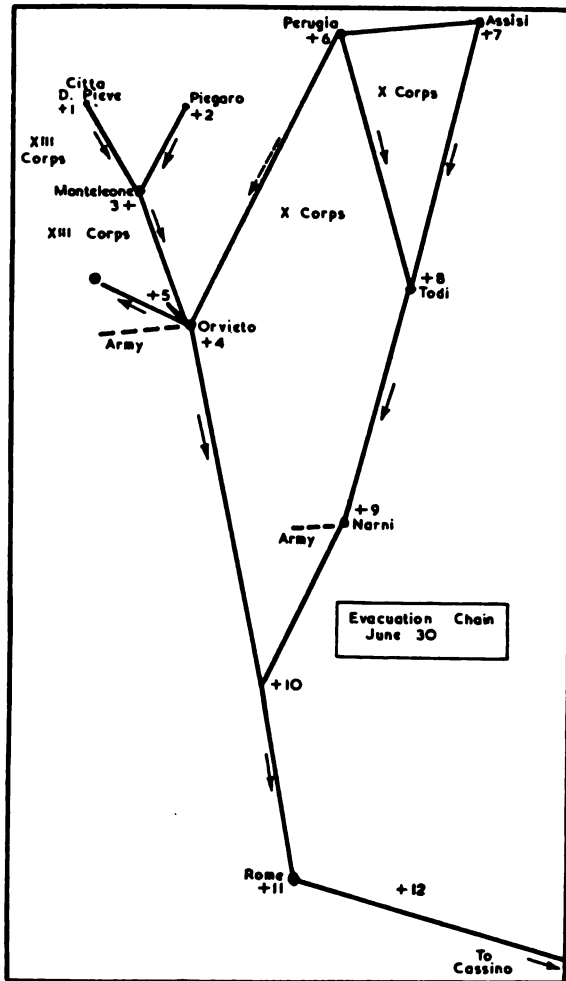


FIG. 81. X and XIII Corps. Evacuation Chains. June 30, 1944.

XIII Corps

1. 54 F.D.S.
2. 52 F.D.S.
3. 132 Fd. Amb.
4. 59 B.G.H., 4 C.C.S.
- 4 M.F.S.U., 5 M.N.S.U.
- Ophthal. Unit
- 12 C.C.S. Lt. Sec. (V.D.T.C.)
- 3 Adv. Depot Med. Stores

X Corps

5. 3 (Ind.) C.C.S. Hy. Sec.
6. 19 C.C.S., 866 F.D.S.
- 39 I.S.S., 1 Mob. Ophthal. Unit

Indian short-term sick from Assisi to Narni, British to Todi. For evacuation by air, to Orvieto.

7. 2 (Ind.) C.C.S., 865 F.D.S.

8. 14 C.C.S.

9. 53 F.D.S., 18 I.S.S.

Army

10. 15 C.C.S. Hy. Sec.
11. 48 B.G.H., 5 Cdn.G.H.
12. 54 B.G.H., 2 C.C.S.
- 12 C.C.S. Hy. Sec. (V.D.T.C.)
- 18 C.C.S.
- 3 (Ind.) C.C.S. Lt. Sec.
- 9 Con. Depot
- 4 Br. S.S.
- 7 Ind. Depot Med. Stores

of Arezzo and the continued advance to the line of the Arno, there was further forward movement of medical units. The location of these on June 30 and the evacuation chains of X and XIII Corps are shown in Fig. 81.

These arrangements worked smoothly. It was usual for the casualties to reach the hospitals in the Naples area within eight hours of the receipt of the wound. The Capua control post continued to ensure a satisfactory distribution of casualties among the different hospitals. Inevitably as the L. of C. extended difficulty increased. Priority of passage for loaded ambulance cars could not always be secured. However, evacuation by air did much to remove anxiety. U.S. transport planes, operating first from Aquino and thereafter from landing strips nearer and nearer to Perugia, did much to reduce the difficulties of evacuation by road to the Army medical centre six miles south of Rome. As the Army moved forward, staging posts were established along the (road) route; ultimately there were three of these.

On July 1 the distribution of medical units between Army and Corps was as follows:

	<i>F.D.S.</i>	<i>C.C.S.</i>	<i>F.S.U.</i>	<i>F.T.U.</i>	<i>200-bed Gen. Hosp.</i>
Eighth Army . . .	1	6	5	2	2
XIII Corps . . .	2	1	—	—	—
X Corps . . .	2	2	3	2	—
Polish II Corps . . .	—	2	4	2	1
Cdn. I Corps . . .	5	2	4	2	—

The six C.C.Ss. u/c Army were employed as follows:

Rome Medical Area	
2	short-term sick
12	venereal disease
18	malaria
Lt. Sec. 3 (Ind.)	Indian short-term sick at Orvieto.
Hy. Sec. 3 (Ind.)	staging Indian cases for air evacuation
15	Lt. Sec. staging cases for air evacuation
	Hy. Sec. at Civita Castellana staging for road evacuation to Rome
1 (N.Z.)	in reserve

The two 200-bed general hospitals u/c Army were employed as follows:

Rome medical area . . .	54 B.G.H.	an officers' hospital
Orvieto	59 B.G.H.	specialist cases and local sick
	detach. 4 Max. Fac.	
	Surg. Unit,	
	5 Mob. Neurosurg.	
	1 Mob. Ophthal. Sec.	

9 Con. Depot was established in Rome medical area for the reception of Eighth Army convalescents.

An air evacuation centre was established at Orvieto. Two sections of 151 Lt. Fd. Amb. and one R.A.F. evacuation unit provided loading parties, shelter and refreshment for the patients. As the airfield was some fifteen miles from Orvieto and was approached by a bad road, it was found desirable to stage patients overnight nearer the airfield. Lt. Sec. 15 C.C.S. was therefore opened a mile away from the airfield. 3,841 patients were evacuated by air to Naples in the first fortnight of June. Eighth Army was responsible for evacuation by road to the Rome medical area. A staging post was formed by the heavy section of 15 C.C.S. at Civita Castellana.

By the middle of July, Eighth Army had moved forward to the line of Arezzo. Road evacuation to the Rome medical area from the forward areas was now nearly a two hundred miles journey. It was therefore decided to move Eighth Army medical area from Rome to Lake Trasimene (Eighth Army Medical Area R 3801).

It comprised :

58 B.G.H.	specialist cases
4 Max. Fac. Surg. Unit, 5 Mob. Neurosurg. Unit, Ophthal. Sec. 59 B.G.H.	
12 C.C.S. and 7 (Ind.) V.D.T.C.	British and Indian V.D. cases
14 C.C.S. and 18 C.C.S.	all British short-term sick, including malaria
15 C.C.S.	all British battle casualties and cases awaiting evacuation by air
9 (Ind.) C.C.S.	all Indian sick and battle casualties
39 (Ind.) S.S.	and Indian cases awaiting evacuation by air
4 (Br.) S.S.	
151 Lt. Fd. Amb.	functioning as a convalescent depot and holding up to 600
9 F.T.U.	blood bank
3 Adv. Depot Med. Stores	

The air evacuation centre was moved up to the L.G. at Castiglione del Lago by July 15. 4,938 cases had been evacuated by air by August 4.

Evacuation by road was kept to a minimum. 9 Con. Depot could not be spared from the Rome medical area and so 151 Lt. Fd. Amb. was used in the rôle of a convalescent depot. Extra tentage was obtained and extra cooks and P.T. instructors from 8 Con. Depot, awaiting its stores at Naples, were attached.

Eighth Army was now engaged in the battle for Florence and was established some ten miles to the north of Arezzo. On the right the Poles had reached Ancona. During the period July 1–August 4, there had been 6,176 battle casualties in X and XIII Corps.

When in mid-July it seemed possible that Florence would shortly fall, plans were made to establish a large medical area in the city. D.M.S. A.A.I. nominated the following units to move into Florence as

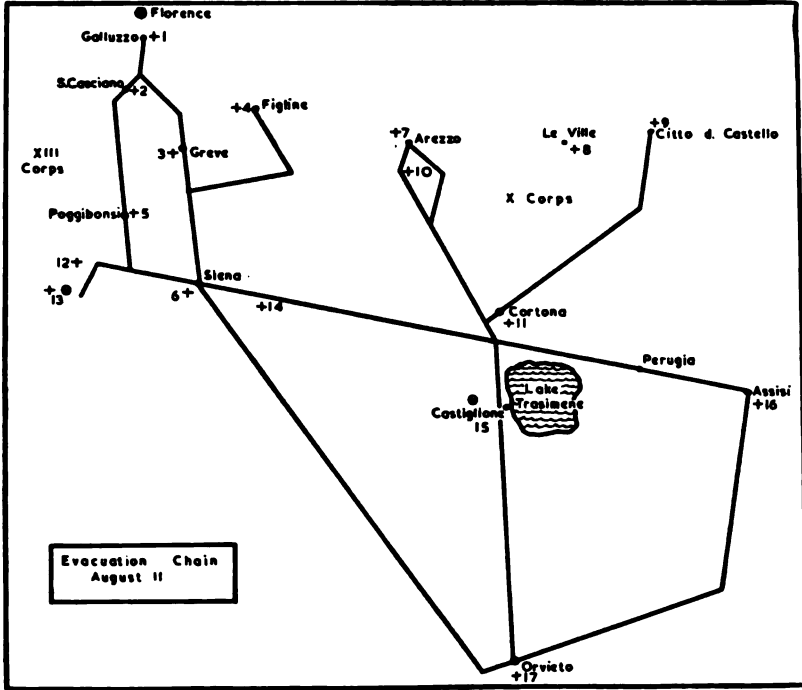


FIG. 82. Eighth Army Medical Units. August 11, 1944.

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. 8 (S.A.) C.C.S.
Ophthal. Sec. of 54 B.G.H. 2. 54 F.D.S. 3. 132 Fd. Amb., 13 C.P.T. 4. 52 F.D.S. 5. 3 (Ind.) C.C.S. 6. 1 (N.Z.) C.C.S. 7. 865 F.D.S.
53 F.D.S. Lt. Sec. 8. 866 F.D.S. 9. 2 (Ind.) C.C.S. Lt. Sec. 10. 19 C.C.S.
Ophthal. Sec. of 58 B.G.H.
9 F.T.U. (Blood bank)
39 I.S.S. 11. 2 (Ind.) C.C.S. Hy. Sec.
12 C.P.T. | <ul style="list-style-type: none"> 12. 2 C.C.S. Hy. Sec. 13. 2 C.C.S. Lt. Sec.
Air Evacuation Centre 14. 4 C.C.S. 15. Medical Area
54 B.G.H., 4 M.F.S.U.
5 M.N.S.U., Ophthal. Unit
14, 15 & 18 C.C.Ss.
9 (Ind.) C.C.S.
12 C.C.S. Hy. Sec., 151 Lt. Fd.
Amb.
9 Con. Depot, 4 Br. S.S.
18 I.S.S., 7 (Ind.) V.D.T.C.
Air Evacuation Centre 16. 5 B.G.H. 17. 59 B.G.H.
12 C.C.S. Lt. Sec. |
|---|---|

Evacuation Routes. X Corps from Arezzo and Città di Castello *via* Cortona to Hy. Sec. of 2 (Ind.) C.C.S. XIII Corps from Galluzzo and Figline to 4 C.C.S. Army, rearwards from Hy. Sec. 2 (Ind.) C.C.S. and 4 C.C.S.

soon as it fell: 11, 31 B.G.Hs., 1 Cdn. and 14 Cdn.G.Hs., 18 I.G.H., 8 and 9 Con. Depots. These units were entrained and arrived in Eighth Army area to create much difficulty, for Florence did not fall and the plan for the assault on the Gothic Line underwent profound changes. The main strength of Eighth Army was being moved to the Adriatic flank.

At the same time at Ancona were arriving 66, 71 and 83 B.G.Hs., 31 C.G.H. and 2 (S.A.) Con. Depot.

At the beginning of August, 1 District came under command Eighth Army and became responsible for administration behind the rear corps boundaries in Eighth Army area. But the hospitals and convalescent depots were placed under the direct administrative control of 1 District by H.Q. A.A.I. Thus, though 1 District was under command Eighth Army, D.D.M.S. Eighth Army had no operational or administrative responsibility for these medical units.

The change of plan left 5 B.G.H. at Assisi and 14 Cdn.G.H. at Perugia unsuitably located, but under the circumstances this was unavoidable.

When, on August 17, XIII Corps (6th Armd., S.A. 6th Armd., Indian 8th and 1st Divisions and Cdn. 1st Armd. Bde.) left Eighth Army to pass under command U.S. Fifth Army, with it went three C.C.Ss., seven F.S.U.s. and four F.T.U.s. V Corps (46th and 56th Divisions) came under command Eighth Army on August 6, as did later 1st Armd. Division.

XIII CORPS

With 6th Armoured, S.A. 6th Armoured and 4th Divisions, XIII Corps advanced along the west shore of Lake Trasimene on a front extending west from Trasimene to west of the Sinalunga-Rapolano road and in mountainous country.

8 (S.A.) C.C.S. opened in Chiusi on July 1 and straightway became busy, admitting 300 on the first day and 500 in the first two days. There were no F.D.Ss. in front of this C.C.S. at this time for the reason that they were busy with immobles at Mura, to the south of Lake Trasimene, and Città della Pieve on Route 71. However, on July 4, 54 F.D.S. was able to move forward to Acquaviva and then to Fratta, a few miles south of Sinalunga, to serve S.A. 6th Armoured and 4th Divisions. Then 52 F.D.S. moved from Mura to the vicinity of Cortona, on Route 71, alongside 1 Fd. Amb. of 6th Armd. Division. 2 C.C.S. was placed under command XIII Corps by D.D.M.S. Army and it opened in Ossaia, north-west of Lake Trasimene, on July 10 to become the forward C.C.S. evacuating to Chiusi. Evacuation from Chiusi to Orvieto was a responsibility of Eighth Army. Then air evacuation from the L.G. near Castiglione del Lago commenced. 52 F.D.S. was next

moved to Foiano d. Chiana and 54 to a camp site a mile south of Castelnuovo and north of Rapolano. The latter unit was sent back nearer Rapolano by A.D.M.S. S.A. 6th Armd. Division because German patrols were still active.

Indian 8th Division took over a sector of the line from the French Expeditionary Corps and with this division 3 (Ind.) C.C.S. moved, to open in Siena on July 18. 4 C.C.S. took over the site of 54 F.D.S. north of Rapolano. N.Z. 2nd Division joined XIII Corps. Evacuation was now from Rapolano to Chiusi or to Eighth Army Medical Area to the west of Lake Trasimene. 2 C.C.S. served N.Z. 2nd and 6th Armd. Divisions. 54 F.D.S. moved to Radda behind S.A. 6th Armd. Division. On July 24, 1 (N.Z.) C.C.S. opened in Siena.

The advance to the line of the Arno continued, with 6th Armd. Division on the left of Route 69. On its left was 4th Division moving on an axis from Palazzuolo on Route 73, while S.A. 6th Division, still further to the left, was advancing from Castelnuovo *via* Radda to Greve. N.Z. 2nd Division moved up *via* Siena and Castellina in Chianti, towards San Casciano on Route 2 and Indian 8th Division moved from Poggibonsi, on Route 2, westwards *via* Certaldo and Castelfiorentino.

During these events 2 C.C.S. remained at Ossaia; 4 C.C.S., north of Rapolano, and 1 (N.Z.) and 3 (Ind.) C.C.Ss. at Siena. 52 F.D.S. leapt from Foiano to Bucine to Figline to Rufina, on Route 67, while 54 F.D.S. followed S.A. 6th Armd. Division. 8 (S.A.) C.C.S. moved up to Greve.

At the end of July, 6th Armd. Division passed to X Corps and Canadian 1st Division joined XIII Corps for a short while. 2 (Cdn.) F.D.S. opened south of Florence. Then N.Z. 2nd Division left XIII Corps and 1st Division joined to take over from the Canadians south of Florence.

X CORPS

From the beginning of June, X Corps was given a full operational rôle. It took over from the Polish Corps on the right of XIII Corps and aggressively pursued a retreating enemy. The Corps advanced towards Avezzano with N.Z. 2nd Division. Then leaving the New Zealanders at Sora it swung left towards Rome, by-passing Alatri, where 6th Armoured, Indian 8th and Indian 10th Divisions came under command, for the advance on Rieti, Terni and along the Tiber to Perugia. For brief periods 7th Armd. and 25th Army Tk. Bdes. were under command. In June, Indian 10th Division returned to X Corps to relieve 6th Armoured Division.

During the swift advance up to Perugia the maximum possible use was made of the F.D.Ss. Evacuation back to the F.D.S. was largely undertaken by 6th Armoured Division, using a platoon of A.F.S. cars and later by M.A.C. cars attached to Indian 8th and 10th Divisions. 25 M.A.C. was used for evacuation from F.D.S. to the Army Medical

Area. The number of casualties was small but the journeys long. From Orvieto to Perugia involved a return journey of seven hours, from Assisi of eight hours.

The slow *tempo* of X Corps' advance from Perugia to Bibbiena and the small numbers of the casualties made the functioning of the medical units simple. With 31 B.G.H. and 18 I.G.H. in Arezzo evacuation presented no difficulty.

V CORPS

As the Germans withdrew V Corps (Indian 4th and the Italian Utili and Nembo Divisions) followed to occupy Arielli, Tollo, Orsogna, Guardiagrele, Chieti and Pescara, the only considerable port of the Abruzzi but nevertheless a pretentious place.

17 (Ind.) Fd. Amb. with 2 F.S.U. attached opened its A.D.S. in a factory to the north of Chieti, near the Pescara lateral road. Its M.D.S. opened just south of Chieti. On June 12 a light A.D.S. was opened about a mile to the south of Pescara and the M.D.S. moved to Francavilla. The M.D.S. of 32 (Ind.) Fd. Amb. was opened in Ortona and to it a divisional rest station run by 26 (Ind.) Fd. Amb. was attached.

An ambulance train and also a ward coach ran daily between S. Vito and Torino beach, Vasto, and often to Termoli. The ward coach could take 26 patients—12 lying and 14 sitting—and had a permanent crew of one corporal, one N.O. and one cook R.A.M.C.

On June 12, the M.D.S. moved forward to Pescara, opening in the railway station there. The Utili and Nembo divisional field hospitals moved from Lanciano to Chieti, there to form an Italian medical centre.

On June 14, Polish II Corps commenced to take over from V Corps. 1 C.C.S. at Lanciano was replaced by a 200-bed Polish general hospital and moved to Campobasso to open under canvas until 2 Pol.G.H. vacated its buildings. 5 C.C.S. also moved to Campobasso from Vasto.

When Indian 4th Division went to the Vinchiatturo area for special mountain training, 9 (Ind.) C.C.S. and 48 I.S.S. moved to Vinchiatturo from Torino beach.

CANADIAN I CORPS

Following the capture of Rome, Canadian I Corps withdrew to the valley of the Volturno. 5 (Cdn.) C.C.S. reopened in Telesse as a corps medical centre. With it were 2 and 3 (Cdn.) F.S.U.s., 2 (Cdn.) F.T.U., a 250-bed detachment from 1 (Cdn.) Con. Depot and 2 (Cdn.) Exhaustion Unit. This last had replaced the *ad hoc* Corps Neuropsychiatric Centre based on Lt. Sec. 8 (Cdn.) Fd. Amb. Lt. Sec. 3 (Cdn.) F.D.S. with 1 (Cdn.) Mob. Bact. Lab. attached continued to function as a V.D.T.C. Later 2 (Cdn.) V.D.T.U. was formed.

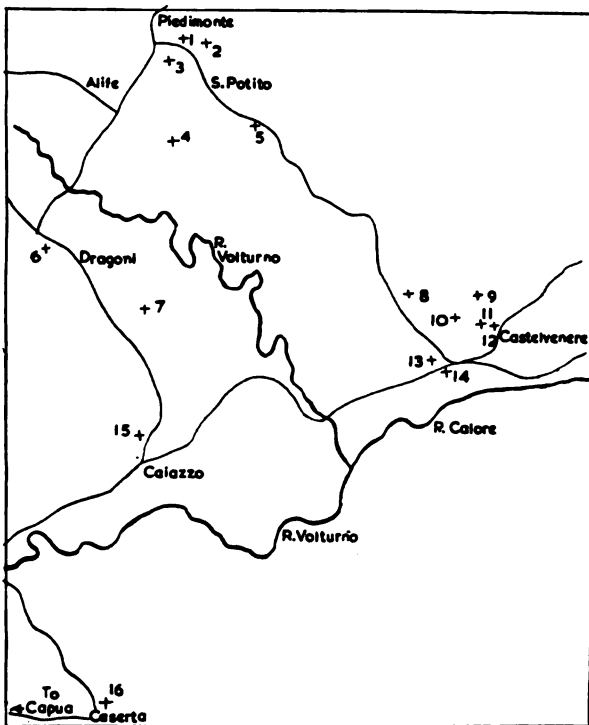


FIG. 83. The Distribution of the Canadian Forward Medical Units. July 1, 1944.

1. 2 Fd. Hyg. Sec.
2. 4 Fd. Amb.
3. 2 F.D.S. open for sick of Canadian 1st Division
1 F.D.S. closed
4. 5 Fd. Amb.
5. 9 Fd. Amb.
6. 7 Lt. Fd. Amb.
7. 13 F.D.S. open for sick of Canadian Armoured Division
11 Fd. Hyg. Sec.
8. Mob. Bact. Lab.
9. 8 F.D.S. closed (converted into 8 Lt. Fd. Amb. July 20)
10. 16 F.D.S. closed
11. 5 C.C.S. open (emergency surgical centre, and sick among Corps troops)
2 & 3 F.S.U.s. 2 F.T.U.
Corps Psychiatric Centre
12. 1st Division Officers Con. Depot
13. 5 Fd. Hyg. Sec.
4 C.C.S. 1 & 4 F.S.U.s. 2 F.T.U. closed
14. 3 F.D.S. closed
15. 24 Fd. Amb.
16. 14 & 15 Cdn.G.Hs.

During July, Cdn. 12th Inf. Bde. became a third brigade for Canadian 5th Armd. Division and 8 (Cdn.) F.D.S. was transformed into 8 (Cdn.) Lt. Fd. Amb.

Evacuation beyond Corps was by 1 (Cdn.) M.A.C. to 14 or 15 Cdn.G.Hs. at Caserta or to 1 Cdn.G.H. at Avellino. 5 Cdn.G.H. had moved to Rome. During July, 1 Cdn. Armd. Bde. was u/c XIII Corps and casualties and P.o.W. from this brigade were admitted to this hospital. In mid-July 14 Cdn.G.H. closed and prepared to move forward should the Canadian Corps return to the line. 3 Cdn.G.H. was withdrawn from Anagni on July 25 and moved to Avellino to release 1 Cdn.G.H. for duty elsewhere.

At the end of July the Canadian Corps began to move to the Foligno area. Canadian 1st Division went into the line near Florence on August 5 u/c XIII Corps, but after three days, owing to a change of plan, the division moved across the mountains to the area of Iesi. 5 (Cdn.) C.C.S. was opened to serve the Corps and was expanded to 300 beds. To it was attached H.Q. Coy. of 6 Lt. Fd. Amb. of 21st Tk. Bde., then u/c Canadian Corps.

MEDICAL COVER

4TH DIVISION

4th Division, moving northwards from Tivoli, where the River Aniene hurls itself down from the steep slopes of the Apennines to the level of the Roman plain, on June 6, met with little resistance. It followed 78th and S.A. 6th Armd. Divisions through Riano and Grotte Santo Stefano to reach Città della Pieve. 28th Inf. Bde. went into the line near Lake Trasimene, taking over from 36th Inf. Bde. of 78th Division. During the period July 1–August 8, the division took part in XIII Corps' northward advance through Foiano–Arezzo–Monte S. Savino, south-west of Arezzo on Route 73–Capannole–Bucine–Montevarchi (on Route 69)–north-west to the southern bank of the Arno at Florence. It was relieved on August 9 by 1st Division and went to the area of Foligno to rest and to come under command V Corps.

During the advance from Tivoli the field ambulances opened their dressing stations along Route 6 as required. When 28th Inf. Bde. went into the line it was engaged in severe fighting between Lakes Chiusi and Trasimene. Dressing stations were established along the axis of the divisional advance, parallel to the western shore of Lake Trasimene, Strada–Vaiano–Gioiella–Pozzuolo–Petrignano del Lago. Evacuation from these dressing stations was: Priority battle casualties by A.F.S. car to 54 F.D.S. at Città della Pieve, to which two F.S.U.s. and one F.T.U. were attached; non-Priority cases and divisional sick to 4 C.C.S. at Orvieto; exhaustion cases to the corps field ambulance at Monteleone.

Casualties June 22-30, 1944

Battle Casualties	. 43 officers	622 O.Rs.
Sick	. 3 officers	354 O.Rs.
	<hr/>	
	46 officers	976 O.Rs.

During the advance from the area of Lake Trasimene to Florence the dressing stations of 10, 12 and 159 Fd. Amb. were opened along the main divisional axis. Casualties therefrom were evacuated as follows: Priority cases to 52 F.D.S. at Foiano, Bucine and Figline in succession as this unit moved forward; non-Priority cases to 2 and 4 C.C.Ss. at Castiglione del Lago and, later, to 8 (S.A.) C.C.S. at Greve. Five M.A.C. cars were attached to each field ambulance and five to the F.D.S.

NEW ZEALAND 2ND DIVISION

The division left Arce on July 9/10 to join XIII Corps and to return to the front. N.Z. 6th Bde. went into the line fifteen miles north of Lake Trasimene to take part in the advance to Florence and beyond. On July 13, N.Z. 6th Bde. attacked and gained the heavily wooded slopes of Monte Castiglione Maggiore and Monte Cavadente, and on the nights of July 14/15 and 15/16 Monte Lignano and Monte Camurcino were taken. Thereafter the division went into reserve for a few days.

1 (N.Z.) C.C.S. was not opened. New Zealand casualties were evacuated from the M.D.S. of 5 (N.Z.) Fd. Amb. near Cortona through 2 C.C.S. to 8 (S.A.) C.C.S. near Chiusi. Sick were sent to the M.D.S. of 6 (N.Z.) Fd. Amb. near Panicale, south of Lake Trasimene, and exhaustion cases were sent to XIII Corps Exhaustion Centre. 4 (N.Z.) Fd. Amb. set up a rest camp at Civita Castellana, on Route 3, thirty miles north of Rome. Attached to the M.D.S. of 5 (N.Z.) Fd. Amb. were 1 (N.Z.) F.S.U., 2 (N.Z.) F.T.U. and H.Q. N.Z. Sec. M.A.C.

Casualties were few, the largest number of 70 being admitted to the M.D.S. of 5 (N.Z.) Fd. Amb. on the morning of July 15.

On July 21 the division returned to the line, being employed with S.A. 6th Armd. Division in driving a narrow wedge along the general line of Route 2 north of Siena through to the Arno south-west of Florence. The division relieved the French Moroccan Division in the San Donato area, north of Siena, being inserted between the Indian and South African divisions on the night of July 21/22 with N.Z. 5th Bde. in the line. Steadfastly and in the face of stubborn opposition N.Z. 5th Bde. thrust forward to capture San Casciano on Route 2 on July 27, to break through the Olga Line and to make contact with the Paula Line north of the Pesa.

To cover this advance the following medical arrangements were made. The M.D.S. of 5 (N.Z.) Fd. Amb. was established some eight miles

to the south of Castellina. Thence the battle casualties were evacuated to 4 C.C.S. at Colonna di Grillo, fifteen miles south-east of Siena, until, on July 23, 1 (N.Z.) C.C.S. moved up from Panicale to the outskirts of Siena. To this C.C.S. were attached 1 (N.Z.) F.S.U. and 2 (N.Z.) F.T.U. A surgical team of 6 (N.Z.) Fd. Amb. replaced 1 (N.Z.) F.S.U. at the M.D.S. of 5 (N.Z.) Fd. Amb. On July 26, 1 (N.Z.) F.S.U. left 1 (N.Z.) C.C.S. to become attached to the M.D.S. of 6 (N.Z.) Fd. Amb. and to the C.C.S. was attached 8 F.S.U.

From the C.C.S. evacuation was to 2 N.Z.G.H. at Caserta, three hundred miles away, the casualties being staged at 4 C.C.S. and at 58 B.G.H., near Borghetto at the north-west corner of Lake Trasimene. From the Castiglione del Lago L.G. New Zealand patients were flown to Naples and thence transported to 2 N.Z.G.H. at Caserta. After August 10 the L.G. at Malignano, near Siena, was used for this purpose.

Between July 22 and August 5, by which date that part of Florence south of the Arno had been captured, New Zealand casualties were fairly severe, 694 being admitted to the divisional medical units.

On July 25, the M.D.S. of 6 (N.Z.) Fd. Amb. moved forward to a site near San Donato, five miles north of Castellina in Chianti, north of Siena, and on the 27th to one just north of Tavarnelle on Route 2. On July 28 the M.D.S. of 5 (N.Z.) Fd. Amb. moved forward to within three miles of Tavarnelle and 4 (N.Z.) Fd. Amb. handed over the rest camp at Civita Castellana and likewise moved up to the vicinity of Tavarnelle in readiness to become the battle M.D.S. further forward as the drive towards Florence progressed.

In the attack on the Paula Line, which was based on a semi-circle of hills before Florence, the New Zealand Division's objective was the village of San Michele a Torri across the Pesa. N.Z. 6th Bde. secured a bridgehead across the river at Cerbaia on July 27 and held on to it in spite of several determined counter-attacks. On the night of July 28/29 San Michele was entered and held. After further very severe fighting the La Romola and Faltignano ridges were cleared. On the night of August 1/2 the whole division was hurled at the Pian dei Cerri and La Poggiona ridges and during the following night the German opposition was finally overcome. The New Zealanders were now firmly established along the final line of hills in front of Florence and the Germans had no choice but to withdraw beyond the Arno. This they did, and S.A. 6th Armd. Division at once forged ahead to enter Florence on the morning of the 4th, to be quickly followed by the leading elements of N.Z. 2nd Division.

During these events the brigaded A.D.Ss. moved in conformity with their brigades. Evacuation from R.A.P. to A.D.S. was by ambulance car and jeep; from A.D.S. to M.D.S. by ambulance car.

At the M.D.S. of 6 (N.Z.) Fd. Amb. at Tavarnelle, two operating

theatres were busy all through July 29 and the afternoon, evening and night of the 30th. For the next few days admissions were at the rate of 120-130 per day. On August 2 it was working under great pressure, admissions totalling 150. After the 3rd, however, this pressure eased. Among those whom it had tended were many victims of booby-traps and mines and in its temporary cemetery across the road were fifty graves.

New Zealand 2nd Division gave place to the Canadians and side-stepped to the west to relieve Indian 8th Division. It was engaged in mopping up the remaining pockets of the enemy south of the Arno about Montelupo and Empoli Vecchio.

The M.D.S. of 4 (N.Z.) Fd. Amb. moved, on August 6, to a site to the west of Montespertoli, eight miles from the Arno, and, on the 7th, the M.D.S. of 5 (N.Z.) Fd. Amb. from San Donato to Castelfiorentino to receive casualties from N.Z. 5th Bde. and also the divisional sick. The M.D.S. of 6 (N.Z.) Fd. Amb. remained at Tavarnelle and was admitting both battle casualties and sick.

On August 14, N.Z. 2nd Division was relieved by units of U.S. Fifth Army and withdrew to Castellina for rest. 4 (N.Z.) Fd. Amb. alone remained open in Castellina and a steady stream of infective hepatitis cases was passed through this unit to 1 (N.Z.) C.C.S. and on to 2 N.Z.G.H.

During this period a number of observations of value were made. The A.D.S. of 6 (N.Z.) Fd. Amb. functioned with two medical officers. When a large number of casualties arrived at one and the same time, some could not receive attention as promptly as was considered desirable. It was considered that three medical officers were required by an A.D.S. in action. The brigaded A.D.S. on occasion moved so fast and so far that on several occasions there was difficulty in finding any M.D.S. to which it could evacuate its cases. One A.D.S. was first in a palatial mansion in San Casciano for three days, then in a small school in Messandria for two days, then in a school at Scandicci for two days, then in a doctor's house in Monterappoli and, finally, at Ligliano. During this period the A.D.S. dealt with more than 200 battle casualties and nearly 200 sick. The personnel was organised into three teams, each consisting of one N.C.O. (N.O.), one N.C.O. (evacuation), one resuscitation orderly, one injection orderly, one drinks orderly, two dressing orderlies and three S.Bs.

A good deal of surgical work was undertaken at the M.D.S. and over two-thirds of all the battle casualties admitted to 4 (N.Z.) Fd. Amb. received complete surgical treatment and were fit to be sent on direct to a general hospital. All urgent abdominal and chest cases, however, were sent to a C.C.S.

It was noted by one of the members of a field ambulance surgical

team that the types of surgery attempted at the M.D.S. during this period were :

- (a) severe cases . 1. limbs requiring amputation
 2. limbs blown off
 3. collapsed cases of compound femurs and compound leg fractures
 4. severed main arteries
- (b) light cases . as many as possible.

In his opinion the aim should be to operate on all such cases at the M.D.S. and then to evacuate them direct to the forward general hospital. Many of the lighter cases should pass right on to the base, where the next surgical intervention should occur. In this way much relief would be given to the C.C.S. and to the forward general hospitals. But, to undertake this responsibility, there would be required at the M.D.S. : (1) three medical officers for reception and, in the absence of a F.T.U., for the supervision of resuscitation; (2) three surgical teams, each complete with surgeon, anaesthetist, N.C.O., orderlies and its own operation equipment, working on a twelve-hourly basis, two teams covering the whole twenty-four hours. Under greater pressure all three teams would work simultaneously over a period of four-six hours.

1 (N.Z.) F.S.U. dealt with 90 cases during July and 30 during August. Most of the cases were of severe limb injury. There were sixteen deaths. Among those referred to the F.T.U. blood reactions were common at this time; the weather was hot, transportation was long and, for a while, there were no refrigerators at the C.C.S.

At this time the shortage of medical officers was causing much difficulty; the result was a constant changing of officers from one medical unit to another. When a M.D.S. happened to be closed, its staff often consisted of no more than the C.O., his second in command, the dental officer and the Q.M.

At the C.C.S. the operational work consisted largely in treating abdominal cases and the lightly wounded. While it was open in the Siena area it dealt with eight cases of gas gangrene, two in July and six in August; four were in P.o.W. There were two deaths. Altogether, 964 battle casualties and 1,970 sick were admitted. There were twenty-eight deaths. It was noted that although the conditions at the C.C.S. were far superior to those at the M.D.S. there existed a strong inclination to operate at the M.D.S., even when evacuation facilities were good.

The general hospitals were far away from the forward area. 2 N.Z.G.H. was at Caserta, 3 N.Z.G.H. at Bari and 1 N.Z.G.H. at Molfetta, twenty miles north of Bari. The last was due to move to Ancona as soon as this became possible. Air evacuation, however, did much to overcome distance.

The hospitals in the Naples area became greatly overcrowded and 2 N.Z.G.H. assisted by accepting British, Canadian and South African patients. The arrival of the advance parties from A.F.H.Q. Algiers *en route* for Caserta aggravated the difficulties. Hospital buildings were requisitioned by A.F.H.Q. staff. Fewer hospital ships were now available, some having been withdrawn for participation in Operation 'Overlord'. There was a considerable accumulation of the more serious cases awaiting evacuation. Thus it was that 2 N.Z.G.H., a 600-bed hospital, had 738 patients on July 31 and 817 on August 2. Overwork yielded a raised sick rate among the staff of the hospital.

During July there were 1,317 admissions to 2 N.Z.G.H. Of these 383 were battle casualties. During August admissions totalled 1,070, 364 of which were battle casualties. During July there were 917 admissions to 3 N.Z.G.H., 162 being battle casualties, and during August 1,113, 378 being battle casualties. Only 768 patients were admitted to 1 N.Z.G.H. during July and August.

Consulting Surgeon N.Z.E.F. found it necessary to call attention to the growing shortage of experienced surgeons in the division. 'There is a scarcity of experienced surgeons in the N.Z.E.F. at present and this condition always tends to be aggravated by the appointment of surgeons to administrative positions. If war was not for us a temporary phase of relatively short duration it would be essential, in my opinion, to have two divisions in the Medical Corps, one clinical and the other administrative, with officers given senior ranks according to their capacity to fill the positions in either branch.'

The N.Z. Con. Depot at San Spirito had an average bedstate of 478 in July and of 517 in August.

July 1944

Medical cases	.	47	per cent.	of total admissions
Surgical cases	.	22	"	"
Orthopaedic cases	.	20	"	"
Skins	.	11	"	"

August 1944

Medical cases	.	36.5	"	"
Surgical cases	.	42	"	"
Orthopaedic cases	.	14.5	"	"
Skins	.	7	"	"

Infective hepatitis cases were 39 in July and 103 in August. These were held in the depot for eighteen days.

6TH ARMoured DIVISION

6th Armoured Division, consisting of 26th Armd. Bde., 1st Guards Bde. and 61st Inf. Bde., had the following medical units serving with it: 1 and 14 Fd. Ambs., 165 Lt. Fd. Amb., 3 Lt. Fd. Hyg. Sec. and 156 M.D.U.

On July 1 the division came u/c XIII Corps and moved from Perugia to the area south of Lake Trasimene to relieve 78th Division, when 165 Lt. Fd. Amb. opened a light M.D.S. in the divisional harbour area. On July 3 along Route 71 to the west of the lake 1 Fd. Amb. opened a M.D.S. Evacuation therefrom was to 8 (S.A.) C.C.S. As the division moved forward, 165 Lt. Fd. Amb. opened a M.D.S. on July 5 well forward of that of 1 Fd. Amb. which then closed, handing over its site to 52 F.D.S. Then 52 F.D.S. was replaced by 24 F.S.U., which functioned as an A.S.C. A section of 165 Lt. Fd. Amb. served as the parent unit to 24 F.S.U.

In the attack on Arezzo the division was much concerned. 1 Fd. Amb. provided the M.D.S. while 165 Lt. Fd. Amb. remained on wheels with 26th Armd. Bde., being prepared to open a M.D.S. in Arezzo when this fell. An aerial photograph had revealed a suitable building bearing the Red Cross. 'B' Coy. 14 Fd. Amb. had been running the Corps Malaria Centre; it now joined 61st Inf. Bde. 'A' Coy. 14 Fd. Amb., together with a section of 166 Lt. Fd. Amb. which joined 6th Armd. Division with 'Sackforce', a composite force that was guarding the right flank of the division, was placed with 'Sackforce' for this operation.

'A' Coy. 1 Fd. Amb., plus 36 S.Bs. from 'B' Coy., was placed with 1st Gds. Bde. For the use of S.M.O. 1st Gds. Bde. 36 S.Bs. from 14 Fd. Amb. and half an ambulance section of an Indian mule company were also provided. XIII Corps opened 2 C.C.S. on the site of 24 F.S.U's. A.S.C.

The attack commenced on July 14 and all the objectives were taken. 165 Lt. Fd. Amb. opened a M.D.S. in Arezzo on the 16th. Thereafter the division steadily forged ahead towards the Arno.

On August 4 the division passed under command X Corps, to revert to XIII Corps again on the 12th.

SOUTH AFRICAN 6TH ARMoured DIVISION

The route taken by S.A. 6th Armoured Division during the advance to the Arno was through Fabrica, Vallerano, Viterbo, Acqua Rossa (June 10), Bagnoregio (June 7), Orvieto, Alleronia, Fabro, Città del Pieve, Chiusi and Acquaviva (June 30), Chianciano, Florence.

Each field ambulance was placed under brigade command for ease of movement and supply, with prior consultation with A.D.M.S. before each new siting of the A.D.S. 226 and, later, 137 Fd. Amb. was with 24th Guards Bde., 19 (S.A.) Fd. Amb. with S.A. 11th Armd. Bde. and 20 (S.A.) Fd. Amb. with S.A. 12th Mot. Bde.

The moves of 226 Fd. Amb. were Montepulciano—below Torrita—west of Sinalunga—north of Castelnuovo—Castel di Brólio—S. Rego—south-east of Radda—near Greve—south of Impruneta—north of Siena. Those of 19 (S.A.) Fd. Amb. were Chianciano—Sinalunga—Rapolano—

Castelnuovo–Panzano–Mercatale–Uzzano–Castel di Brólio. Those of 20 (S.A.) Fd. Amb. were from Chianciano–Sinalunga–above Rapolano–Fornacelle–Panzano–Fabrica–San Casciano–near Castelnuovo.

For most of the time action was on a two-brigade front, each field ambulance taking casualties from its own brigade front. Most of the fighting was done by the infantry.

Between August 5–27, the division was resting in a concentration area east of Siena. 19 (S.A.) Fd. Amb. at Uzzano dealt with the divisional sick.

During the month of June, when the strength of the division was approximately 19,600, the casualties in the division were :

TABLE 29

S.A. 6th Armoured Division Casualties, June 1944

	U.D.F.			24th Guards Bde.		Totals		
	Offrs.	O.Rs.	C.C.	Offrs.	O.Rs.	Offrs.	O.Rs.	C.C.
Killed .	14	165	9	6	56	20	221	9
Wounded .	58	649	42	19	282	77	931	42
Missing .	5	65	4	—	3	5	68	4
	<hr/>			<hr/>		<hr/>		
	77	879	55	25	341	102	1,220	55
Totals	1,011			366		1,377		

Grand Totals Killed . 250
 Wounded. 1,050
 Missing . 77

Wounded rate per 1,000 troops per day:

U.D.F. officers . 2·15
 O.Rs. . 1·64
 C.C. . 0·82
 Guards officers . 3·17
 O.Rs. . 2·00

Total Casualty Rate (killed and wounded):

U.D.F. officers . 2·85
 O.Rs. . 2·20
 C.C. . 1·08
 Guards officers . 4·17
 O.Rs. . 2·42

Of the wounded 921 passed through the divisional field ambulances.

Exhaustion cases totalled 68.

U.D.F. (Eur.) . 0·14
 C.C. . 0·02
 Guards Bde. . 0·16

INDIAN 4TH DIVISION

Indian 4th Division (5th and 7th Bdes.) was called forward from Campobasso on July 7 to participate in the attack on Arezzo u/c X Corps. On the 8th this division took over command of the sector to the west of the Tiber, taking u/c all the formations of X Corps in the area.

Ind. 7th Bde. moved up to the left of Ind. 10th Bde. while on the left of Ind. 7th Bde. was the formation known as 'Sackforce'. The terrain in front of Ind. 7th Bde. consisted of a series of high ridges, the distance between these being on the average about two miles. Ind. 7th Bde. reached the high ground overlooking the Nestore on the morning of July 9. On the following day it entered the town of Volterrano, which was occupied without opposition. The brigade now covered a front of about four miles.

Ind. 5th Bde. was now moved to a concentration area near San Vincenzo, about three miles to the south-west of Nestore and the Tiber, and two of its battalions were placed u/c Ind. 7th Bde. On July 11 the Nestore was crossed and Villa Toppo reached. Then the Aggia was crossed and the advance toward Monte Santa Maria Tiberina continued, but progress was quickly checked by stiffening resistance. On the following day, however, Monte Favalto, overlooking Route 73, was captured. On July 12 the walled village of Monte Santa Maria Tiberina, standing on its isolated pinnacle, was attacked unsuccessfully, but during the night the Germans withdrew and the village was captured on July 13. Thereafter Monte Pagliaola and Monte Civitella were occupied. The capture of these heights brought long stretches of Route 73, running from San Sepolcro to Arezzo, under direct Allied observation.

During the evening of July 14, Ind. 7th Bde. crossed the Scarazola in an advance toward Pezzano, but this attack was soon halted and all attempts by both Ind. 7th and 10th Bdes. to capture Monte Cedrone were unavailing.

When the advance of XIII Corps toward Arezzo was checked, X Corps was instructed to develop a strong thrust north-west of Monte Favalto across Route 73 and to capture the Alpe di Poti massif, which was situated about five miles to the east of Arezzo and dominated the eastern and north-eastern exits from this town. For the advance to Alpe di Poti by Indian 4th Division the immediate problem was the construction of a track leading from the divisional positions in the Monte Civitella region to Route 73 at Palazzo del Pero across very mountainous country with high ridges and steep hills. This track was not completed until July 15, by which time the battle for Arezzo had reached its closing stages. A survey of the route was made on July 12 from Volterrano through Monte Dogana to Palazzo del Pero, cutting across deep ravines, up steep hillsides and through thick woods. It was estimated that ten days was the minimum time required to complete this track. Yet after

no more than twenty-eight hours the track was finished. Ind. 7th Bde. began to move along the track even before it was finished on July 15, and by the following day Palazzo del Pero was reached, when it was found that elements of XIII Corps were already in possession of it.

On the night of July 17/18 the attack upon Alpe di Poti commenced, Ind. 7th Bde. crossing Route 73 and advancing toward the Alpe di Poti, which was partly cleared on the following day. Though this enterprise did not directly affect the capture of Arezzo, it certainly did contribute to the speedy withdrawal of the Germans up the Tiber valley.

Monte Cedrone fell to Ind. 10th Bde. of Indian 10th Division on the night of July 16/17 and Pezzano was captured by Ind. 5th Bde. Thus the approach to Città di Castello was prepared.

The medical units accompanying Indian 4th Division were 17 and 26 (Ind.) Fd. Ambs. and 15 (Ind.) Fd. Hyg. Sec. With Ind. 7th Bde. when it went into the line west of the Tiber was a company of 17 (Ind.) Fd. Amb. Since Indian 4th and 10th Divisions were to have the same axis of evacuation the M.D.S. of 14 (Ind.) Fd. Amb. of Indian 10th Division at Umbertide served both divisions in the initial stages. Indian 10th Division, now u/c Indian 4th Division, was also to evacuate its casualties to this M.D.S.

When Ind. 7th Bde. moved to the left of Ind. 10th Bde. and began the advance by capturing Volterrano, one company of 17 (Ind.) Fd. Amb. accompanied the brigade and opened a light M.D.S. near Petrelle and established its main A.D.S. at La Rocca on July 9. Evacuation along the lateral road that ran across the Tiber was opened on the following morning and casualties were evacuated, *via* Nestore and Montecastelli, to the M.D.S. at Umbertide. When Ind. 7th Bde. advanced north of the Nestore it became necessary to open a divisional M.D.S., and so, on July 12, 26 (Ind.) Fd. Amb. opened a battle M.D.S. for this sector in the neighbourhood of Colzozoro.

866 F.D.S., with one F.S.U., one F.T.U. and an Indian detachment from 17 (Ind.) Fd. Amb., was open in front of the C.C.Ss. at Assisi and Perugia. On July 15 the F.D.S. moved forward to Montecastelli.

On July 19, 32 (Ind.) Fd. Amb. (Ind. 10th Div.) established a battle M.D.S. in the south-eastern part of Arezzo. One company of 17 (Ind.) Fd. Amb. provided an A.D.S. for Ind. 7th Inf. Bde. at Palazzo del Pero. The A.D.S. for Ind. 11th Inf. Bde. was established by 32 (Ind.) Fd. Amb. about a mile to the north of Arezzo. On July 20, 17 (Ind.) Fd. Amb. opened a M.D.S. for the divisional sick about twelve miles to the south of Arezzo.

On July 23, Ind. 5th Inf. Bde. reverted to the command of Indian 4th Division and 26 (Ind.) Fd. Amb. was placed in reserve at Palazzo del Pero.

On July 26, a light A.D.S. was established by 26 (Ind.) Fd. Amb. at

Le Ville, between Arezzo and San Sepolcro on Route 73, to assist in the evacuation of Indian 10th Division casualties in that area to the M.D.S. of 32 (Ind.) Fd. Amb. at Arezzo. At this time Indian 10th Division was operating in difficult mountainous country and in the evacuation of casualties long hand-carries were necessary, large numbers of non-medical unit S.Bs. and Italian porters being employed.

On July 27, 26 (Ind.) Fd. Amb. opened a M.D.S. in Palazzo del Pero for Indian 10th Division casualties. When Ind. 5th Inf. Bde. was committed on the night of July 25 an A.D.S. was opened for this brigade about half a mile to the north of Antria.

Evacuation from 5th, 7th and 11th Brigades was to 32 (Ind.) Fd. Amb's. M.D.S. at Arezzo. From the A.D.S. of 26 (Ind.) Fd. Amb. at Le Ville casualties were first evacuated to 26 (Ind.) Fd. Amb's. M.D.S. and thence to the M.D.S. of 32 (Ind.) Fd. Amb. at Arezzo.

From the M.D.S. of 32 (Ind.) Fd. Amb. all battle casualties were evacuated to 865 F.D.S., to which an Indian wing was attached. Sick were evacuated to the M.D.S. of 17 (Ind.) Fd. Amb.

Hy. Sec. 9 (Ind.) C.C.S. moved up to Castiglion Fiorentino.

On July 31 the evacuation chain of Indian 4th Division was as follows :

<i>'Lindforce'</i>	<i>Ind. 11th Bde.</i>	<i>Ind. 5th Bde.</i>	<i>Ind. 7th Bde. in reserve</i>
A.D.S. 32 (Ind.) Fd. Amb. two miles N.W. of Arezzo	A.D.S. 32 (Ind.) Fd. Amb. one mile N. of Antria	A.D.S. 26 (Ind.) Fd. Amb. one mile N. of Gello	A.D.S. 17 (Ind.) Fd. Amb.

M.D.S. 32 (Ind.) Fd. Amb. Arezzo

Light sick . . . 26 (Ind.) Fd. Amb. Arezzo

Non-Priority battle

casualties . . . M.D.S. 17 (Ind.) Fd. Amb.

Priority cases . . . 865 F.D.S.

Hy. Sec. 9 (Ind.) C.C.S. Castiglion Fiorentino,
south of Arezzo on Route 71

INDIAN 8TH DIVISION

Indian 8th Division advanced with one brigade up from its concentration area about two miles to the north of Alatri on June 4. The first objective of Ind. 21st Bde. was Guarcino, a village in a valley surrounded by high hills with narrow defiles through which the approach road ran. After fierce house to house fighting the village was captured, and on the early morning of June 6 Le Casette was entered.

On June 5 the division passed to the command of X Corps and continued the advance by Subiaco to Arsoli. On the 6th, Ind. 19th Bde.

moved from its concentration area in the vicinity of Monte S. Giovanni, passed through Guaricino and entered Subiaco.

On June 8 Agosta was captured and the advance was resumed toward Arsoli, from which the Germans withdrew. Meanwhile Ind. 21st Bde. was mopping up isolated pockets of resistance.

In accordance with the change of the general plan on June 9, Indian 8th Division was now ordered to capture Terni. Ind. 17th Bde. passed into the lead and advanced *via* Tivoli on Route 5 and Palombara Sabina to Route 4, south of Fara Sabina, where it relieved two brigades of 4th Division.

By June 12 Montopoli, to the south of Poggio Mirteto, had been reached, but because of the difficulties that were being encountered this line of advance was now abandoned. Meanwhile Ind. 21st Bde. had arrived in Cantalupo Sabino, there to relieve a brigade of 6th Armd. Division which was moving to the west. This brigade now continued the advance toward Terni. Its initial objectives, Cottanello and Configni, were captured and on June 15 Terni was entered.

Ind. 19th Bde. now passed into the lead. By the 15th it had passed through Acquasparta on Route 7 and by nightfall had gained twenty-five miles. On the 16th Bevagna was taken and the brigade converged on Foligno on Route 3 from the west and south-west. From Foligno the Germans rapidly withdrew and Indian 8th Division now moved along Route 75 to enter Angeli and Assisi. Bastia was taken in the face of stiff opposition on June 17.

Indian 8th Division was now ordered to thrust toward Ripa to block the exit routes to the north-east from Perugia, which was about to be attacked by 6th Armd. Division. Ind. 17th Bde. advanced to Petrignano, beyond which it was halted by stiffening resistance. Ripa was entered, however, on June 19.

During these events the number of load-carrying vehicles provided on the Indian War Equipment Table was found to be inadequate. Moreover, hard wear and tear had taken their toll. The result was that two of the field ambulances were immobilised while pooled transport was used to move the remaining field ambulance. Later, nine 3-ton lorries were allotted to the field ambulances and so the situation, to some certain extent, was eased.

Evacuation was made exceedingly difficult by the indifferent roads and by the great number of diversions made necessary by demolition and by inclement weather. The shifting of the axis of advance further to the west and the rapidity of the pursuit left the C.C.Ss. far behind, and at one stage of the advance no less than eighty miles from the front. Thus each journey took about eight to ten hours and resulted in a shortage of ambulance cars.

On June 5, 31 (Ind.) Fd. Amb. opened a M.D.S. in S. Vico. This

remained open until June 8. When Subiaco had been passed 31 (Ind.) Fd. Amb. moved forward to Palombara Sabina, opening there on June 10. Then 33 (Ind.) Fd. Amb. opened a M.D.S. at Terni on June 14. At this time the pursuit was so rapid that the A.D.S. with Ind. 19th Bde., now leading the advance, was about twenty miles in front of the M.D.S. Then 31 (Ind.) Fd. Amb. opened a M.D.S. in Massa Martana on June 16. Owing to transport difficulties only a light section could be established at this time but the main body caught up on the following day. Next a light M.D.S. was established in Bevagna. The heavy rain that fell on June 17/19 aggravated the problem of evacuation, the many diversions becoming practically impassable. It was therefore necessary for the M.D.S. to hold all casualties save those requiring urgent surgical attention.

The M.D.S. of 33 (Ind.) Fd. Amb. at Terni closed on June 18. On the same day a light M.D.S. was opened by 31 (Ind.) Fd. Amb. about two miles to the south-east of Assisi.

With the improvement in the weather and the speeding up of the advance, it became possible on June 19 for both 29 and 33 (Ind.) Fd. Amb. to move up to the Assisi area, in which the Germans had had six hospitals and one convalescent depot. From these all equipment had been removed.

By June 20 the advance was temporarily halted. Indian 8th Division had moved over three hundred miles in a month, the distance covered each day varying from ten to thirty miles. Thus it was that very considerable strain was placed both on personnel and on transport. But since at no time during this advance were casualties heavy, the field ambulances were able always to render a satisfactory service.

On June 20, 865 F.D.S. opened in Assisi and to this medical unit all cases requiring urgent surgical attention were evacuated from the A.D.Ss. with the Indian brigades and also from the M.D.S. of 31 (Ind.) Fd. Amb.

At the beginning of the advance from San Vico on June 3 evacuation from the field ambulances was to 2 (Ind.) C.C.S., which at this time was open in Santa d'Aquino, to the east of Cassino. On June 5, 2 (Ind.) C.C.S. passed u/c X Corps and by June 9 it had moved forward to the Veroli medical area south-east of Alatri. But no sooner had it opened than it became necessary to move forward again. On June 14 its heavy section moved to Castelnuovo on Route 3, north of Rome, while its light section moved to the Rome medical area, there to stage Indian casualties. Attached to the heavy section were one F.T.U. and one F.S.U., as was also a British field ambulance for staging British casualties.

On June 16, the light section in the Rome medical area was relieved by Lt. Sec. 3 (Ind.) C.C.S. and it moved forward to join the heavy

section. 3 (Ind.) C.C.S. had arrived in Italy on May 4. It was in Pollutri until June 5 when it moved to Pozzili, to the east of Rome.

On June 17, Lt. Sec. 2 (Ind.) C.C.S. was moved forward to Acquasparta and the heavy section to Assisi on June 22, where it was accommodated in hospital buildings along with 865 F.D.S. and X Corps Exhaustion Centre. On the following day the light section also moved to Assisi.

With the establishment of this C.C.S. in Assisi evacuation of cases from the forward area ceased to be a cause of anxiety. Evacuation from the C.C.S. was by M.A.C. through staging posts to the control post of 3 District at Cassino. Here the casualties were sorted and despatched to the appropriate hospitals. Indian casualties were evacuated to the Indian hospitals in the Cancelli medical area; 30 I.G.H. at Pontecagnano, south of Naples, received the surplus. On June 27 two sections of 30 I.G.H., each of 100 beds, moved to Rome to become attached to 48 B.G.H. and to open an Indian wing. To this casualties from 2 (Ind.) C.C.S. were sent and evacuation therefrom was to the Cancelli medical area.

It was at this time that the medical services of Indian 8th Division became acquainted with the F.D.S. It is therefore of interest to note the impression that this medical unit created and to note the use to which it was put. In the quarterly reports of this division it is recorded 'that the F.D.S. included six to eight medical officers and 130 O.Rs. and that medical detachments either from field ambulances or from the C.C.S. were attached to these units to look after Indian patients. In equipment a F.D.S. can be placed midway between a M.D.S. and a C.C.S. and it is fully mobile. To each F.D.S. two F.S.U.s. and one F.T.U. are usually attached. The usual method of employment is for the F.D.S. to follow the M.D.S. closely as this moves forward. All Priority I and II cases are triaged at the F.D.S. for immediate operation. When the F.D.S. moves forward either a C.C.S. or a detachment of it usually takes over all immobiles. When this is not possible and it is imperative that the F.D.S. shall move forward, a company of the corps field ambulance is detailed to take over these cases. It was not the practice to divide the F.D.S. into forward and rear detachments, for even though there were heavy and light sections it was not really divisible for many reasons, notably in respect of cooks and personnel, but more especially in regard to medical equipment and stores, such as surgical instruments, etc., as well as ordnance equipment. So in all cases a F.D.S. moved forward complete in order that its benefits might be utilised to the full. Surgical supervision of the cases left behind was usually undertaken by a surgeon of the F.D.S. who visited them daily or else by a surgeon from the nearest C.C.S. The F.D.S. was, to a great extent, a complete answer to the requirements of the medical administrator who was required to speed up evacuation from the M.D.S. and,

at the same time, afford surgical treatment as far forward as possible. These units truly deserved the name of "life-saving units", by which name they came to be known'.

After the fall of Perugia, Indian 8th Division, u/c X Corps, was detailed to block the two roads to Perugia from the north-east and thence to advance to Città di Castello. The advance of the division along the eastern side of the Tiber was stubbornly contested. Ind. 17th Bde. made but little advance toward Colombella Alta. Ind. 21st Bde. was then brought up and relieved Ind. 17th Bde. on June 25, the latter brigade then side-stepping to the right. The two brigades attacked on June 26, but still Colombella Alta was not taken. Indian 8th Division was then withdrawn for rest and was relieved by Indian 10th Division on June 28.

For the attack upon Colombella Alta by Ind. 17th Bde. 31 (Ind.) Fd. Amb. opened a battle M.D.S. at Petignano on June 22. Casualties requiring urgent surgical attention were evacuated to 865 F.D.S. at Assisi. At this F.D.S. there was a detachment of Indian medical personnel to look after Indian casualties. Further evacuation was to Lt. Sec. 2 (Ind.) C.C.S. at Acquasparta. On June 23 2 (Ind.) C.C.S. moved to Assisi.

When Indian 8th Division moved into the rest area near Foligno at the end of June, 31 (Ind.) Fd. Amb. moved to Assisi and opened a camp hospital to lessen the burden of 2 (Ind.) C.C.S. by admitting all malaria and P.U.O. cases.

On July 15, Indian 8th Division passed from u/c X Corps and moved from the Foligno area to the vicinity of Siena. On July 19, H.Q. 29 (Ind.) Fd. Amb. opened a M.D.S. to the west of Santa Magionni to function as the divisional M.D.S. On July 22, 29 (Ind.) Fd. Amb. moved to Poggibonsi and opened the divisional battle M.D.S. in the local hospital. One company each of 29 and 33 (Ind.) Fd. Amb. were attached to Ind. 21st and 19th Inf. Bdes. respectively.

On July 23, Indian 8th Division advanced on a two brigade front. All casualties were evacuated to the M.D.S. at Poggibonsi. As the axes of advance of the brigades began to diverge 31 (Ind.) Fd. Amb. opened a M.D.S. at Fiano to serve the brigade on the right. On July 30, 1 (Ind.) Mob. Surg. Unit and Lt. Sec. 3 (Ind.) C.C.S. joined the M.D.S. of 29 (Ind.) Fd. Amb. in Poggibonsi which now became the M.D.S. for both sectors.

These arrangements continued up to the fall of Florence. From the M.D.S. evacuation was to 3 (Ind.) C.C.S. at Taverne d'Arbia, about six miles to the east of Siena. This unit moved forward to Poggibonsi on August 4 and 29 (Ind.) Fd. Amb. then moved to Castelfiorentino and went into reserve. Evacuation from this C.C.S. was to the Army medical area, four miles to the west of Castiglione del Lago on the shore of Lake Trasimene. 9 (Ind.) C.C.S. received Indian casualties. To this

C.C.S. 7 V.D.T.C. was attached and, on August 3, 18 I.S.S. was attached to take the overflow from the C.C.S. From 9 (Ind.) C.C.S. evacuation was by air to 16 C.G.H. at Cancellor or by ambulance car to 30 I.G.H. in Rome, *via* Orvieto.

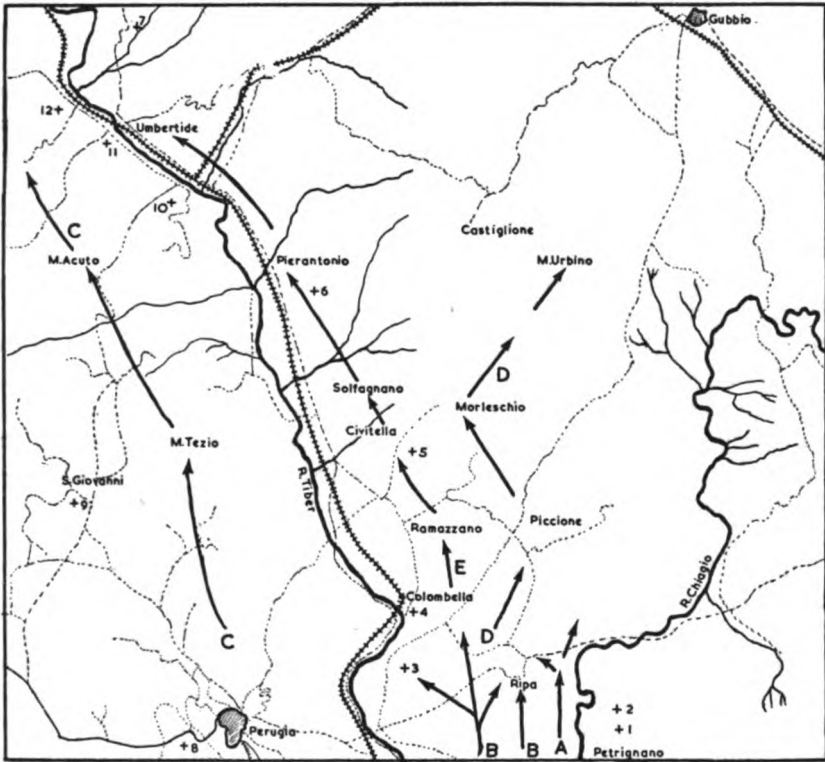


FIG. 84. X Corps. Medical Cover. June 18–July 7, 1944.

A. Ind. 17th Inf. Bde.

B. Ind. 19th " "

C. Ind. 10th " "

1. M.D.S. 31 (Ind.) Fd. Amb. June 22

2. M.D.S. 21 " " June 28

3. 14 (Ind.) Fd. Amb. (in reserve) July 4

4. M.D.S. 21 (Ind.) Fd. Amb. July 4

5. A.D.S. " " July 4

6. A.D.S. 3 (Ind.) Lt. Fd. Amb. July 6

D. Ind. 20th Inf. Bde.

E. Ind. 25th " "

7. Car Post 'B' Coy. 14 (Ind.) Fd. Amb. July 7

8. 30 (Ind.) Fd. Amb. July 2

9. A.D.S. 30 (Ind.) Fd. Amb. July 5

10. " " " July 6

11. M.D.S. 14 " " July 7

12. A.D.S. 30 " " July 7

INDIAN 10TH DIVISION

Indian 10th Division relieved Indian 8th Division on June 28 in the Colombella Alta area between the Tiber and the Chiascio Rivers.

On June 30, Indian 10th Division began its advance along the road Perugia–Umbertide–Città di Castello. Ind. 20th Bde. advanced to

Piccione, to be held up in the outskirts of the town, but Ind. 25th Bde. entered Colombella Alta without opposition. On July 2 both Civitella and Solfignano were occupied by Ind. 25th Bde. while Ind. 20th Bde. advanced toward Coll di Plazo and occupied Morleschio. On the night of July 2/3 the advance was resumed from Monte Folone and without opposition Monte Urbino was reached, to be occupied during the day of the 3rd.

To the west of the Tiber Ind. 10th Bde. had occupied Monte Tezio and on the night of July 2/3 launched an attack against the general line Monte Corona-Monte Acuto-Monte Murlo. After heavy fighting Monte Acuto and Monte Corona were captured on July 5.

In the central sector Ind. 25th Bde., after severe fighting, captured Pierantonio on July 4.

Following the capture of Cortona by XIII Corps, the Germans in front of Indian 10th Division withdrew and, on July 5, Ind. 25th Bde. entered Umbertide while Ind. 20th Bde. passed through Castiglione to reach the Assino by the evening of the 5th. Ind. 10th Bde. moved forward to the line of the Nestore. On July 6, Ind. 25th Bde. attacked the village of Montone, four miles to the north of Umbertide. The initial frontal attack was very costly and failed, but following an out-flanking movement made during the night of July 6/7 the village was captured after severe fighting.

Ind. 20th Bde., on the night of July 7/8, captured Carpini and by the 8th had reached a line C. dei Sorci-Monte Gengarella-C. Monte Falcone. Meanwhile supporting troops of Ind. 20th Bde. had reached Pietralunga. On July 10, Ind. 25th Bde. occupied Colle di Pozzo. These two brigades were constantly counter-attacked by the Germans, but with the exception of Pietralunga they held on to their gains. On July 11, Ind. 25th Bde. entered Promano. On the night of July 13/14 Monte delle Gorgacce was captured by Ind. 20th Bde.

When Indian 10th Division relieved Indian 8th Division, 21 (Ind.) Fd. Amb. took over the M.D.S. at Petrignano on June 28. When the divisional front was extended to the west of the Tiber 30 (Ind.) Fd. Amb. opened a second M.D.S. on July 2, about two miles west of Perugia to deal with casualties from Ind. 10th Bde. sector. With the fall of Colombella Alta 21 (Ind.) Fd. Amb. opened a M.D.S. for all casualties, both sick and wounded, to the east of the Tiber, about a mile south of Colombella Alta. 30 (Ind.) Fd. Amb. provided an A.D.S. to serve Ind. 10th Bde.; 21 (Ind.) Fd. Amb. an A.D.S. to serve Ind. 20th Bde., and 14 (Ind.) Fd. Amb. an A.D.S. to serve Ind. 10th Bde., while one company of 14 (Ind.) Fd. Amb. was brigaded with Ind. 25th Bde. All battle casualties occurring west of the Tiber were evacuated to 19 C.C.S. at Perugia. At this C.C.S. 39 I.S.S. formed an Indian wing. The sick were evacuated to 2 (Ind.) C.C.S. at Assisi, British sick to 19 C.C.S. All

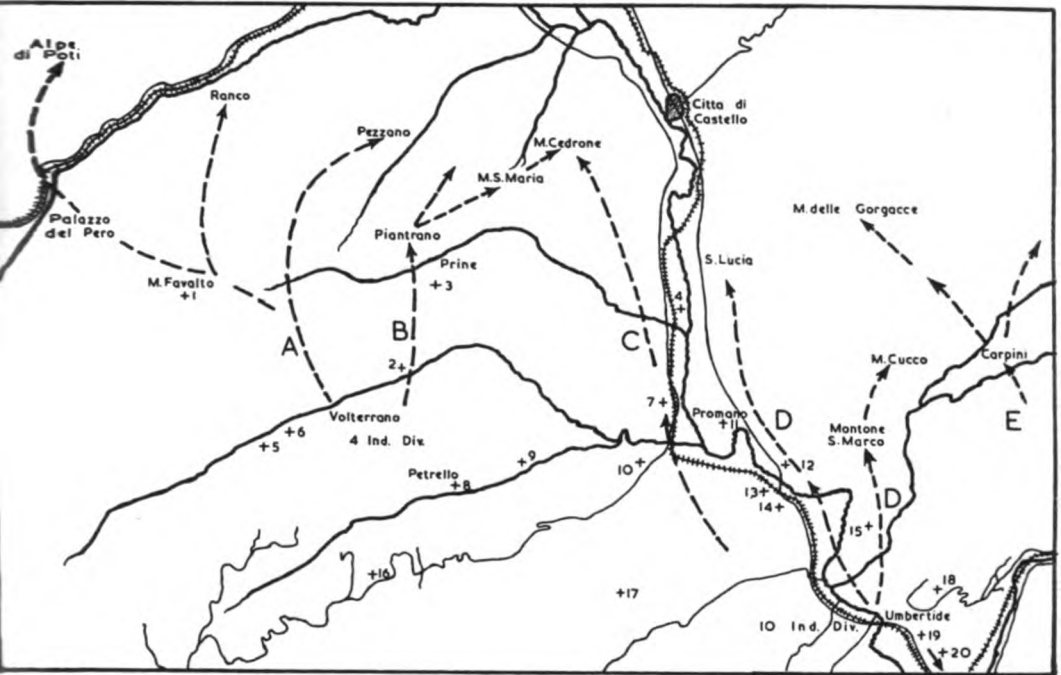


FIG. 85. X Corps. Medical Cover. July 7-18, 1944.

- | | |
|-----------------------|------------------------|
| A. Ind. 7th Inf. Bde. | C. Ind. 10th Inf. Bde. |
| B. Ind. 5th " " | D. Ind. 25th " " |
| | E. Ind. 20th Inf. Bde. |

1. Lt. A.D.S. 'B' Coy. 17 (Ind.) Fd. Amb. July 17
2. " " " " July 12-16
Main A.D.S. " " July 14-16
3. A.D.S. 'A' Coy. 17 (Ind.) Fd. Amb. July 11-16
4. A.D.S. 30 (Ind.) Fd. Amb. July 16
5. Main A.D.S. 'B' Coy. 17 (Ind.) Fd. Amb. July 16-17
6. " " " " July 17
7. A.D.S. 30 (Ind.) Fd. Amb. July 13-16
8. Lt. A.D.S. 17 (Ind.) Fd. Amb. July 10-12
9. A.D.S. " " July 12-14
10. M.D.S. 26 (Ind.) Fd. Amb. July 12
11. A.D.S. 'B' Coy. 14 (Ind.) Fd. Amb. July 14
12. " " " " July 12-14
13. A.D.S. 30 (Ind.) Fd. Amb. July 12
14. 866 F.D.S. July 13
15. A.D.S. 'B' Coy. 14 (Ind.) Fd. Amb. July 10-12
16. A.D.S. 26 (Ind.) Fd. Amb. July 12
17. Main A.D.S. 17 (Ind.) Fd. Amb. July 12-14
18. A.D.S. 21 (Ind.) Fd. Amb. July 8
19. M.D.S. 14 (Ind.) Fd. Amb. July 7
20. 865 F.D.S.

and on to 2 (Ind.) C.C.S. and 19 C.C.S.

battle casualties, together with all sick, both British and Indian, occurring to the east of the Tiber, were evacuated to 2 (Ind.) C.C.S. at Assisi. All cases of exhaustion were sent to 14 C.C.S. at Todi. Evacuation from the M.D.S. rearward was by 9 M.A.S.

The evacuation chain remained substantially the same until the fall of Umbertide on July 5. Then H.Q. 14 (Ind.) Fd. Amb. moved to Umbertide and opened a battle M.D.S. 21 (Ind.) Fd. Amb., near Colombella Alta, now received the divisional sick.

The tactical handling of the medical units at this time was dictated by the peculiar nature of the terrain. The M.D.S. was by-passed in the opening phases when the distance between the A.D.S. and the C.C.S. was only four to six miles, but as the advance continued and the evacuation chain lengthened the M.D.S. was once more used. One company of a field ambulance was attached to each brigade to open up an A.D.S. whenever this was required.

Since the fighting was in very mountainous country evacuation from the forward area was by S.B. and ambulance jeep. Whenever the jeep could reach the R.A.P. the S.Bs. were dispensed with. When necessary a car post was located as far forward and as near to the R.A.P. as possible.

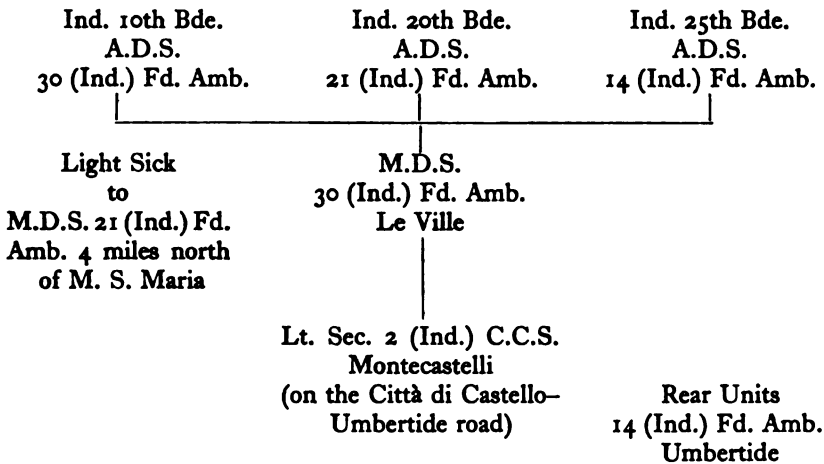
A second company of the field ambulance was usually kept in reserve, and since at no time did the distance between the A.D.S. and the M.D.S. exceed ten miles, there was no need to make use of this second company for the establishment of a staging post. Similarly the short distance between the M.D.S. and the C.C.S. and the slow rate of advance removed the necessity for the establishment of a rear M.D.S. Usually, therefore, the A.D.M.S. of the division had in reserve two H.Qs. and three companies (field ambulance). As a rule one field ambulance H.Q. was used for the establishment of a M.D.S. for the divisional sick.

The M.D.S. of 14 (Ind.) Fd. Amb. continued to function at Umbertide as the battle M.D.S. for Indian 10th Division. To it were attached one M.D.U. and one F.T.U. One company each of 14 and 21 (Ind.) Fd. Amb. were attached to Ind. 25th and 20th Bdes. These companies provided A.D.Ss. and car posts. H.Q. 30 (Ind.) Fd. Amb. and one company remained at Umbertide closed and in reserve while 21 (Ind.) Fd. Amb. at Umbertide received the divisional sick.

On July 20, 30 (Ind.) Fd. Amb. moved forward from Umbertide to Nestore, on the Umbertide-Città di Castello road, to open a battle M.D.S. and to receive casualties from Ind. 10th and 20th Inf. Bdes. on the western side of the Tiber. Casualties from Ind. 25th Inf. Bde. on the east of the Tiber were received by the M.D.S. of 14 (Ind.) Fd. Amb.

By July 25 all three brigades of Indian 10th Division were deployed to the west of the Tiber on the line of the Cerfone. On July 28, 21 (Ind.) Fd. Amb. opened a M.D.S. about four miles to the north of Monte S.

Maria to receive light battle casualties and sick. On July 30 the M.D.S. of 30 (Ind.) Fd. Amb. moved forward to Le Pietre on the Città di Castello-Monterchi road and began to function as the battle M.D.S.



21 (Ind.) Fd. Amb. provided four light sections to afford medical cover for Ind. 20th Inf. Bde. These sections were meant to form A.D.Ss. with H.Q. Bde., on mules, at the car post, on jeeps, at the Roadhead and in reserve. 48 S.Bs. from the other divisional field ambulances were attached to 21 (Ind.) Fd. Amb. The roadhead A.D.S. was established about a mile to the north of Anghiari. Evacuation from these A.D.Ss. was to the M.D.S. of 30 (Ind.) Fd. Amb. at Le Ville.

Lt. Sec. 2 (Ind.) C.C.S. moved from Assisi to Montecastelli on July 23, relieving 866 F.D.S. Evacuation therefrom was to Hy. Sec. 2 (Ind.) C.C.S. at Assisi until this unit moved to Castiglion Fiorentino on July 30. Thereafter evacuation to the Army area was through 19 C.C.S. at Perugia. With 19 C.C.S. was 39 I.S.S. On August 3 these units were relieved by 54 B.G.H.

(ii)

The Assault on and Breach of the Gothic Line Operation 'Olive'

The facts of geography made it certain that the Germans, withdrawing northwards from the line of the Arno, would next stand on a line based on the Etruscan Apennines to protect the flat lands of the valley of the Po. In the valley of the upper Tiber the mountainous spine of the Italian peninsula bends north-west to join the Maritime Alps in

Liguria and to form a huge natural barrier. In the Adriatic sector the mountains stop short of the sea, but this coastal corridor is traversed by many rivers and is overlooked by the foothills of the Apennines. It leads into a plain that is intersected by a vast system of watercourses and that has no communication with the western part of central Italy save by a few roads that run through difficult and easily defended mountain passes. The natural strength of this line—the Gothic Line—had been greatly augmented by the construction of coastal defences south of Spezia on the Tyrrhenian coast and at Pesaro on the Adriatic and of fortifications in the area of Futa Pass on the main road through the mountains from Florence to Bologna (Route 65). From the vicinity of Spezia the line ran to Marina di Carrara and thence through the mountains north of Pistoia to Futa Pass and thence eastwards along the southern side of the watershed to the Adriatic foothills and along the River Foglia to the vicinity of Pesaro.

When the French Expeditionary Force left Italy for Operation 'Anvil' A.A.I. lost their most experienced mountain troops. It was decided that the main strength of the assault should be exerted at the extreme eastern end of the line so as to roll up the German left where it was least protected by the terrain. This new plan demanded much regrouping and involved many complicated and difficult moves over an inadequate road net and under conditions of great secrecy. However, this regrouping was completed by August 22.

The Order of Battle A.A.I. as at August 25, 1944, is given in Appendix XVIII.

OPERATION 'OLIVE'. TACTICAL PLAN

1. The Polish Corps on the extreme right would attack and seize the high ground north-west of Pesaro. Thereafter the Corps would pass into Army Reserve.
2. Canadian I Corps, on the left of the Polish Corps, would capture the heights west of Pesaro, reach Route 16 at Cattolica and thrust along the coast road towards Rimini.
3. V Corps on the left of the Canadians would advance on an axis to the west of Rimini directed on Bologna and Ferrara.
4. The offensive would open on August 25.
5. On the left of V Corps, X Corps, consisting of Indian 10th Division and an improvised brigade, would hold the mountain front sector and act as a link between V Corps and XIII Corps.
6. XIII Corps, consisting of 1st, Indian 8th and S.A. 6th Armoured Divisions and Cdn. 1st Armd. Bde., would pass to U.S. Fifth Army.
7. U.S. Fifth Army, by carrying out ostentatious preparations, would create the impression that an attack by both armies between Pontassieve and Pontedera was imminent and would be prepared

to break through on the axis Florence–Bologna, possibly about D-day+5, using U.S. II Corps on the left and XIII Corps on the right.

To V Corps, consisting of 4th, 46th, 56th, Indian 4th and 1st Armoured Divisions, 7th Armd. and 25th Army Tk. Bdes., was allotted the major rôle. 46th and 56th Divisions were but newly returned from the Middle East where they had been resting and 7th Armd. Bde. had come from Burma. V Corps tactical plan was to attack with 46th Division on the right and Indian 4th Division, supported by 25th Army Tk. Bde., on the left and to bring in 56th Division as the opposition stiffened, 1st Armoured Division to be prepared to exploit success. The main objectives were to be the Gothic Line and Monte Gridolfo on the right and the high ground at Tavoletto on the left.

THE TERRAIN

The country in which Eighth Army was now to operate was very different from that which faced U.S. Fifth Army, but no less difficult. It was a broad and level expanse bounded on the east by the Adriatic sea, on the west and north by the River Reno and on the south by Route 9, the Via Emilia of the Romans, which ran in a straight line west—north-west under the shadow of the foothills of the Apennines with the principal towns of the region disposed along it at ten-mile intervals—Savignano, Cesena, Forli, Faenza, Imola. The ridges of these foothills ran roughly north-eastwards at right angles to the axis of advance. No less than thirteen major rivers traversed the region near the coast where the water flows in many channels between mud and gravel flats. Heavy rain converts all of them into wide, muddy torrents swiftly flowing between their flood banks which, north of Route 9, rose to as high as forty feet above the level of the plain.

The coast line was regular and featureless, the only port of military value being Rimini. The flat coastal strip of sand dunes and pinewoods was narrow. Inland of it was a belt of reclaimed swamp that could be flooded by stopping the pumps. A central area, reaching almost to Route 9, was liable to flooding after heavy rain. On either side of Route 9 was a well drained segment of gently rolling country scantily wooded, thickly populated and highly cultivated, a wine growing region with many farms and small villages. South of the road the foothills of the Apennines overlooked the countryside.

To the north lay the great plain of Ravenna, flat and featureless. Along its eastern border, close to the coast, for half its length ran Route 16, from Rimini to Ravenna. At Cervia the coast recedes to leave a marshy wedge-shaped strip between itself and the road. Between Routes 9 and 16 was a network of secondary roads and a number of useful laterals followed the lines of the rivers.

THE WEATHER AUGUST 1944—MARCH 1945

In a terrain such as this the weather could, and did, so greatly affect military operations that it is desirable at the outset to refer to its vagaries.

Until the end of September it was warm and settled. The heat by day seldom became excessive but for long periods the nights were warm and sultry enough to interfere with sleep. Dust rising in thick clouds to a height of twenty feet above the roads made road movement uncomfortable and dangerous. On August 18 there was a localised freak hailstorm with hailstones up to three-quarters of an inch in diameter, followed by torrential rain that flooded the roads and camps. On September 20 and 28 there were abrupt changes to cold blustery winds and downpours of rain. October was very wet throughout, rain falling on twenty days during the month with long continued downpours on several occasions, camps being flooded and vehicles bogged. In November heavy storms occurred about the middle and towards the end of the month and there was flooding on several main roads. Even the delivery of supplies from the base was interrupted at times by the collapse of bridges and railway tunnels. In December the cold increased rapidly and snow settled on the hills. There was a general snowfall on December 23 which rapidly cleared, but at the end of the year one main route (Route 77) was blocked by snow.

The new year opened with cold, dry weather and several heavy snowfalls and throughout most of January the greater part of the Army area was covered with a thick layer of snow. Hard frosts occurred at night but there were occasional mild spells which led to local floods and in the Ravenna neighbourhood fogs were frequent. On the roads icy surfaces caused very many accidents. Route 67 from Forli to Florence, where difficulty had been expected during January, was kept open throughout. Towards the end of January, however, short periods of sunshine and thaw and blustery dry winds resulted in a gradual clearing of the snow without much flooding. Excellent weather followed, with sunshine and clear skies, very little rain and gradually increasing temperature. By the end of March the countryside was full of fruit trees in blossom. Weather conditions did not at any time seriously interfere with transport.

THE ASSAULT

EIGHTH ARMY

By August 25 the Polish Corps was on the line of the Metauro from the coast to Fossombrone and in a position to attack towards Pesaro and X Corps had moved forward in the San Sepolcro—Subbiano—Bibbiena area.

Following upon the bombardment of critical targets by the Air Force, the general offensive was launched in the early hours of August 25 by Indian 4th Division, which by nightfall was closing on the Metauro with

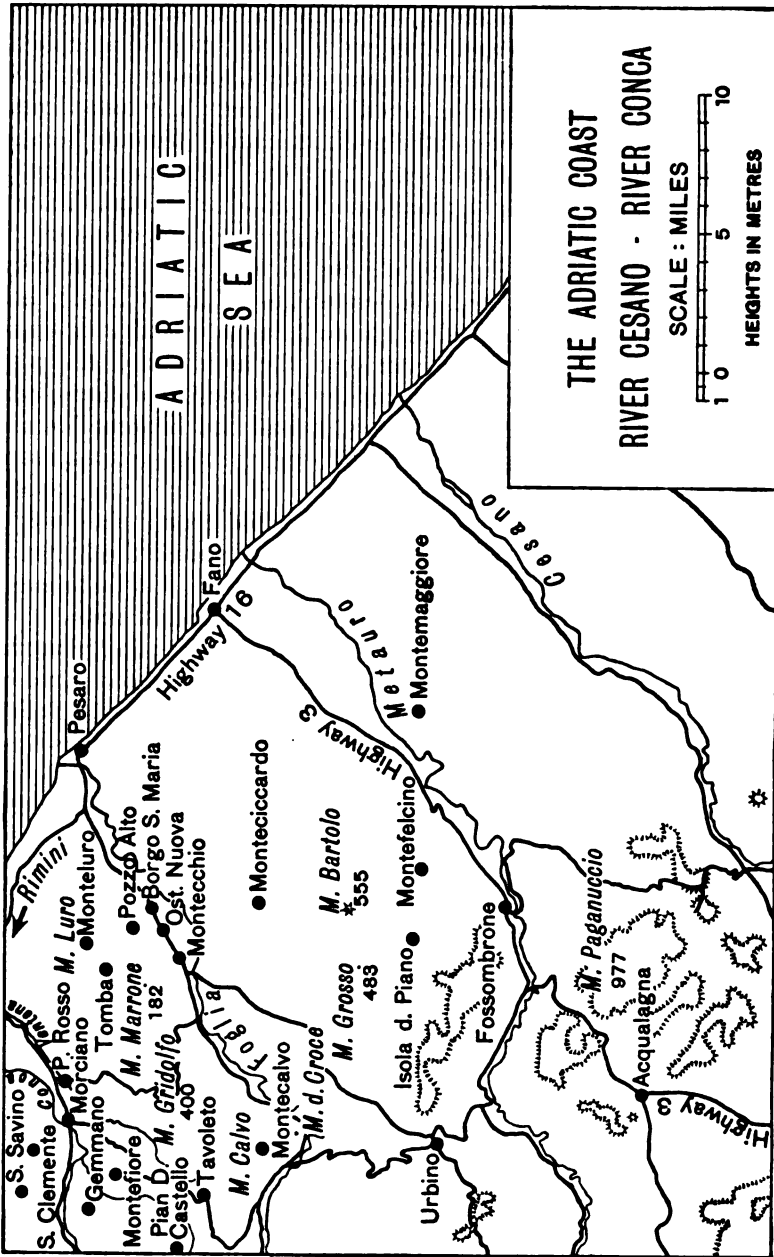


FIG. 86. The Adriatic Coast. From the Cesano to the Conca.

its 5th Bde. on Monte Paganuccio, south of Fossombrone, and its 7th Bde. at Acqualagna on Route 3. Late that night the leading elements of 46th Division, behind a screen of the Household Cavalry, moved up to the line of the Metauro and, crossing the river, took Montefelcino before dawn on the 26th. During this day and the following, 46th division continued to advance and captured Monte Bartolo, Monte Grosso and Monte Tombola. By noon of the 29th, its leading elements were on the ridge overlooking the Foglia valley and the Germans in front of them had withdrawn into the Gothic Line. On the left Indian 4th Division had made comparable progress and two of its battalions were on the high ground overlooking the city of Urbino, which had been entered unopposed. By nightfall on August 29/30, Ind. 5th Bde. had got across the Foglia and had taken Monte della Croce and went on to capture the nearby village of Montecalvo in the afternoon of the 31st. Meanwhile 46th Division had fought its way across the Metauro, into Montevecchia and on towards Mondaino and had broken into the Gothic Line and had taken Monte Gridolfo and the high ground about San Francesco.

By midday on September 1 the Gothic Line had been broken over a front of fifteen miles. On the right the Poles had crossed the Metauro and, overcoming stiffening resistance, had crossed the Foglia to crash into the Gothic Line in the Bruciate area and to outflank Pesaro.

Canadian I Corps had taken over from the Polish Corps on August 24 a sector east and west of Montemaggiore and had assumed command of the Polish Cavalry Force. Its plan was to co-operate with the Polish Corps in a silent crossing of the Metauro, to breach the Gothic Line and to advance on Rimini. In the early hours of August 26, Cdn. 1st and 2nd Bdes. crossed the river, reached the Via Flaminia and advanced without meeting much opposition until the high ground east and west of Monteciccardo was reached. By nightfall on the 29th, Canadian 5th Armoured Division was north of the Cesano and on the 28th, Cdn. 1st Bde. reached the Foglia and Cdn. 2nd Bde. captured Monteciccardo. The Germans withdrew beyond the Foglia and the Canadians advanced to occupy the high ground south of the river. On the 30th the Air Force pounded the Gothic Line between Montecchio and Borgo Santa Maria and in the afternoon Canadian patrols found Montecchio, Colle Mancini and Osteria Nuova unoccupied. Cdn. 3rd and 11th Bdes. crossed the Foglia to establish bridgeheads beyond but were checked by heavy fire.

Canadian 1st Division pressed on towards Monteluro and Canadian 5th Armoured Division towards Tomba di Pesaro. Monte Marrone, Borgo Santa Maria and Pozzo Alto were taken after bitter fighting. The Carpathian Division of the Polish Corps then moved east to cut the road from Pesaro to Rimini near Gradara. The Germans withdrew from Pesaro on September 2. The heights above Monteluro were taken

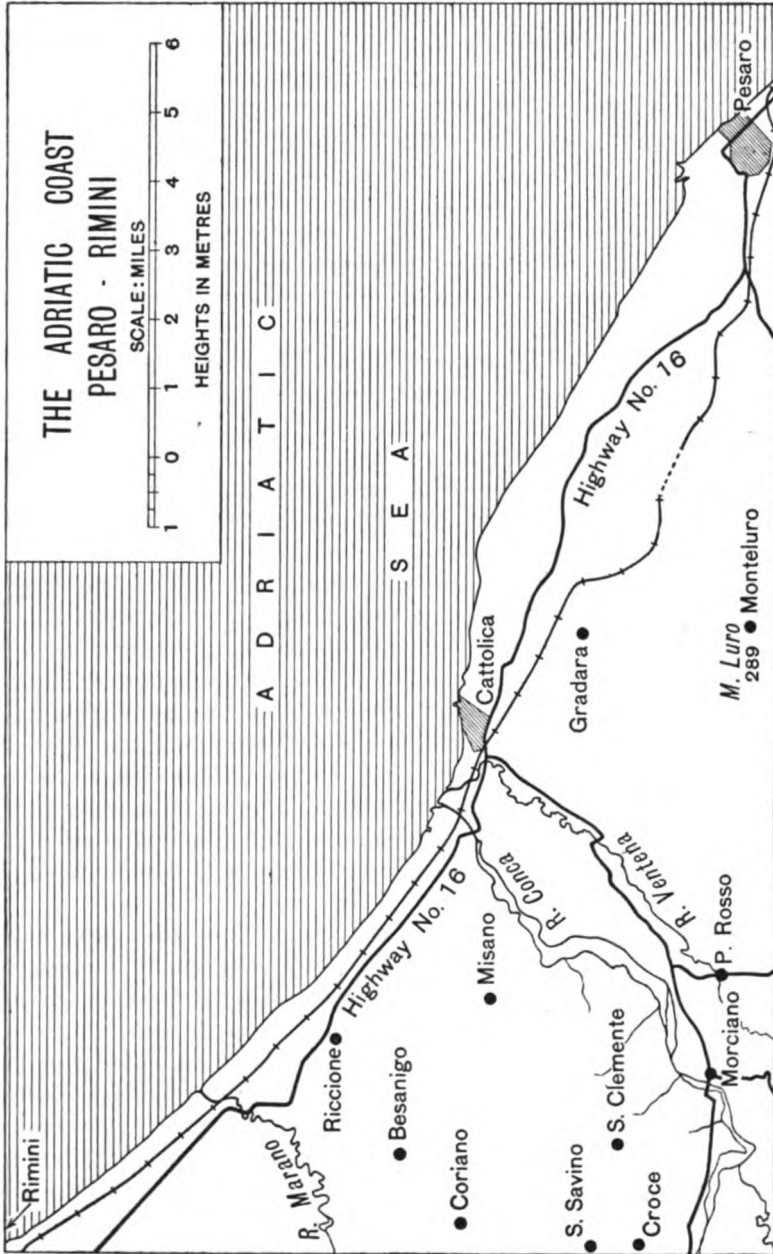


FIG. 87. The Adriatic Coast. From Pesaro to Rimini.

by the Canadians and held against determined counter-attack. Thereafter the Canadians fought their way towards Tomba di Pesaro which was taken by assault. Following hard upon the heels of the Germans as they disengaged, the Canadians reached the Conca and established a small bridgehead beyond it on September 2. On the following day they took and held Misano and reached Besanigo, which was captured on the 5th. The Canadian advance was checked west of Riccione. To the Canadian Corps now passed 4th Division, 25th Army Tk. Bde. and Greek 3rd Mtn. Bde.

In V. Corps sector, Indian 4th Division was firmly established on Monte Calvo on September 1 but its 7th Bde. facing Monte San Giovanni had not yet succeeded in getting across the Foglia. Its 5th Bde., advancing from Monte Calvo, was closing on Tavoleto and was withstanding heavy counter-attack.

138th Bde. of 46th Division reached the Ventena, two miles below Ponte Rosso, there to make contact with the Canadians, and on the following day forced a crossing of the Conca and established itself on the slopes below San Clemente. 139th Bde. took the ridge overlooking the valley of the Conca above Morciano. This village was captured as was the bridge in front of it. 46th Division then pressed on towards Coriano but was checked a mile or so therefrom. 1st Armoured Division's attempt to break through the stiffening opposition on the high ground in the Coriano-San Savino area on September 4 was unsuccessful.

56th Division, operating in very difficult country, was meeting very stubborn opposition and was checked in front of the mountain village of Montefiore and the Gemmano ridge. 167th Bde., with Ind. 11th Bde. of Indian 4th Division, attacked towards Tavoleto on the night of September 3/4 and captured both Tavoleto and Montefiore. On the extreme left Ind. 7th Bde. took Monte San Giovanni. During the night of September 4/5, 167th and 168th Bdes. of 56th Division crossed the Conca and pressed forward until checked in front of San Savino and Croce and of the northern slopes of Gemmano.

During the night of September 5/6, 168th Bde. and 167th Bde. fought for a foothold in the village of Croce and finally secured it. The village was recaptured by the Germans and was then retaken. 169th Bde. was brought up to assault Monte Colombo and Montescudo and so to turn the Gemmano position. But before this attack could develop the Germans regained the lower slopes of the Gemmano ridge south of the Conca. Throughout September 8 the German counter-attacks continued and Casa Menghino was lost. When 169th Bde. attacked progress was made; the village of Gemmano was taken but the crest of the ridge was not reached. By the evening of the 9th the brigade was in possession of the eastern half of the southern slopes of the ridge. Meanwhile Indian 4th Division had succeeded in taking the formidable heights of Pian di Castello and the village of Pian di Castello itself.

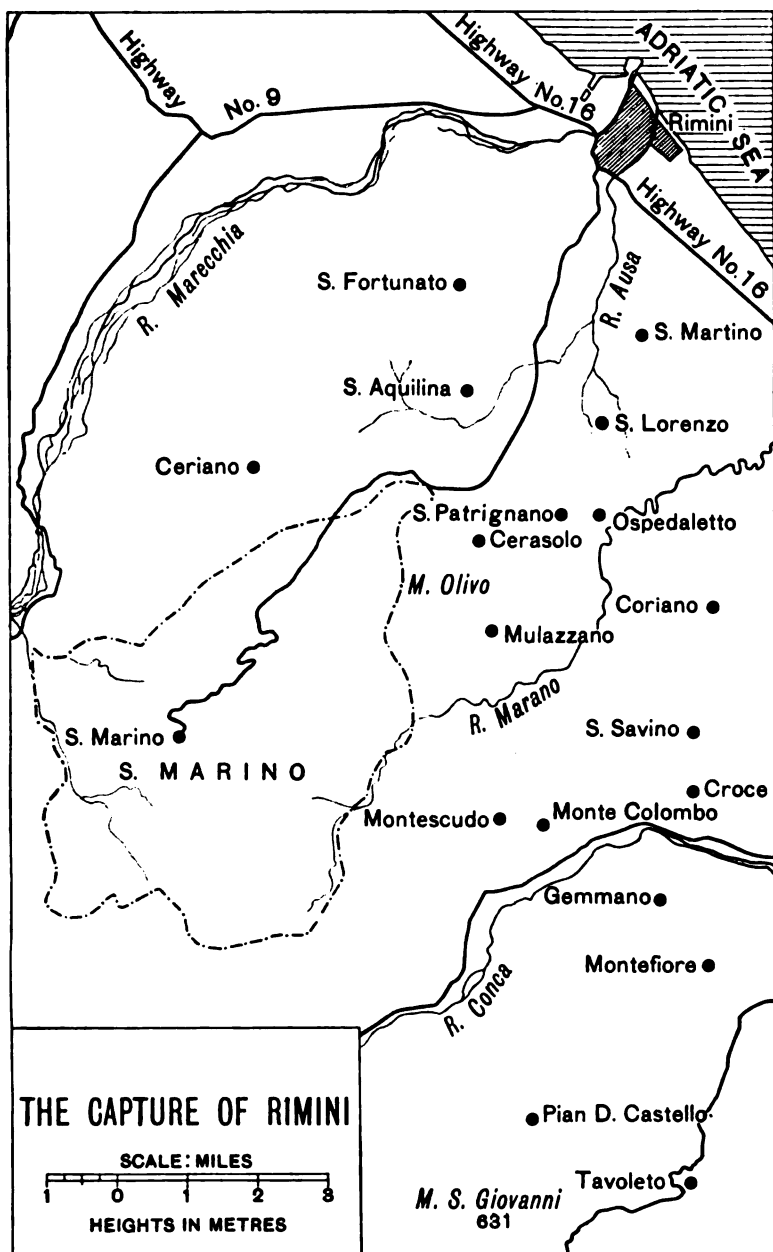


FIG. 88. The Capture of Rimini.

Rain was now falling heavily and the ground had become a quagmire. The troops were very tired and so the advance in this sector slowed down to a temporary halt.

The Gothic Line had been breached but this success had not been exploited. Eighth Army's losses had been heavy, nearly 8,000 killed, wounded and missing since August 25. The weather was most unpropitious and the German resistance stiffening. Nevertheless, an attempt to exploit success was made. 46th Division relieved 56th Division and on September 10 the attack on Gemmano was resumed. The high ground remained in German hands, however. Then, on the 12th, 1st Armoured and Canadian 5th Armoured Divisions assaulted the Coriano ridge as a preliminary to an advance on San Fortunato and Rimini while 56th Division mounted an attack on Croce and 46th and Indian 4th Divisions again attempted to clear the Gemmano ridge as a step towards the capture of Montescudo. In the opening phase of the battle, Eighth Army quickly gained success, the villages of Coriano and San Savino being captured. But the Fornaci was so swollen by the rain that it constituted a formidable barrier to the armour. On the left of the Canadians, 56th Division advanced about a mile, but then was checked. On the coast Canadian 1st Division could not get across the Marano until the 14th, when Greek 3rd Mtn. Bde. reached the southern bank and the Canadians secured a small bridgehead. 1st Armoured Division occupied the Ripabianca ridge and on its left 167th Bde. of 56th Division, from the vicinity of Sensoli, was overlooking the Marano. On the night of September 13/14, Indian 4th Division gained possession of the southern end of the Gemmano ridge and 138th Bde. entered Gemmano and occupied the slopes of the ridge running down to the Conca. By the evening of the 14th, 46th Division had captured Monte Colombo and the Germans were disengaging. Ind. 11th Bde. attacked and by dawn on the 15th the whole of the Gemmano ridge had been taken.

4th Division then passed through Canadian 5th Armoured Division to cross the Marano at Ospedaletto and to take San Patrignano while Canadian 1st Division took San Lorenzo in Correggiano and pushed on to San Martino in Monte l'Abate, three miles south of Rimini. On V Corps front 1st Armoured Division crossed the Marano and captured Colle il Monte and in the centre 46th Division took Montescudo.

On September 16 the Canadian infantry at San Martino was driven off the ridge by German gunfire. 1st Armoured Division repulsed a German counter-attack at Colle il Monte. 56th Division crossed the Marano and captured Mulazzano. 46th Division failed to get across the river to join 1st Armoured and 56th Divisions.

On September 17 the Canadians at San Martino in three strong attacks failed to make any appreciable headway, but 4th Division in a night attack under artificial moonlight took the ridge at Cerasolo. 56th

Division fought all day, but without much success, for Monte Olivo. 46th Division at last succeeded in crossing the Marano and fought for a height at Colle di Monte Lupo, a mile south of Monte Olivo. The Air Force heavily attacked San Fortunato.

On September 18, Canadian 1st Division at last forced the Germans out of San Martino. 4th Division crossed the Ausa to reach Sant' Aquilina. In V Corps sector 56th Division established a small bridge-head across the Ausa at Monte dell' Arboreta where it was held by artillery and mortar fire. 1st Armoured Division was committed but could not attack until the 20th. By this time 56th Division had almost reached the crest of the ridge east of Ceriano and was stubbornly resisting determined counter-attacks. When 1st Armoured Division attempted to advance it came under the devastating fire of the German guns and was checked. On the right, however, the Canadians penetrated the defences of San Fortunato and so forced the Germans to withdraw beyond the Marecchia. Rimini was occupied by Greek 3rd Mtn. Bde. on the 21st. N.Z. 2nd Division then relieved Canadian 1st Division, which went into Corps reserve, and Canadian 5th Armoured Division relieved 4th Division. The Canadians had suffered severely during this September, losing 255 officers and 3,853 O.Rs.

On the left of Eighth Army's sector a peculiar situation had arisen. Indian 4th Division, fighting for the three-peaked ridge of Gemmano, found itself on the border of the little independent republic of San Marino. The Germans had a strong force within its territory and so, on the 20th, the Indian division was obliged to cross the border of this neutral state and to enter its capital, there to be helped by the minute army of the republic to round up the remnants of the occupying force.

The capture of San Fortunato had opened the way into the valley of the Po. The Gothic Line had been pierced; the Germans were withdrawing. It was the intention to pursue them with the three armoured divisions of V and Canadian I Corps—N.Z. 2nd, Canadian 5th and 1st Armoured Divisions—while the rest of Eighth Army was reorganised. The Canadian Corps was to continue to move on the axis Ravenna—Ferrara along Route 16; V Corps towards Bologna along Route 9. But reorganisation was to prove difficult for 1st Armoured and 56th Divisions badly needed rest. 78th Division, then arriving in Italy, could not reach the line for some time. So Indian 10th Division was borrowed from X Corps, being relieved in the mountain sector by 1st Guards Bde. Gp. and 2nd A.A. Bde. (released by U.S. Fifth Army). 9th Armd. Bde. came into Army reserve and the Polish Corps was ordered to be prepared to move at forty-eight hours' notice and Polish 2nd Armd. Bde. was moved into Pesaro. To find replacements or reinforcements for Eighth Army was impossible at this time and it was necessary to reduce

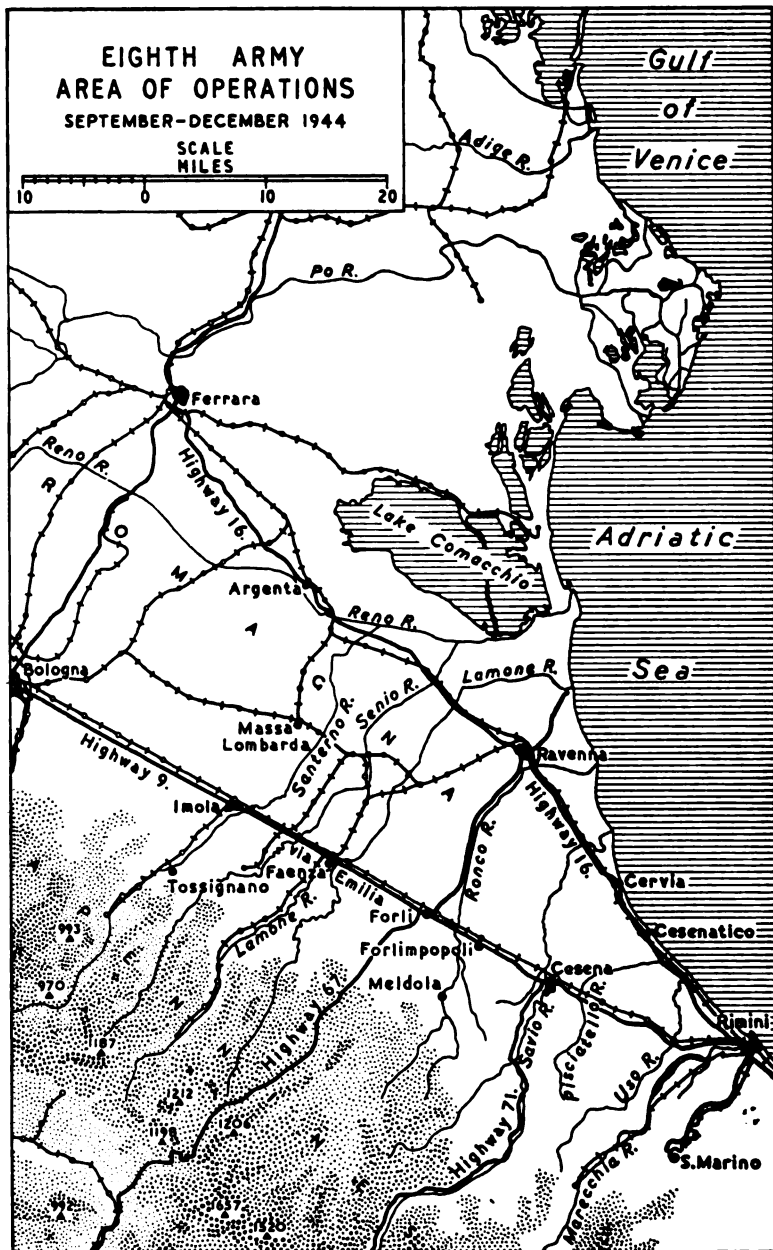


FIG. 89. Eighth Army Area of Operations. September-December 1944.

all British battalions from four to three companies and to reduce to a mere cadre one infantry brigade in both 1st Armoured and 56th Divisions.

On September 22, N.Z. 2nd Division pushed northwards beyond Rimini until checked by strong opposition on the line of the Fontanaccia, four miles north-west of Rimini. 4th Division crossed the Marecchia opposite Santa Justina. On the 23rd, Canadian 5th Armoured Division passed through and closed on the left of the New Zealand Division.

In V Corps sector it was not until the 23rd that 1st Armoured Division was able to move forward to join the infantry divisions that had attacked south of Sant' Arcangelo towards the ridge running south from Poggio Berni to Montebello and had been checked.

On September 25, Canadian 5th Armoured Division secured a small bridgehead across the Uso north of San Vito and 1st Armoured Division also established a bridgehead where Route 9 crosses this river. Then the Poggio Berni-Montebello ridge was cleared and the Germans withdrew to the line of the Fiumicino.

Between September 29 and October 2, rain fell incessantly to bring operations to a halt in the coastal sector. By the 30th the Germans had abandoned Montalbano and had withdrawn beyond the Fiumicino, though in the foothills to the south they still resisted stubbornly west of the river.

On the night of September 30/October 1, V Corps attacked on a broad front, but because of the stubbornness of the opposition and of the foulness of the weather, could make little headway. Neither 46th nor 56th Divisions got across the Fiumicino but Indian 4th Division took Monte Reggiano and Borghi and was then relieved by Indian 10th Division, the advance continuing until San Martino was captured.

On October 1 General Leese, leaving Italy to assume command of A.L.F.S.E.A., handed over command of Eighth Army to General McCreehy from X Corps. General McCreehy moved the Polish Corps from the coast into X Corps' sector, there to attack on the axis of Route 71, which ran northwards along the valley of the Savio to Cesena, and to outflank the Germans opposing the main body of Eighth Army in the plain. But by the time the Polish Corps was in its new positions and ready to strike on October 16, Eighth Army had almost reached the Savio. It was then decided that the Poles should advance on the axis of Route 67 against Forlimpopoli and Forli, this also being the axis of advance of 6th Armoured Division of XIII Corps.

While waiting for the Fiumicino to subside, the Canadians regrouped and Indian 10th Division stormed Monte Farneto while 46th Division, on October 7, captured the ridge running south-west from Montegallo. Then, on the 9th, Indian 10th Division took Monte Spaccato, north of

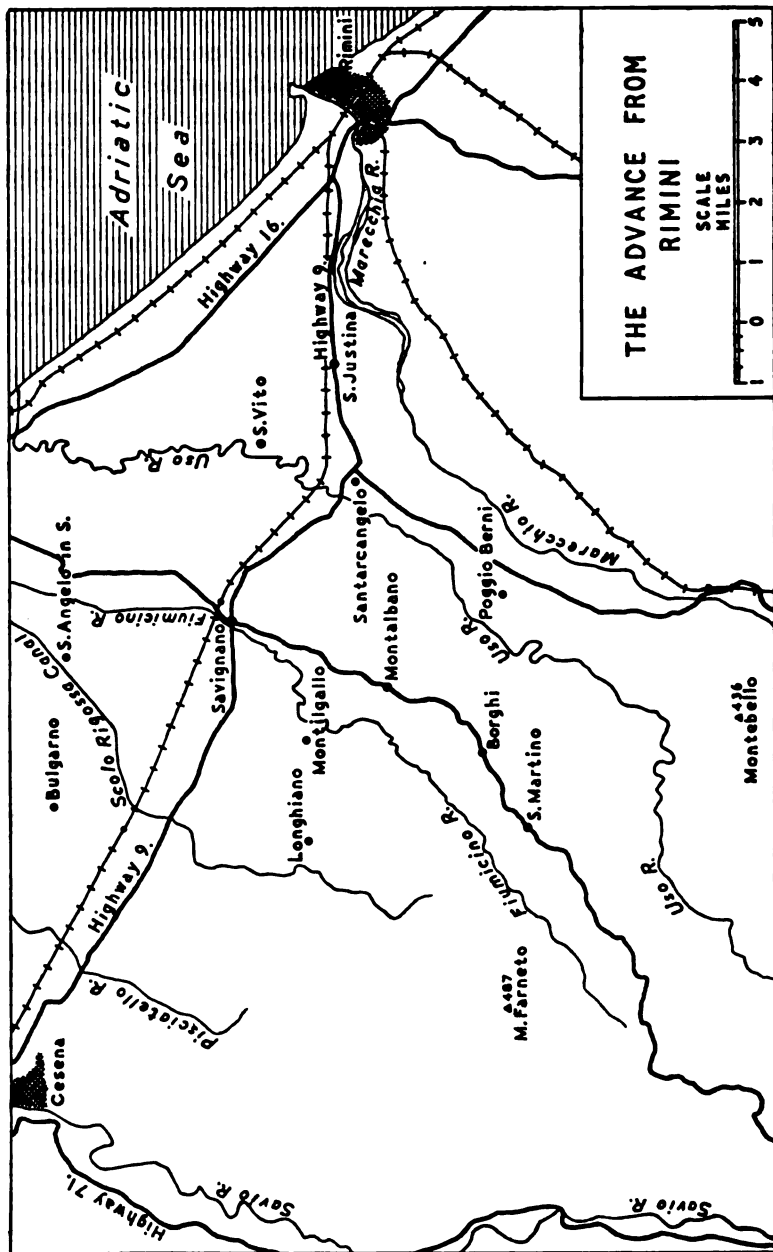


FIG. 90. The Advance from Rimini.

Monte Farneto, and, on the 10th, 46th Division captured Longiano. It was then decided to exploit these successes. Canadian 1st Division extended its front about a thousand yards to the south of Route 9 to relieve 56th Division preparatory to an advance towards Cesena while N.Z. 2nd Division guarded its right flank and Canadian 5th Armoured Division watched the flooded areas nearer the coast.

By October 10 the Germans had begun to withdraw to the line of the Scolo Rigossa Canal. On the 12th the Canadians, following up, made contact with strong German forces on that line, but by the 14th they were in possession of Bulgarno, a thousand yards beyond the canal. On the right of the Canadians, N.Z. 2nd Division was fighting hard for Sant' Angelo in Salute. On their left V Corps, advancing, turned the Scolo Rigossa position and forced the Germans to withdraw to the line of the Pisciatello. Without pause V Corps proceeded to turn this position. By October 20, after a parallel attack by 46th and Indian 10th Divisions, Cesena was entered. At the same time the Canadian Corps crossed the Pisciatello and, with Canadian 1st Division on the left and N.Z. 2nd Division on the right, closed on the line of the Savio. In the coastal sector the Germans disengaged and Cesenatico was entered.

4th Division, relieving 46th Division, crossed the Savio in the southern outskirts of Cesena and secured a bridgehead. Ten miles to the south, near Montefelcino, Indian 10th Division crossed the river, undetected, and swiftly established a bridgehead. The Polish Corps was moving up the secondary road from San Piero in Bagno that joins Route 67 at Rocca San Casciano. On October 23, the Kresowa Division launched an attack upon a strong position on the western wall of the valley of the Rabbi. Meanwhile Indian 10th Division had captured on the 21st two heights at the southern end of the watershed between the valleys of the Savio and the Ronco and had compelled the Germans to withdraw from in front of 4th Division's bridgehead in the outskirts of Cesena. North of Cesena the Canadians had established bridgeheads over the Savio and had passed through and beyond Cervia. Before dawn on the 24th the Germans had disengaged all along the line.

Polish patrols were nearing Predappio Nuova, the birthplace of Mussolini, and V corps, south of Meldola, thrust across the Ronco in four places. Then the rain came and the Ronco rose. The Germans counter-attacked and 4th Division suffered heavily. North and south of Meldola Indian 10th Division established two small bridgeheads, while in the sector immediately north of the railway from Rimini the Canadian Corps moved up to the Ronco and crossed the Bevano near the coast. The continuous rain then caused such widespread flooding that the advance was halted. On October 12 the Canadians were withdrawn, 12th Lancers took over the sector on the Ronco between the railway and Bagnolo and 'Porterforce', consisting of an armoured car regiment, two

armoured regiments, three regiments of artillery and some engineers, assumed control of the right flank from Bagnolo to the coast.

'Porterforce', after a check at San Stefano, moved forward into the plain of the Romagna and closed on the Ronco running alongside Route 67 that leads to Ravenna. To the south of Route 9, Indian 10th Division took Meldola on October 30 and 4th Division crossed the Ronco and closed on the airport of Forli. Then came the rain to wash away the bridges over the Ronco and to make the maintenance of the forward units of V Corps exceedingly difficult. Indian 10th Division at Grisignano on the Predappio Nuova-Forli road was relieved by 46th Division. In late October Greek 3rd Mtn. Bde. left Italy for Greece, as did also Indian 4th Division.

New plans for the resumption of the attack were made on November 7. V Corps would attack with 4th and 46th Divisions between the Ronco and the Rabbi, 4th Division towards Forli and 46th Division from Grisignano across the Montone at San Varano on Route 67, southwest of Forli. As soon as Route 67 had been cleared the Polish Corps would advance on an axis parallel with Route 9.

The weather suddenly improved and the Air Force was able to support the attack. After a hard day's fighting, 4th Division captured most of the airfield near Forli on the night of November 7/8 and 46th Division took San Martino in Strada. Forli was entered by 4th Division on the 9th and 46th Division, crossing the Rabbi, moved forward toward the ford over the Montone at San Varano. Both divisions were checked and the weather broke, to flood the Montone and to immobilise 46th Division south of Route 9. It was not until the 11th that 4th Division was able to storm its way through Fornace, and not until the 13th that it could close on the Montone on a wide front. On the 16th, 46th Division drew level with 4th Division and then again the advance was halted by the mud and the stoutness of the German resistance. Indian 10th Division returned to the line on the right of 4th Division.

In the foothills of the Apennines between the Montone and the Samoggia the Poles, turning northwards to assist 46th Division, likewise encountered stout opposition. Converselle was captured on November 16, lost and taken again. 'Porterforce' in the coastal sector made no appreciable advance till November 9 when the Germans withdrew to the line of the Fiumi Uniti, flooding the countryside by demolishing the flood banks.

On November 18 orders were issued for the completion of the operation. Faenza and the high ground south-west of it were to be captured by V Corps while the Poles seized a succession of heights some four to seven miles to the south of Route 9.

V Corps attacked on November 20. Castiglione was soon taken. 4th Division was checked, but 46th Division and the Polish Corps

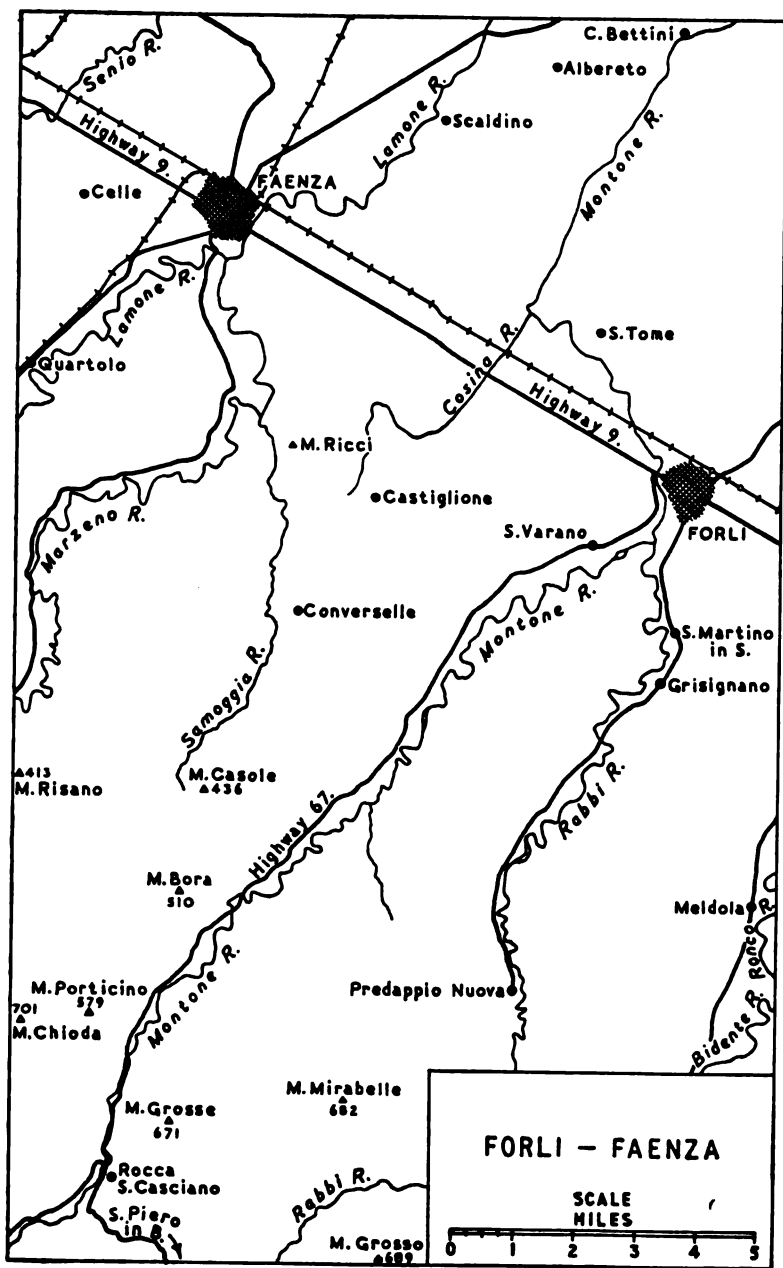


FIG. 91. Forlì-Faenza.

advanced to capture Monte Poggio di Piano on the 21st. By dawn on the 22nd, 4th and 46th Divisions were across the Cosina and the Poles had taken Monte Ricci. Twenty-four hours later the Germans disengaged and 46th Division crossed the Marzeno, the Poles crossed the Lamone and 4th Division, south of Route 9, reached the Lamone. It was not until the 25th, however, that Indian 10th Division could get across the Montone. On November 26 both V and the Polish Corps were on the east bank of the Lamone from Scaldino southwards, but before the bridge across the river at Casa Bettini over Route 9 could be seized the rain again intervened. Indian 10th Division tried to capture this bridge but without success. Then, on the 30th when the weather improved, the attack was resumed and the bridge and Albereto, on the lateral road between Ravenna and Faenza, were taken and the Canadians began to cross the river.

In orders issued on November 27 it was once more emphasised that the primary task of A.A.I. was to ensure that the Germans were given no opportunity to withdraw formations from Italy to reinforce their armies on either the western or eastern fronts. It was stated that the first task of Eighth Army was to give all possible help to U.S. Fifth Army in its purpose of taking Bologna and its second was that of capturing Ravenna, so providing itself with winter quarters. The plan now was that the Canadian Corps should capture Russi, on the lateral road between Ravenna and Faenza, cut Route 16 beyond Ravenna, capture Ravenna and advance westwards towards the Santerno at Massa Lombarda. V Corps with 56th, Indian 10th and N.Z. 2nd Divisions, two armoured brigades and 46th Division in the initial stages, would continue to attack along Route 9, seizing in succession bridgeheads over the Lamone, the Senio and the Santerno. The Polish Corps, south of Route 9, would advance from Brisighella to Riolo del Bagni.

On December 2 the Canadians crossed the Montone by a bridge near Casa Bettini and made good progress. Canadian 1st Division on the left by-passed Russi and reached the Lamone west of the town. Canadian 5th Armoured Division took San Pancrazio, captured Godo, cut Route 16 at Mezzano and captured Ravenna. But Canadian 1st Division, having crossed the Lamone, was heavily counter-attacked and thrown back.

The Polish Corps crossed the Lamone south of Route 9 and captured Montecchio while 46th Division took the nearby village of Pideura. When, on the 10th, 46th Division was being relieved by Indian 10th Division, the Germans counter-attacked in the vicinity of Celle, two miles west of Faenza, but 46th Division held firm. Then Indian 10th and N.Z. 2nd Divisions crossed the Lamone.

On December 11, Canadian 5th Armoured Division reached the Fosso Vecchio Canal and Canadian 1st Division crossed the Lamone

at Le Due Torri, on the Ravenna-Bagnacavallo road and near Bagnacavallo, and closed on the left of the Canadian 5th Armoured Division. On the 12th these two divisions continued their advance and established a bridgehead over the Canale Naviglio north of Bagnacavallo and clung to it in the face of a succession of fierce counter-attacks.

Then, on December 14, N.Z. 2nd and Indian 10th Divisions attacked to secure the ridge from Pergola to Pideura south-west of Faenza while the Poles on their left crossed the Sintria, a tributary of the Senio, to close on the Senio. The fighting was bitter but by nightfall on the 15th the New Zealanders were in Celle. On the 16th, Indian 10th Division secured Pergola and the New Zealanders closed on the Senio. On the 17th the Indians established two small bridgeheads across this river north and south of Tebano. Faenza was cleared on the 16th by Indian 43rd Lorried Infantry. Thereafter there was a pause until the 23rd while the Senio was bridged.

On December 19 the Canadians burst out of their bridgehead over the Canale Naviglio, occupied Bagnacavallo and closed on the Senio along a front extending from a mile south of Alfonsine to a point just north of Cotignola. In V Corps sector 56th Division, crossing the Lamone east of Faenza, made but slow progress for the Germans contested every yard and snow was now falling. The Poles completed the clearance of their front east of the Senio and extended their sector to the west to give relief to XIII Corps, which had been weakened by the despatch of Indian 8th Division to the Serchio valley in the west where, north of Lucca, the Germans had broken through the sector held by U.S. 92nd Division and were threatening to cut the communications between U.S. Fifth Army's forward areas and its base at Leghorn.

On Christmas Day General McCreedy reported to the Army Group Commander that shortage of ammunition must limit the advance of Eighth Army to the line of the Santerno, and by the end of the year it had been decided that the offensive could not be maintained and that a winter line along the Senio would have to be occupied and defended.

Between January 2 and 5, 1945, the Canadian and V Corps drove the Germans from their remaining positions east of the Santerno north of Ravenna and from the area between Cotignola and Granarolo, to the north of Faenza, and thereafter, save for raiding and patrolling, there was little action of any significance until spring.

On December 12 General Maitland Wilson left the Middle East for Washington, there to fill the vacancy caused by the death of Sir John Dill. In his place as Supreme Commander-in-Chief in the Mediterranean theatre, General Alexander was appointed. To the command of 15 Army Group General Clark from U.S. Fifth Army was appointed. H.Q. A.A.I. was disbanded. On January 2, 1945, H.Q. 15 Army Group moved from Siena to the vicinity of Florence. The spirit of the Polish

Corps had been sadly bruised by the news that at the Yalta conference it had been decided that after the War Poland was to be divided along the Curzon Line.

U.S. FIFTH ARMY

U.S. Fifth Army, with XIII Corps under command, was prepared to attack at twenty-four hours' notice five days after the opening of Eighth Army's assault upon the Gothic Line, its main effort to be made by U.S. II and XIII Corps on an eight mile front between Florence and Pontassieve with the initial purpose of securing the mountains some six to eight miles north and north-east of Florence and thus opening the approach to the valley of the Sieve and to the Gothic Line. Thereafter U.S. II Corps was to attack on the axis of Route 65, the road from Florence through the Futa Pass to Bologna, and XIII Corps to the eastward on the road from San Piero (on Route 65) through Il Giogo Pass and Firenzuola to Imola. U.S. IV Corps in the line between Florence and the Tyrrhenian coast would hold the attention of the Germans and advance as opportunity presented itself.

Late in August it became evident that the Germans were withdrawing from the line of the Arno east of Florence and so, on September 2, U.S. IV Corps, with S.A. 6th Armoured Division under command, crossed the river and advanced from two to seven miles on a broad front. East of Florence 1st Division of XIII Corps also followed up this withdrawal until it became obvious that the Germans in this sector were standing on Monte Acuto, Monte Morello and Monte Senario, which dominated the road out of Florence to the north. On the right of 1st Division, Indian 8th Division advanced to the north of Pontassieve and 6th Armoured Division opened Route 70, which ran from Florence through Pontassieve to the east, and probed the German positions in the valley of the Sieve.

In U.S. II Corps' sector west of Florence U.S. 88th Division crossed the Arno and maintained contact with the Germans as they withdrew into the main defences of the Gothic Line. Plans were made for an assault by all three corps. The strongest part of the Gothic Line in this area was that facing U.S. II Corps and 1st Division of XIII Corps. It lay between the roads running north and north-east from Prato and Borgo San Lorenzo and narrowed as Il Giogo Pass was approached. The defensive position here was immensely strong. A series of mountain peaks rising to a height of three thousand feet ranged from west to east and their southern slopes were serrated into great ridges and ravines.

By September 12, U.S. 91st Division had reached the approaches to Monti Celli and Monte Altuzzo on either side of Il Giogo Pass and was then checked. East of the road to Firenzuola U.S. 85th Division attacked Monte Altuzzo but after two days of hard fighting these two divisions

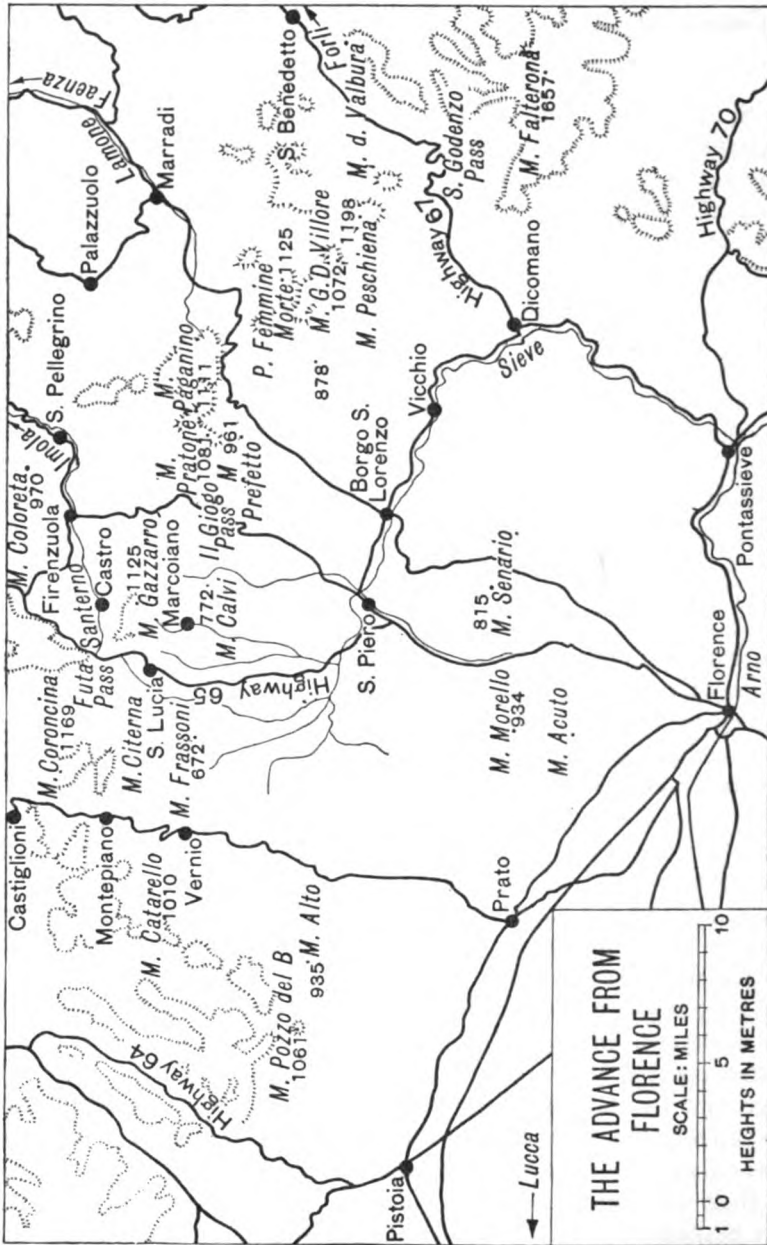


Fig. 93. The Advance from Florence.

had gained very little ground. On the night of the 16th, however, when the attack was resumed on Monte Altuzzo, it was completely successful and by the morning of the 18th all opposition on U.S. 85th Division's front had collapsed. Monte Verruca and Monte Pratone were captured and the Germans driven from all the heights east of Il Giogo Pass. Monti Celli was captured on the 17th and on the 18th all the heights west of the pass were in American hands. Firenzuola was entered on the 21st and by the following day the Americans were two miles north of Monte Coloreta and across the Santerno at the village of San Pelegrino. West of the Firenzuola road U.S. 91st Division reached the Santerno between Firenzuola and Castro San Martino and so had outflanked the defences of Futa Pass. These, being assaulted, were then overcome.

Meanwhile U.S. 34th Division had attacked the Gothic Line between Route 65 and the road to the north from Prato, its main objective being the great mass of Monte Coroncina. Torricella was taken on the 21st and two days later the division was within two miles of its objective.

On the left of XIII Corps' sector, 1st Division attacked along the Borgo San Lorenzo–Marradi–Faenza road; in the centre Indian 8th Division advanced over the mountains north of Vicchio on the Borgo S. Lorenzo–Dicomano road and on the right 6th Armoured Division maintained contact with Eighth Army on its right. By nightfall on September 12, 3rd Bde. of 1st Division was some four miles north-east of Borgo S. Lorenzo and Ind. 21st Bde. of Indian 8th Division north-east of Vicchio. Behind them 66th Bde. and 1st Division's artillery crossed the Sieve. 3rd Bde. fought hard for Monte Giuvigiana until relieved by 2nd Bde. on the 18th. Then, following the capture of Monte Pratone by the Americans, the Germans withdrew and 2nd and 66th Bdes. advanced to cross the Lamone and to move north-eastwards over the mountains on either side of the gorge through which the Lamone flows. Indian 8th Division's objective was the four thousand feet Punta Femmine Morte. Its 21st Bde. stormed the foothills in front of the mountain on September 13. On the 18th, Ind. 17th Bde. attacked and captured the mountain while Ind. 19th Bde. on its right reached Monte Giogo di Villore. On September 20 the Germans disengaged and Indian 8th Division moved forward over rough and difficult country north-eastwards. 6th Armoured Division, advancing from Dicomano, found the country so difficult that only 1st Guards Bde. could move at all easily, its patrols reaching the San Godenzo Pass on the 14th to find the road there completely demolished. On the 18th the pass was captured and the Germans withdrew from the high ground south and east of it.

On the right of U.S. IV Corps, S.A. 6th Armoured Division stormed the line of mountains about eight miles north of Prato, taking Monte

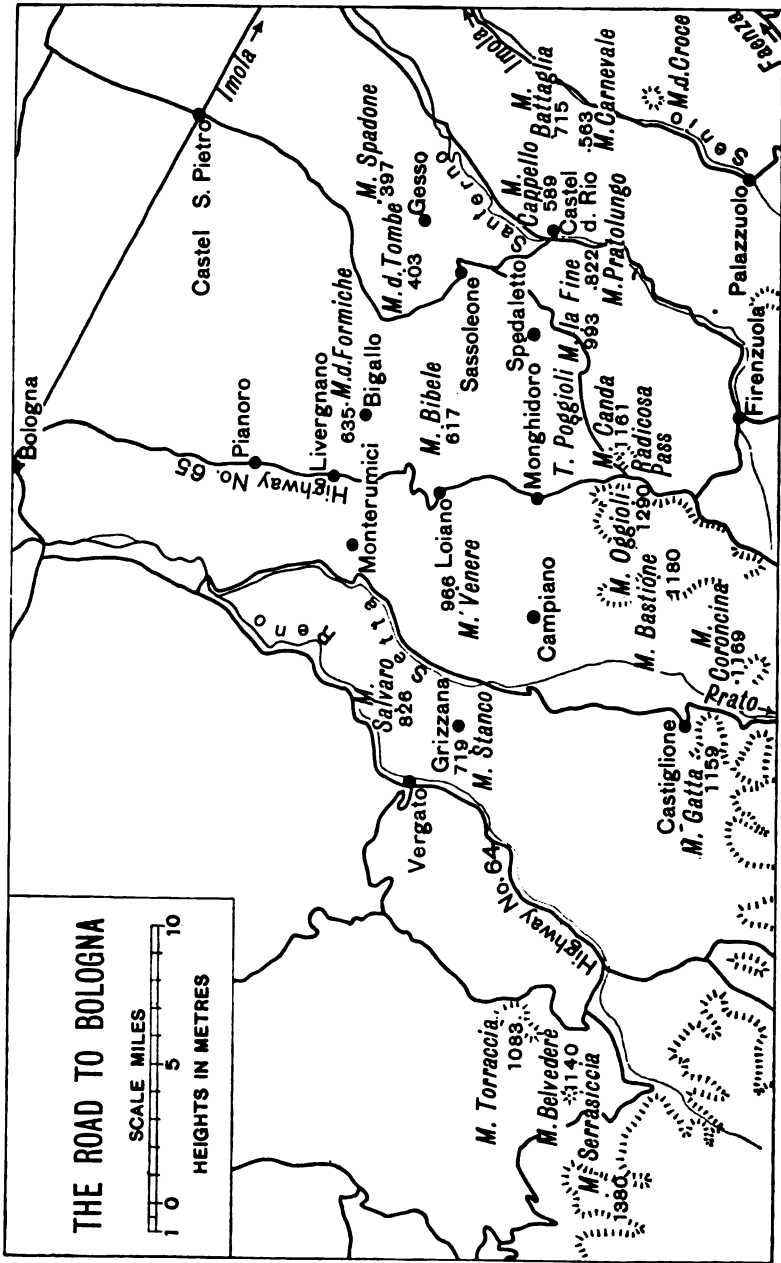


FIG. 94. The Road to Bologna.

Alto on the 16th and Monte Porro del Bagno. In the valley of the Serchio U.S. 1st Armoured Division attacked the heights on both sides of the river on September 17 and advanced two miles to the gorge of the Serchio north-west of Ponte a Moriano, Castelvecchio and Monte Lignana being reached. On the Tyrrhenian coast Task Force 45 occupied Viareggio on the 15th and advanced some eight miles to Forte dei Marmi and the mountains above Pietrasanta. A combat team of the Brazilian Expeditionary Force came into line on the right and moved forward in association with the Task Force until checked in front of Monte Prano.

It was then decided that U.S. Fifth Army should advance not on Bologna but on Imola in order to facilitate the forward movement by Eighth Army, while U.S. II Corps continued to attack towards the Radicosa Pass, through which Route 65 passed on its way to Bologna. U.S. 88th Division moved along the valley of the Santerno to reach Monte della Croce on the 23rd. By the 27th, after hard fighting, the division gained possession of Monte Pratolungo, Monte Carnevale and Monte Battaglia, the last major obstacles on the road to Imola. The Germans promptly counter-attacked and for four days there was very bitter fighting for the possession of these heights, but by the 30th the capture of Monte Capello by U.S. 351st Infantry and the advance of 1st Division on the right had made the American grip on them secure. The arrival of German reinforcements now closed the road to Imola and so the offensive was switched to the main road leading to Radicosa Pass on Route 65.

XIII Corps had been fighting on the mountain road from Marradi to Palazzuolo to assist the major action on its left. Its task now became that of opening the road to Palazzuolo, which was occupied by 66th Bde. of 1st Division on September 25 and 2nd Bde. made contact with the Americans on Monte Battaglia. On the right of 1st Division, Indian 8th Division had been clearing the small road from San Benedetto on Route 67 to Marradi which was dominated by Monte Castelnuovo. The terrain was exceedingly difficult and the fighting inconclusive, but when the Germans withdrew from Monte Castelnuovo at the end of the month the road was opened.

6th Armoured Division, unable to use its tanks in such mountainous country, had made but little progress. It entered San Benedetto on Route 67 on September 25 and to aid the weak X Corps was patrolling the left flank of this formation on Route 70 while its 61st Bde. was guarding the area south-east of Route 67.

U.S. II Corps in its advance towards the Radicosa Pass was confronted by three mountains about four thousand feet high—Monte Canda, Monte Oggioli and Monte Bastione. These were captured by September 28.

U.S. IV Corps continued to move forward as the Germans withdrew. Task Force 92 passed through the Gothic Line in the valley of the Serchio and cut Route 12 at Lucchio. S.A. 6th Armoured Division, protecting U.S. II Corps' flank, advanced along the road running north from Prato as far as Monte Gatta, south-west of Castiglione, while 24th Guards Bde. and 12th Motorised Bde., following the retreating Germans along Routes 66 and 64, reached Piastre, seven miles north-west of Pistoia. The Guards then moved to the right flank to support the attack from Prato and by the 30th were abreast of the foremost troops of U.S. 34th Division. The Brazilians reached Fornoli and Stazzema on the 30th.

The attack had gone well. U.S. II Corps had crossed the watershed of the Apennines and looked down on Bologna, no more than twenty-four miles away. But in front of it strong German reinforcements were gathering, their movement to this sector being made possible by the slow progress of Eighth Army on its right and of U.S. IV Corps on its left. The weather was deteriorating and the rugged country in front of Bologna provided the Germans with a succession of defensive lines—through Monghidoro, Loiano, Livergnano and Pianoro—the attack on every one of which would demand a set battle.

On October 1 the attack on the Monghidoro position was launched by U.S. 91st, 85th, 88th and 34th Divisions and after four days of fighting the Germans were driven back to their Loiano position. During the next four days the Americans drove the Germans back to the Livergnano position and then, from October 10 to 15, they broke through this and got to within ten miles of Bologna. But the Germans were still reinforcing their defence while U.S. Fifth Army was unable to strengthen its attack. The advance was slowing down, the troops were nearing exhaustion and the supplies of ammunition were running short. It became apparent that unless a decision was quickly reached the inevitable result would be stalemate. So on October 13 orders were issued for a final effort. By October 16, U.S. II Corps was ready, but the attack was not unleashed for suddenly the Germans broke through the sector held by U.S. 92nd Division in the valley of the Serchio, north of Lucca, and threatened to cut U.S. Fifth Army communications with its base at Leghorn.

The attack on Bologna was therefore postponed until January initially and then, because of the serious shortage of ammunition, until the spring.

In February and early March the newly arrived U.S. 10th Mountain Division captured the ridge from Monte Serrasiccia to Campiano and the heights of Monte Belvedere and Monte Torraccia and advanced some five or six miles to bring the right flank of U.S. IV Corps abreast of the left flank of U.S. II Corps.

EIGHTH ARMY. OPERATION 'OLIVE'

GENERAL MEDICAL ADMINISTRATIVE PLAN

There were two main lines of communication and the medical evacuation scheme was largely determined by this fact.

Western L. of C.

Railhead at Arezzo . Foligno-Perugia-Arezzo-Bibbiena

Eastern L. of C.

Railheads at Assisi

and Ortona . . . (a) Foligno-Fabriano-Falconara Route 16
(b) Ortona-Ancona-Falconara Route 16

X Corps was maintained on the Western L. of C.; XIII Corps (though under command of U.S. Fifth Army) was also maintained on this Western L. of C. and XIII Corps casualties were evacuated by Western L. of C. arrangements.

V Corps, Canadian I Corps and Polish II Corps were maintained on the Eastern L. of C.

There was one port, Ancona, and hospital ships were called forward as required from Bari.

Forward landing grounds were available at:

Malignano and Castiglione del Lago . Western L. of C.
Falconara Eastern L. of C.

MEDICAL APPRECIATION

(1) Strength of Formations.

Polish II Corps	61,500
Canadian I Corps	53,500
V Corps	117,000
X Corps	38,500
Army Tps. & N.Z. 2nd Division	40,000
District & Area Tps.	100,000
	<hr/>
	410,500
	<hr/>

(2) Availability of beds in general hospitals and C.C.Ss. in Army Area.

One 1,200 general hospital (Canadian)	1,200
Eight 600 general hospitals	4,800
Four 200 general hospitals (including one Polish general hospital)	800
Four Army C.C.Ss. (held in reserve)	1,200
Add estimated number of minor sick who could be held in corps and divisional medical units	4,000
	<hr/>
	12,000
	<hr/>

(3) Estimated Daily Casualties.

- (a) Sick at the rate of 2.5/1000/day or 1,025 per day.
 (b) Battle Casualties at the rate of 400 a day for first three days and at the rate of 1,000 a day from D-day+2 to D-day+10.

	<i>Total Casualties</i>	<i>Sick</i>	<i>Battle Casualties</i>
D-day to D-day+2	3,075	1,200	1,200
D-day+2 to D-day+10	7,175	7,000	7,000
	10,250	8,200	8,200
		} 18,450	

(4) Relation of Casualties to Available Beds.

Total Casualties during first ten days	18,450
Total beds available	12,000
	6,450

Total number to be evacuated from Army Area say 6,500
 Number to be evacuated each day 650

Potential evacuation channels available.

By air	400 per day
„ ambulance train	200 „ „
„ hospital carrier	300 „ „
	900 per day

MEDICAL TACTICAL PLAN

(a) Polish II Corps had a limited objective, Pesaro. 161 and 162 Pol.G.Hs. were open in Ancona. An easy evacuation route was available. 29 M.A.C. and one section 683 Coy. R.A.S.C. (M.A.C.) were under command. This corps was therefore self-contained.

(b) At the start of Operation 'Olive' Canadian I Corps would evacuate all its casualties to 1 Cdn.G.H. at Iesi, ten miles behind Rear H.Q. Canadian I Corps. 1 Cdn. M.A.C. was available. This corps was also self-contained. As the battle moved forward an additional platoon of 567 (A.F.S.) A.C.C. would be allotted to help clear casualties from the rearmost Canadian C.C.S. to Iesi.

(c) V Corps casualties would have to pass through Fabriano where 18 C.C.S. with 23 F.S.U. was established. The reasons for this were that in V Corps sector there were no lateral roads to the coast and that the Fabriano-Iesi road was unsuitable owing to the volume of traffic. From Fabriano evacuation would be *via* Tolentino and Macerata to 11 B.G.H. at Porto Recanati or 71 B.G.H. at Loreto. 151 Lt. Fd. Amb. with 5 F.S.U. would establish a staging post at Tolentino.

As soon as the lateral road Fano-Urbino became available 14 C.C.S. with 5 and 23 F.S.U.s. attached would open in Fano and all V Corps

casualties would then pass through 14 C.C.S. Because of the difficulties that were associated with evacuation from V Corps sector, eight F.S.U.s. and five F.T.U.s. would be allotted to this corps.

(d) X Corps casualties would be evacuated to hospitals in the Arezzo or Perugia-Assisi area.

(e) Three convalescent depots would be available, 8 at Castiglione, 9 at Bastia and 2 (S.A.) at Macerata.

EVACUATION FROM FORWARD TO REAR AREAS

Polish II Corps

3 (Pol.) C.C.S. with 7 F.S.U. attached near Chiaravalle.

5 (Pol.) C.C.S. with 45 and 47 (Pol.) F.S.U.s. attached at Falconara.

From these C.C.Ss. evacuation would be along the coast road through Senigallia to Ancona.

Priority I and II cases would be sent to the C.C.Ss. and to 2 and 6 (Pol.) Fd. Amb. with 46 and 48 (Pol.) F.S.U.s. attached; all others to 161 and 162 Pol.G.Hs. in Ancona.

Canadian I Corps

16 (Cdn.) F.D.S. and 4 (Cdn.) C.C.S. near Mondaino.

1 and 4 (Cdn.) F.S.U.s., 1 and 3 (Cdn.) F.T.U.s. attached to 4 (Cdn.) C.C.S.

2 and 3 (Cdn.) F.S.U.s., 2 (Cdn.) F.T.U. and 1 (Cdn.) Research Lab. attached to 16 (Cdn.) F.D.S.

From these evacuation would be to 1 Cdn.G.H. at Iesi. 5 (Cdn.) C.C.S. would be closed and in reserve in Iesi.

V Corps

'F' F.D.S. with 21 and 32 F.S.U.s. and 25 F.T.U. attached at Cagli.

9 (Ind.) C.C.S. with 3 (Ind.) Mob. Surg. Unit, 31 F.S.U. and 3 F.T.U. attached at Scheggia.

5 C.C.S. with 1 and 36 F.S.U.s. and 34 F.T.U. attached at Sassoferrato.

'G' F.D.S. with 10 and 25 F.S.U.s. and 26 F.T.U. attached (closed) at Sassoferrato.

1 C.C.S. (closed) at Fabriano.

5 Lt. Fd. Amb. holding minor sick, venereal and exhaustion cases at Fabriano.

Evacuation from forward areas *via* 18 C.C.S. (Army) in the vicinity of Fabriano.

It was intended that Indian 4th Division casualties should be evacuated direct from 9 (Ind.) C.C.S. at Scheggia to 54 B.G.H. in Perugia. But the road was impassable owing to demolitions and so in the event Indian casualties were routed *via* 5 C.C.S. at Sassoferrato to 18 C.C.S. at Fabriano and thence to 54 B.G.H. in Perugia. An Indian wing was attached to this hospital.

46th Division casualties would be evacuated *via* 18 C.C.S. either by the northern route—Iesi to Falconara where 15 C.C.S. would stage cases for air evacuation—or by the southern route—Castelraimondo—Tolentino—Recanati—to 71 B.G.H. at Loreto and 11 B.G.H. at Porto Recanati.

Specialist Cases. At 71 B.G.H. in Loreto a specialist surgical centre would be formed. The detachment of 1 Max-Fac. Surg. Unit, the detachment of 4 Mob. Neurosurg. Unit and the Ophthalmic Section of 50 B.G.H. would be allotted 200 beds and arrangements would be made whereby their patients could be evacuated by air to Barletta where the H.Qs. of these units were located. Similar arrangements would be made on the western evacuation route where another specialist group was associated with 58 B.G.H. in the medical area R.3801, near Lake Trasimene.

Venereal Cases. Lt. Sec. 12 C.C.S. would still continue to deal with venereal cases. Its heavy section with 2 Mob. Bact. Lab. would remain in the medical area near Lake Trasimene to deal with cases from X and XIII Corps; its light section would move to Osimo, near Ancona, to deal with the rest of Eighth Army cases; its laboratory work would be undertaken by 71 B.G.H. at Loreto and to it would be attached 18 I.S.S. to deal with Indian cases.

Exhaustion Cases. Exhaustion cases would be evacuated from corps exhaustion centres to 7 Base Psychiatric Wing at 5 B.G.H. at Assisi.

Air Evacuation. Since there were no Canadian base hospitals on the eastern side of Italy arrangements would be made whereby aircraft could be called forward from Naples for Canadian casualties. All others evacuated by air from Polish II, V and X Corps would go to Bari. Two sections 151 Lt. Fd. Amb. would establish an air evacuation centre at the Falconara airfield and 15 C.C.S., with a platoon of 567 A.F.S. attached, would be available there to hold cases overnight.

Transfusion. The requirements of whole blood were estimated at 400 pints per day. These, together with plasma and glucose-saline would be flown up daily from Bari to Falconara airfield. The aircraft would then proceed to take transfusion fluids to Castiglione del Lago and to Malignano for X and XIII Corps respectively. 4 F.T.U. would function as the advanced blood bank at Falconara and supply the Canadian and Polish Corps and the hospitals in Ancona. 9 F.T.U. would be with the forward V Corps C.C.S., collect its supplies from Falconara and feed the F.T.U.s. in V Corps area. 4 and 9 F.T.U.s. would be allotted extra vehicles.

EIGHTH ARMY MEDICAL ARRANGEMENTS

OPERATION 'OLIVE'. EIGHTH ARMY MEDICAL ORDER OF BATTLE

	<i>Eighth Army</i>	<i>Polish II Corps</i>	<i>Canadian I Corps</i>	<i>V Corps</i>	<i>X Corps</i>
C.C.Ss.	2 (in support XIII Corps), 12, 14, 15, 18, 19 1 (N.Z.) in reserve	3 (Pol.) 5 "	4 (Cdn.) 5 "	1, 5, 9 (Ind.)	2 (Ind.)
F.D.Ss.	53	—	3 (Cdn.) 13 "	57, 58	865, 866
F.S.Us.	5, 23, 1 (N.Z.) in reserve.	45, 46, 47, 48 (Pol.), 7	1, 2, 3, 4 (Cdn.)	1, 10, 21, 25, 26, 31, 32, 1 (Ind.) Mob. Surg. Unit	29, 30, 36
F.T.Us.	4 (Bl. Bk.) 9 " " " " " " 2 (N.Z.) in reserve	49 (Pol.) 50 "	1 (Cdn.) 2 " 3 "	3, 15, 25, 26, 34	10, 12
Fd.					
Ambs.	151 Lt.	32 (Pol.)			
Adv.					
Depots					
Med.					
Stores	7	344 (Pol.)	1 (Cdn.)	—	—
Labs.	1, 2 Mob. Bact. Labs. 3 Mob. Hyg. Lab. 8, 9 Mal. Fd. Labs.	Pol. Mob. Bact. Lab.	1 (Cdn.) Mob. Bact. Lab. 1 (Cdn.) Med. Research Lab.	—	—
Fd. Hyg.					
Secs.	11, 19	32 (Pol.)	5 (Cdn.)	8	52
Specialist Units	18, 39 I.S.Ss. 8 Con. Depot 'Y' V.D.T.T. 'Z' V.D.T.T. 7 (Ind.) V.D.T.T. 102 (N.Z.) V.D.T.C. in reserve	—	one sec. Cdn. Con. Depot Cdn. N.P. team. Cdn. V.D.T.T.	11 Corps P.T.	12 Corps P.T.

Fig. 96 shows the distribution of Medical Units on August 25, 1944 and Fig. 97 on September 30, 1944.

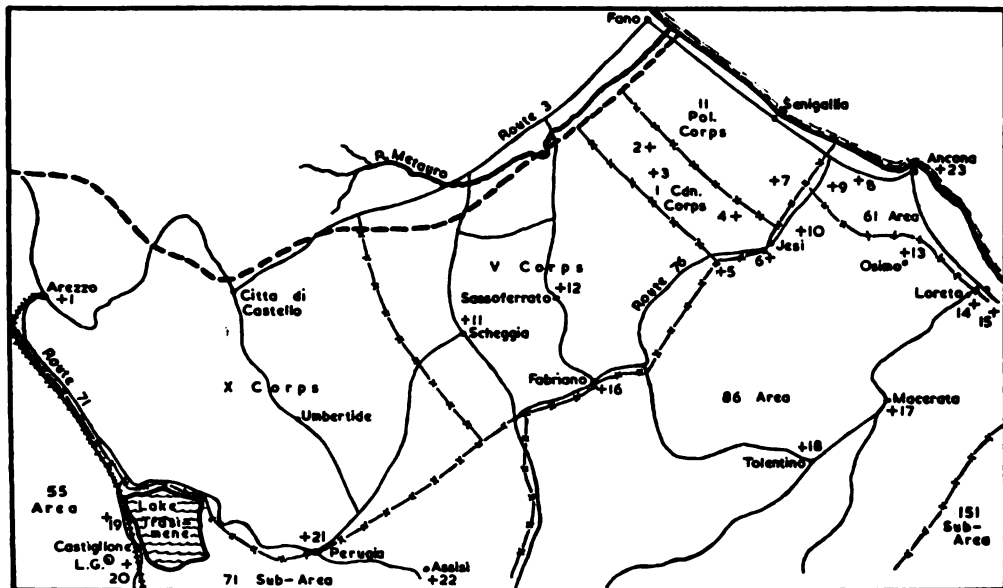


FIG. 96. Eighth Army Medical Units. August 25, 1944.

- | | |
|---------------------------------|--------------------------------|
| 1. 31 B.G.H., 18 I.G.H. | 14. 71 B.G.H. |
| 2. 16 (Cdn.) F.D.S. | 15. 11 B.G.H. |
| 3. 4 (Cdn.) C.C.S. | 16. 18 C.C.S. |
| 4. 1 (Cdn.) Con. Depot | 9 F.T.U., 11 C.P.T. |
| 3 (Cdn.) F.D.S. Lt. Sec. | 5 Lt. Fd. Amb. |
| 5. 5 (Cdn.) C.C.S. | 7 Adv. Depot Med. Stores |
| 3 (Cdn.) F.D.S. | 17. 1 C.C.S. |
| 6. 1 Cdn.G.H. | 18. 151 Lt. Fd. Amb. |
| 7. 3 (Pol.) C.C.S. | 19. 58 B.G.H., 4 M.F.S.U. |
| 8. 5 (Pol.) C.C.S. | 5 M.N.S.U., 12 C.C.S. Hy. Sec. |
| 9. 15 C.C.S. | 8 Con. Depot |
| 151 Lt. Fd. Amb. Sec. | 3 Adv. Depot Med. Stores |
| 10. 53 F.D.S. | 20. 151 Lt. Fd. Amb. Sec. |
| 11. 9 (Ind.) C.C.S., 'F' F.D.S. | 21. 54 B.G.H., 14 Cdn.G.H. |
| 12. 5 C.C.S., 'G' F.D.S. | 7 Ind. Depot Med. Stores |
| 13. 14 C.C.S. | 22. 5 B.G.H. |
| 19 C.C.S. | 23. 161 & 162 Pol.G.Hs. |
| 12 C.C.S. Lt. Sec. | 1 M.F.S.U., 4 M.N.S.U. |
| 18 I.S.S. | 3 Mob. Ophthal. Unit. |

The first five days during which there were some 900 wounded, yielded a general advance of about eight miles. By September 2 the Polish Corps, having taken Pesaro, was withdrawn into reserve.

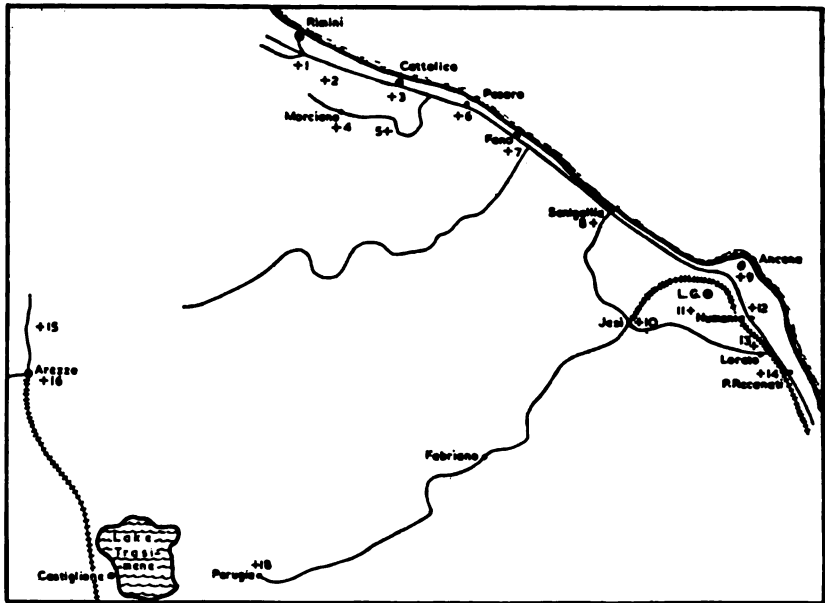


FIG. 97. Eighth Army Medical Units. September 30, 1944.

- | | |
|-------------------------|------------------------|
| 1. 83 B.G.H. | 8. 1 N.Z.G.H. |
| 1 C.C.S. | 1 Greek G.H. |
| 53 F.D.S. | 9. 161 Pol.G.H. |
| 2. 3 Cdn.G.H. | 10. 1 Cdn.G.H. |
| 4 (Cdn.) C.C.S. | 11. 15 C.C.S. |
| 1 (N.Z.) C.C.S. | 12. 31 C.G.H. |
| 3. 5 (Cdn.) C.C.S. | 13. 71 B.G.H. |
| 6 Lt. Fd. Amb. | 14. 11 B.G.H. |
| 4. 18 C.C.S. | 15. 866 F.D.S. |
| 9 (Ind.) C.C.S. | 16. 31 B.G.H. |
| 5. 5 C.C.S. | 18 I.G.H. |
| 6. 12 C.C.S. Lt. Sec. | 17. 12 C.C.S. Hy. Sec. |
| 7. 14 C.C.S., 18 I.S.S. | 18. 54 B.G.H. |
| 151 Lt. Fd. Amb. | 14 Cdn.G.H. |

Evacuation Routes :

V Corps. To 1 and 5 C.C.Ss. X Corps to Arezzo.

Canadian Corps to 5 (Cdn.) C.C.S.

Army. Rearwards of 5 C.C.S. and Cattolica *via* Senigallia to Iesi and Perugia or to Ancona and beyond.

The opposition began to stiffen and casualties now mounted to about 600 a day, two-thirds of which came from V Corps.

On September 8, 4th Division and Greek 3rd Mountain Bde. came u/c Canadian I Corps. By September 14, V Corps had taken the Coriano ridge. Casualties were now some 700-800 daily and on Septem-

ber 13, 1,000 wounded were admitted. By the end of September the line ran almost due north and south with Eighth Army attacking towards the west. Battle casualties (wounded only) for the period August 25–September 30 were :

V Corps	7,093
X Corps	322
Canadian I Corps . .	5,682
Polish II Corps . . .	323
Others	181
	<hr/>
	13,601

The evacuation scheme as planned was followed until the end of August. By September 1 the Fano–Urbino lateral road had become available and so 14 C.C.S. with its F.S.U.s., F.T.U. and 18 I.S.S. moved to Fano and 31 C.G.H. to Numana, a small port about twelve miles south of Ancona. To Fano also went 19 C.C.S., 151 Lt. Fd. Amb. and two additional F.S.U.s. to form a medical area capable of staging a large number of casualties and of dealing with large numbers of Priority III cases.

When Rimini fell it became possible to move more medical units forward. 1 C.C.S. moved into the Ospedale Bolognese on September 25 and two days later was joined by 83 B.G.H. and the specialist surgical group.

Eighth Army was responsible for evacuation from the Corps C.C.Ss. to 1 District hospitals in Iesi, Ancona, Loreto and Porto Recanati. As many as 170 ambulance cars were engaged in this work. In addition 60 other cars were employed in the evacuation of Canadian casualties from Iesi to Perugia. Since British, Canadian, New Zealand, Polish, Greek, Indian and Basuto casualties had to be transported to their own particular hospitals, this evacuation was inevitably associated with much difficulty and not a few complications.

The length of the evacuation chain never exceeded eighty miles; nevertheless evacuation tended to be slow. The terrain was exceedingly difficult, the roads poor and narrow and the weather abominable. The roads were all tributaries of Route 16 (Ancona–Rimini) on which the traffic was continuous. In spite of the considerate collaboration on the part of the C.M.P. ambulance cars on reaching Route 16 usually endured considerable delay.

Thus it became important to open as many units as possible as far forward as possible. By the end of September the following units were either open or else about to open :

THE ARMY MEDICAL SERVICES

Rimini and Riccione

54 B.G.H.	. . . . .	300 beds
83 B.G.H.	. . . . .	300
1 C.C.S.	. . . . .	300
53 F.D.S.	. . . . .	150

Pesaro

12 C.C.S.	. . . . .	200
8 Con. Depot	. . . . .	900

Fano

59 B.G.H. (u/c) 1 District	. . . . .	300
19 C.C.S.	. . . . .	300
151 Lt. Fd. Amb.	. . . . .	200

2,950

Appendix XIX gives the location of the General Hospitals of the A.A.I. exclusive of U.S. Units as at September 30, 1944.

This redistribution of Eighth Army medical units, coupled with the assumption by 1 District of all responsibility for evacuation south of Fano (except to 1 Cdn.G.H. at Iesi), greatly relieved the strain that had been endured by the M.A.Cs. Moreover battle casualties became fewer and the sick rate did not rise.

In general the system adopted was for each corps to have a F.D.S. well forward to deal with Priority I and II cases. To this F.D.S. three F.S.U.s. and one F.T.U. were usually attached. In close support one of the corps C.C.Ss. was usually opened to deal with Priority III cases. This arrangement brought a large surgical potential well forward and distributed the work equitably among a large number of surgical teams. All 'specialist' cases were sent direct to 83 B.G.H. In general, D.Ds.M.S. corps were responsible for evacuation back to their rearmost C.C.S. where Army took over.

For the greater part of the period October–December 1944 there were some 2,700 British beds available in Eighth Army area together with 300 Canadian and 200 Polish beds.

<i>Unit</i>	<i>No. of Beds</i>	<i>Location</i>	<i>Function</i>
54 B.G.H.	300	Riccione area	medical cases infectious diseases
83 B.G.H.	200	„ „	specialist surgery
15 C.C.S.	170	„ „	triage of all sur- gical cases
18 C.C.S.	150	„ „	general surgery
151 Lt. Fd. Amb. (14 V.D.T.T. attached)	120	„ „	V.D. and minor sick
53 F.D.S.	100	„ „	minor sick

Unit	No. of Beds	Location	Function
59 B.G.H. (18 I.S.S. attached)	450	Pesano-Fano area	general
19 C.C.S.	150	"	"
12 C.C.S.	180	"	"
8 Con. Depot	400	"	"
3 Cdn.G.H.	300	Cattolica	"
162 Pol.G.H.	200	Riccione	"

There were in addition the C.C.Ss. u/c Corps.

It was possible to hold cases with an expected duration of stay of twenty-one days. At Riccione all surgical cases were taken to 15 C.C.S. where they were sorted and from which they were distributed. Medical cases were taken to 54 B.G.H. and dealt with in similar fashion. To 83 B.G.H. was attached the specialist surgical trinity, the detachments of 1 Max. Fac. Surg. Unit, 4 Mob. Neurosurg. Unit and the Ophthal. Sec. of 50 B.G.H. The nursing of these specialist cases imposed a considerable strain on the parent 200 bed hospital; indeed almost all these beds were used for these cases.

While Eighth Army paused during the early months of 1945 along the line of the Senio, apart from the local advance of Canadian I Corps to the south shore of the Valli di Comacchio in January and the capture of Tre de Primaro by the Italian Cremona Combat Group, there was no major action. Casualties were light, averaging about thirty a day, and so evacuation presented no unusual problem. 567 (A.F.S.) A.C.C. with its 120 cars was withdrawn in February. Air evacuation was on a small scale and for specialist cases only. From the Rimini L.G. 838 patients were evacuated during January-March.

Cases with an expected duration of stay up to thirty days were held in the forward units. 66 B.G.H. opened in the Riccione area and to it the specialist 'trinity' was attached.

When Canadian I Corps left Eighth Army in mid-February 1945, Canadian patients were transferred to British medical units. Since there was no suitable staging unit for Indian casualties in front of 31 C.G.H. at Numana, 15 C.C.S. at Riccione and, when this left Eighth Army, 18 C.C.S. at Cattolica were reserved exclusively for Indian cases. To each of these C.C.Ss. in turn was attached 39 I.S.S. to provide interpreters and cooks.

The Cremona Combat Group came under command Canadian I Corps in January 1945 and the Friuli Combat Group under V Corps in February. Each consisted of some 9,000 men and each was provided with two field hospitals of 50 beds and a medical section which incorporated stretcher bearer and field hygiene sub-sections. The Consulting Surgeon prepared a *vade mecum* for the medical officers and this

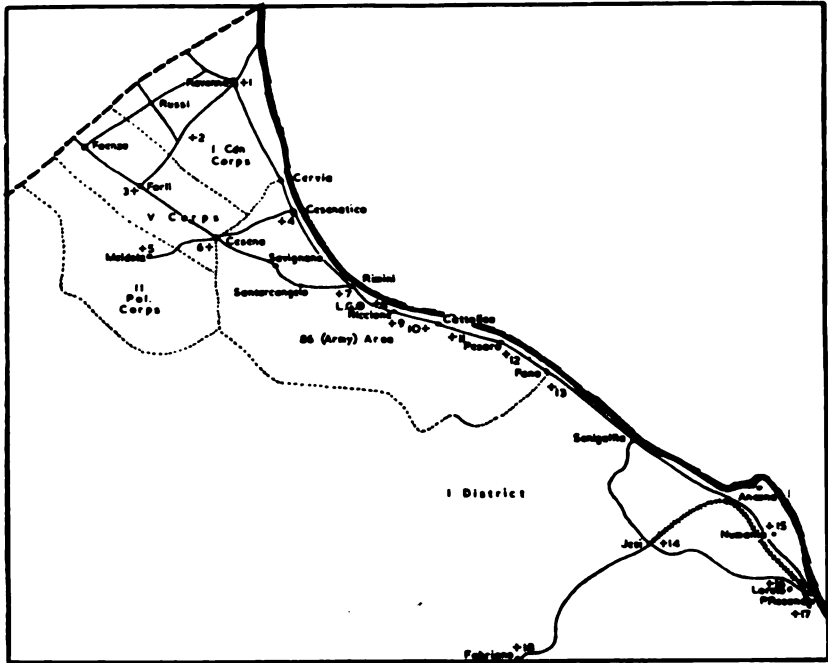


FIG. 98. Eighth Army Medical Units. December 31, 1944.

- | | |
|-------------------------------|---------------------|
| 1. 5 C.C.S., 13 (Cdn.) F.D.S. | 8. 54 & 66 B.G.Hs. |
| 2. 16 (Cdn.) F.D.S. | 15 C.C.S. |
| 3. 5 C.C.S. | 162 Pol.G.H. |
| 3 (Pol.) & 9 (Ind.) C.C.Ss. | 9. 6 Lt. Fd. Amb. |
| 1 (N.Z.) C.C.S. | 10. 3 Cdn.G.H. |
| 57 F.D.S. | 1 (Cdn.) Con. Depot |
| 140 Fd. Amb. | 11. 18 C.C.S. |
| 4. 4 (Cdn.) C.C.S. | 12. 12 C.C.S. |
| 5. 5 (Pol.) C.C.S. | 8 Con. Depot |
| 6. 1 C.C.S. | 13. 59 B.G.H. |
| 58 F.D.S. | 19 C.C.S. |
| 83 B.G.H. | 14. 1 Cdn.G.H. |
| 7. 151 Lt. Fd. Amb. | 15. 31 C.G.H. |
| 53 F.D.S. | 16. 71 B.G.H. |
| | 17. 11 B.G.H. |
| | 18. 865 F.D.S. |

Evacuation.

Canadian Corps. *via* Ravenna, Cervia to Cesenatico, or Russi, Forlì, Cesena to Cesenatico.

V. Corps. *via* Faenza, Forlì to Cesena.

Polish Corps. *via* Faenza, Forlì, Cesena, Savignano, Sant' Arcangelo, Rimini to Riccione, or from Meldola to Cesena, Savignano and on to Riccione.

X Corps. *via* Fabriano, Iesi, Loreto to Porto Recanati.

Army. From Cesena and Cesenatico to Rimini, Riccione, Cattolica and Fano.

1 District. From Fano *via* Senigallia to Iesi, Numana and P. Recanati. By air from Riccione; by sea from Ancona.

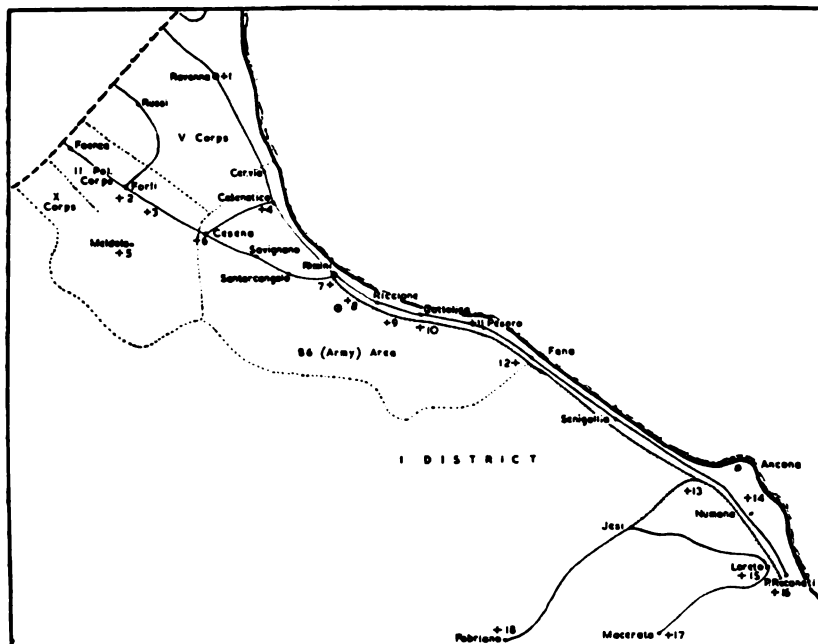


FIG. 99. Eighth Army Medical Units. April 1, 1945.

- | | | |
|--|--|---------------------------------|
| 1. 9 (Ind.) C.C.S.
58 F.D.S. | 7. 151 Lt. Fd. Amb.
53 & 64 F.D.Ss. | 12. 59 B.G.H.
66 F.D.S. |
| 2. 1 (N.Z.) C.C.S.
3 (Pol.) C.C.S.
5 C.C.S., 57 F.D.S. | 8. 6 Pol.G.H.
54 & 66 B.G.Hs. | 13. 7 Pol.G.H.
14. 31 C.G.H. |
| 3. 1 C.C.S. | 9. 12 C.C.S. | 15. 71 B.G.H. |
| 4. 62 F.D.S. | 10. 18 C.C.S. | 16. 11 B.G.H. |
| 5. 5 (Pol.) C.C.S. | 11. 5 B.G.H. | 17. 866 F.D.S. |
| 6. 83 B.G.H., 18 C.C.S.
65 F.D.S. | 8 Con. Depot | 18. 865 F.D.S. |

Evacuation Routes.

V Corps. *via* Ravenna—Cervia—Cesenatico or *via* Russi—Cesena—Cesenatico.

Polish Corps. *via* Faenza—Cesena—Savignano—Rimini.

X Corps. *via* Faenza—Forlì—Cesena.

Army. From Cesena and Cesenatico to Fano.

1 District. From Fano to Ancona, Numana and Porto Recanati.

By air from Riccione. By sea from Ancona.

was duly translated into Italian. With each of these groups served a staff captain (medical) and a British liaison unit.

The Medical Order of Battle of the Units of the 15th Army Group, excluding the Units of the U.S. Army as at December 31, 1944, are given in full in Appendix XX at the end of this chapter. Appendix XXI shows the locations of the General Hospitals of the 15th Army Group (excluding U.S. units) on the same date.

CORPS MEDICAL ARRANGEMENTS

V CORPS

During the advance of V Corps through the Gothic Line to Rimini there were only two F.D.Ss. available, 57 and 58, which had been formed out of 216 Fd. Amb. (Corps field ambulance). In its early stages there were two axes of advance, and when one F.D.S. was employed on each of these the lack of reserve F.D.Ss. was keenly felt. The light sick were dealt with by the headquarters of two light field ambulances, 5 and 13, from 25th Tk. Bde. and 7th Armd. Bde. They leap-frogged over each other and managed to deal with some 200-300 patients, including exhaustion and V.D. cases. So long as they could find suitable buildings all was well, but when later the German resistance stiffened and the advance was slowed down, such accommodation was hard to find and neither of these field ambulances had any tentage. When 5 Lt. Fd. Amb. rejoined 25th Tk. Bde. its place was taken by 166 Lt. Fd. Amb.

Because the advance was not rapid it became possible always to replace the F.D.S. with a C.C.S. within forty-eight hours of its opening. When the C.C.S. came up, the two F.S.Us. and the F.T.U. that were attached to the F.D.S. remained with the C.C.S.

When the two axes of advance converged, casualties were very numerous and it was found expedient to open both F.D.Ss. in the same village to form one large A.S.C. Two C.C.Ss. were likewise sited together some ten miles to the rear.

The system adopted was as follows :

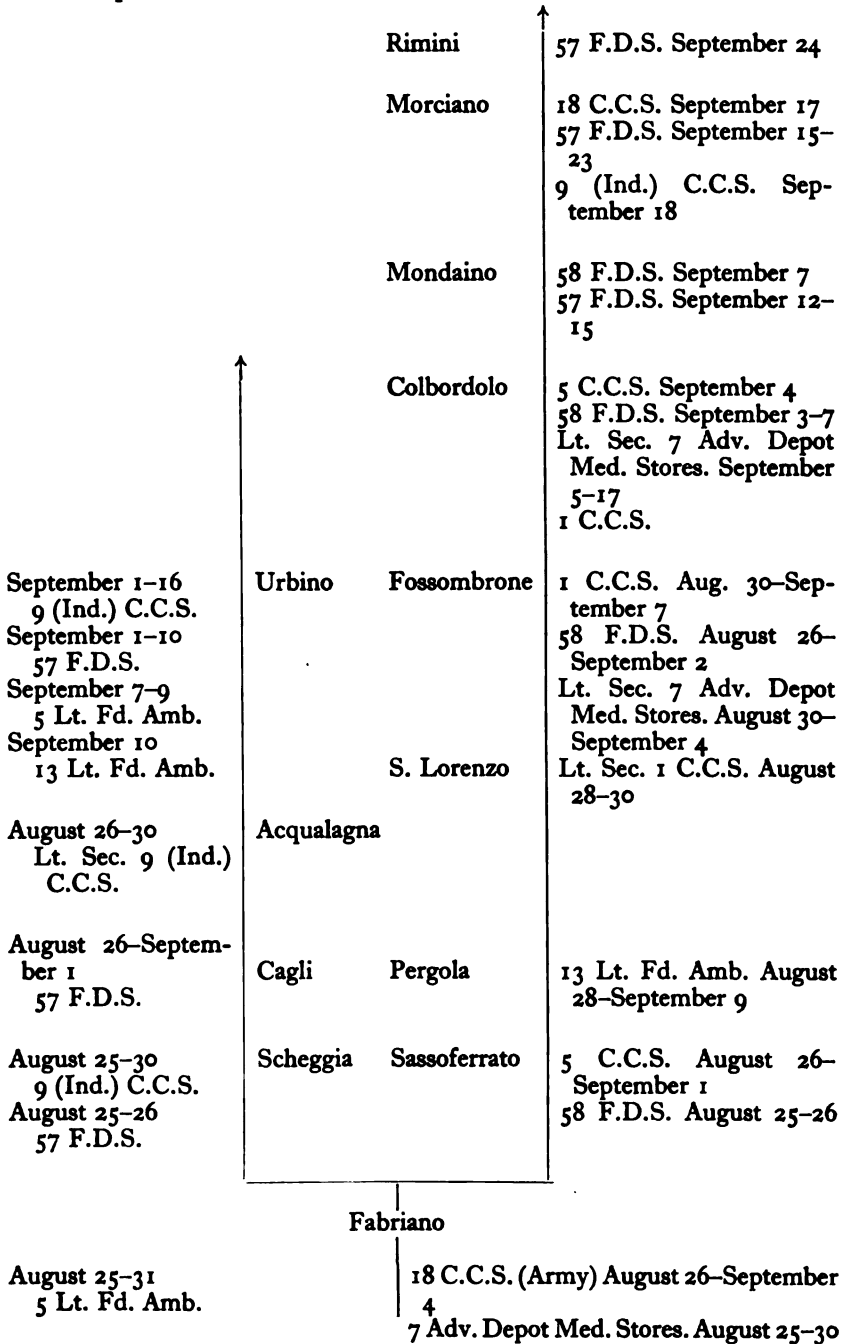
- (1) Each F.D.S. had two F.S.Us. and one F.T.U. attached.
- (2) Each C.C.S. had one F.S.U. and one F.T.U. attached.
- (3) Lt. Sec. 7 Adv. Depot Med. Stores was always associated with the more forward C.C.S.
- (4) The Ophthal. Sec. 58 B.G.H. was likewise attached to the more forward C.C.S.
- (5) The rearward C.C.S. had attached to it 1 Mob. Bact. Lab. and 42 Fd. Dental Lab.
- (6) In the vicinity of the H.Q. of a light field ambulance accepting sick and attached thereto were the Corps Psychiatric Team and the V.D.T.C.

The second H.Q. light field ambulance was prepared to move forward to the vicinity of the more forward C.C.S.

- (7) Evacuation from the forward areas was by stretcher-bearing jeep and A.F.S. four-wheel-drive cars.

By this time both 46th and 56th Divisions had their field ambulances organised on the latest W.E. It was noted by D.D.M.S. V Corps that neither took kindly to this change. It was unfortunate that they had no divisional F.D.Ss.

The system of employment of the corps medical units at this time can be depicted as under :



To cover V Corps during its advance across the Savio, Ronco, Montone and Lamone Rivers as it moved to the north-west along the general axis of Route 9, Sant' Arcangelo, Cesena and Forli were built up in succession as the Corps medical centre. 5 C.C.S. preceded 58 F.D.S. to Sant' Arcangelo. In Cesena and Forli the F.D.S. moved in about forty-eight hours before the C.C.S. and on both occasions the former continued to take Priority cases, the latter the remainder. At the end of November, on the advice of Consulting Surgeon, Eighth Army, 1 C.C.S. opened in Cesena for the treatment of selected cases by primary suture, the cases being held until fit and then returned to their units.

140, 5 Lt. and 166 Lt. Fd. Amb. were used for the treatment of the light sick in the Corps area.

The forward movement of the medical units was as follows :

Forli . . .	5 C.C.S.	November 25
	57 F.D.S.	„ 24
	1 (N.Z.) C.C.S.	December 2
	5 Lt. Fd. Amb.	„ 2-30
	9 (Ind.) C.C.S.	„ 11
	140 Fd. Amb.	„ 30
Cesena . . .	1 C.C.S.	October 29
	5 C.C.S.	„ 30-November 24
	9 (Ind.) C.C.S.	November 1-December 10
	58 F.D.S.	October 26
	140 Fd. Amb.	„ 30-December 29
Sant' Arcangelo	5 C.C.S.	October 19-29
	140 Fd. Amb.	„ 20-28
	166 Lt. Fd. Amb.	November 1-December 27
Le Ville . . .	57 F.D.S.	November 4-22
	58 F.D.S.	October 13-24
Rimini . . .	9 (Ind.) C.C.S.	October 14-29
	57 F.D.S.	„ 1-November 3
	166 Lt. Fd. Amb.	„ 13-30
Morciano . . .	58 F.D.S.	October 1-12
Colbordolo . . .	5 C.C.S.	October 1-17
Urbino . . .	13 Lt. Fd. Amb.	October 1-13

During the months January-March, V Corps was holding that sector of the line in front of and north-west of Faenza with the corps axis on the Faenza-Forli-Cesena road (Route 9). In January, Canadian I Corps was withdrawn and V Corps took over the sector extending to the

Adriatic coast north of Reno, south of Lake Comacchio, and then along the Senio, north-west of Bagnacavallo to north-west of Faenza.

Though there were many small local actions undertaken during the months of January–March 1945 to improve the defended localities and much probing of the German positions, no major operation was undertaken and no administrative problem connected with the evacuation of casualties arose. The light sick were held in the corps area in 1 C.C.S., 57 F.D.S. and 62 F.D.S. as well as in the divisional medical units. The R.A.Ps. were linked with the A.D.Ss. by ambulance jeeps and the A.D.Ss. themselves were within easy reach of the A.S.C. For the transport of casualties carriers were employed between the companies of a battalion and its R.A.P. The sides of the carrier were prolonged by two armoured plates about two feet by eight inches, two racks on which to place the stretchers were fitted within, one on either side of the central engine. Some units fitted a raised armoured plate extending along the back to equal the height of the sides and most had canvas canopies constructed to protect the patients from inclement weather. Both canopies and sides of the carrier were painted with Red Crosses. All carried a Red Cross flag. Usually the distribution was one carrier per R.A.P.

'Weasels' were used in the snow with a sledge attached by rigid fixed rods. The sledge took two stretchers and a screen was fitted to the forepart to prevent the snow thrown up by the tracks from falling upon the patient. On the vehicle itself a simple improvisation was tried out. Three uprights of 'L' iron were fused to the back, one at either end and one in the centre, supporting a rail about eight inches above the top, just clearing the exhaust and the fire-extinguisher. On this and on the rail immediately behind the front seats two stretchers fitted, with the runners inside and the handles projecting just beyond the backs of the seats. The 'Weasel' proved to be very useful over muddy country; it could get across places impossible to the carrier and the jeep. Moreover, it could become water-borne and so could be used for the crossing of rivers. Its one disadvantage was that its tracks would not last more than two hundred miles of hard surface.

CANADIAN I CORPS

To breach the outpost line along the Metauro in front of the Gothic Line a simultaneous attack by the 5th, Canadian 1st Division and Polish II Corps was planned. To the Canadians was assigned the task of capturing the Tomba di Pesaro, eight miles west of Pesaro. This involved the crossing of the Metauro and the Foglia Rivers.

The five Canadian F.D.Ss., the F.S.U.s. and the F.T.U.s. were all under the operational control of D.D.M.S. Canadian Corps. 1 Cdn.G.H. was opened in Iesi and 14 Cdn.G.H. was *en route* for Perugia.

On August 24, as Canadian 1st Division began to move up to the Metauro, 4 (Cdn.) C.C.S. with 1 and 4 (Cdn.) F.S.U.s., 1 and 3 (Cdn.) F.T.U.s., a surgical team from 14 Cdn.G.H. and extra nursing sisters, moved forward to a site at the junction of the main 'down' route and the lateral road which ran parallel to the north-west bank of the Cesano River, in the vicinity of S. Michele. This group was to constitute the advanced surgical centre. On August 25, H.Q. 6 Lt. Fd. Amb. (21st Tk. Bde.) with 2 (Cdn.) Exhaustion Unit attached, 16 (Cdn.) F.D.S. with nursing sisters, F.S.U.s. and F.T.U.s. attached and 3 (Cdn.) F.D.S. moved to the San Michele area, the two F.D.Ss. remaining closed on wheels.

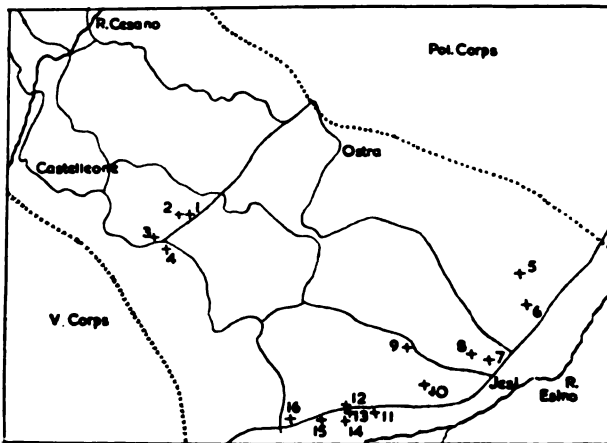


FIG. 100. The Distribution of the Canadian Forward Medical Units. August 24, 1944.

- | | |
|--------------------------------|--|
| 1. 4 Fd. Amb. | 10. 24 Fd. Amb. |
| 2. 2 F.D.S. | 11. Br. 6 Lt. Fd. Amb. for minor sick.
Psychiatric centre |
| 3. 5 Fd. Amb. | 12. 4 C.C.S. closed & on wheels |
| 4. 9 Fd. Amb., 2 Fd. Hyg. Sec. | 13. 16 F.D.S. closed & on wheels |
| 5. Con. Depot | 14. 3 F.D.S. |
| 6. 8 Lt. Fd. Amb. | 15. 5 Fd. Hyg. Sec. |
| 7. 13 F.D.S. open | 16. 5 C.C.S. closing |
| 8. 1 Cdn.G.H. open | |
| 9. 7 Lt. Fd. Amb. | |

4 and 5 (Cdn.) Fd. Ambs., supporting Cdn. 1st and 2nd Inf. Bdes. respectively, opened their A.D.Ss. a few miles in front of San Michele.

The crossing of the Metauro was achieved without difficulty for the Germans were withdrawing in this sector. But the subsequent advance to the Foglia was so greatly hindered by mines, demolitions and stubborn rearguards that it was August 30 before the Canadians were in contact with the main defences of the Gothic Line.

Canadian casualties during this phase of Operation 'Olive' were 109 killed and 415 wounded. 4 (Cdn.) Fd. Amb. opened just north of the Metauro on August 26 and cleared Canadian 1st Division until the 29th, when 9 (Cdn.) Fd. Amb. opened to the east of Ginestreto, some six miles further forward.

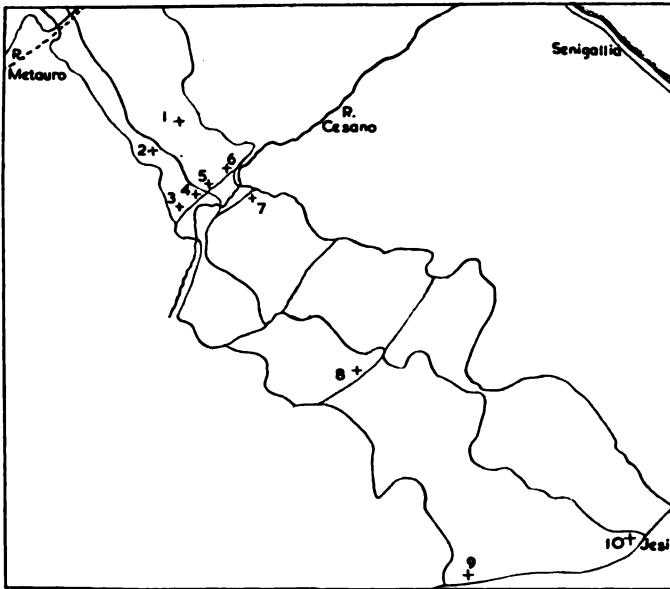


FIG. 101. The Distribution of the Canadian Forward Medical Units. August 25, 1944.

- | | |
|-----------------------|-------------------------------------|
| 1. 5 Fd. Amb. | 6. 16 F.D.S. closed & on wheels |
| 2. 4 Fd. Amb. | 7. 3 F.D.S. closed & on wheels |
| 3. 9 Fd. Amb. | 8. 1 & 2 F.D.Ss. closed & on wheels |
| 4. Br. 6 Lt. Fd. Amb. | 9. 5 C.C.S. closed |
| 5. 4 C.C.S. open | 10. 1 Cdn.G.H. open |
| 1 & 4 F.S.U.s. | |
| 1 & 3 F.T.U.s. | |

----- Front line

Priority I and II cases were evacuated to 4 (Cdn.) C.C.S. until the 28th and thereafter to 16 (Cdn.) F.D.S. which opened an A.S.C. north of the Metauro on the main lateral road to Fano. On August 30 this A.S.C. moved forward to a site midway between the Metauro and the Foglia. Priority III cases were all evacuated by 1 (Cdn.) M.A.C. direct to 1 Cdn.G.H. at Iesi.

Canadian 5th Armd. Division took over the left flank of Canadian I Corps. An assault by Canadian 5th Armd. and Canadian 1st Divisions in the area of Tomba di Pesaro pierced the Gothic Line in this sector by September 1. On September 2, Canadian 1st Division advanced toward

Cattolica and Canadian 5th Armd. Division north-west towards the Conca. In three days' fighting the Canadians had lost 235 killed and 591 wounded. The armoured division suffered most and it became necessary to reinforce the A.D.S. of 24 (Cdn.) Fd. Amb. at Monteciccardo. 9 (Cdn.) Fd. Amb. opened its A.D.S. in Ginestreto to serve Canadian 1st Division.

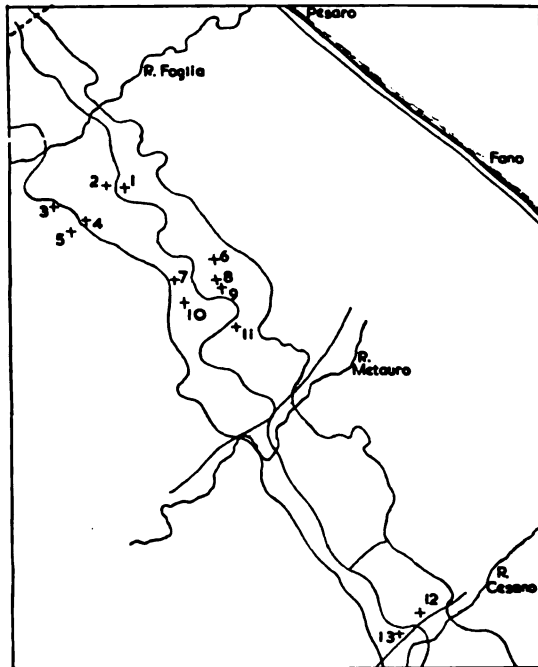


FIG. 102. The Distribution of the Canadian Forward Medical Units. September 1, 1944.

- | | |
|--------------------------------|---|
| 1. 5 Fd. Amb. | 8. 3 F.D.S. open |
| 2. 9 Fd. Amb. | 1 & 4 F.S.U.s. |
| 3. 8 Lt. Fd. Amb. | 1 F.T.U. |
| 4. 24 Fd. Amb. | Surgical Team B |
| 5. 7 Lt. Fd. Amb. | 9. 1 F.D.S. closed & on wheels |
| 6. 2 F.D.S. closed & on wheels | 10. 13 F.D.S. closed & on wheels |
| 7. 16 F.D.S. closing | 11. 5 Fd. Amb. |
| 2 & 3 F.S.U.s. | 12. 4 C.C.S. for sick and psychiatric cases |
| 2 F.T.U. | 13. Br. 6 Fd. Amb. Sick and psychiatric cases |
| | 5 C.C.S. moving to the north of the R. Cesano |

To the A.S.C. of 16 (Cdn.) F.D.S. at Mombaroccio was added 3 (Cdn.) F.D.S. and its attached units. 4 (Cdn.) C.C.S. was able to accept only a limited number of Priority III cases as it was holding many

post-operative Priority I and II patients. The majority of the Priority III cases therefore continued to be evacuated directly to 1 Cdn.G.H. at Iesi.

On September 3, Cattolica having been captured and both Canadian divisions being about to cross the Conca, 1 (Cdn.) F.D.S. established an A.S.C. at the junction of the main 'down' route and the lateral road that followed the south bank of the Foglia to Pesaro. Nearby 5 (Cdn.) C.C.S. had opened, to be joined by (Br.) 6 Lt. Fd. Amb. with 2 (Cdn.) Exhaustion Unit attached. 4 (Cdn.) Fd. Amb. opened in S. Giovanni in Marignano on the other side of the river and 8 (Cdn.) Lt. Fd. Amb. was established about two miles to the south-west.

On September 4 the A.S.C. based on 1 (Cdn.) F.D.S. was quickly filled and 5 (Cdn.) C.C.S. was equally occupied with Priority III cases. 2 (Cdn.) F.D.S. with two F.S.Us., one F.T.U. and six nursing sisters, was therefore directed to S. Giovanni, there to open an A.S.C. little more than three miles behind the front.

By September 5, Canadian 1st Division had penetrated to the Melo and had occupied Riccione, while Canadian 5th Armd. Division had secured the heights about Misano, only to be checked along the Coriano ridge, as also was V Corps on the left of Canadian I Corps. Rain intervened to bring all large-scale operations to an end for a whole week and to isolate 1 (Cdn.) F.D.S. and 5 (Cdn.) C.C.S. by washing away all the bridges over the Foglia west of Pesaro. By September 8 it had become necessary to direct all Priority I and II cases to 2 (Cdn.) F.D.S. in S. Giovanni and all Priority III cases *via* Pesaro to 14 C.C.S. at Fano.

5 (Cdn.) C.C.S. moved north of the Foglia to open in Cattolica. 4 (Cdn.) C.C.S. was ready to open two and a half miles north of Cattolica, but because of its close proximity to the front it was kept closed for the time being. 9 (Cdn.) Fd. Amb. established its A.D.S. half way between Cattolica and Riccione along the axis of Canadian 1st Division's penetration up the coast. 4 and 5 (Cdn.) Fd. Amb. were in Cattolica on wheels. 24 (Cdn.) Fd. Amb. and 8 (Cdn.) Lt. Fd. Amb., with Canadian 5th Armd. Division, opened light A.D.Ss. over the Conca on the right and left flanks respectively. As the fighting died down the light A.D.S. of 24 (Cdn.) Fd. Amb. developed into a standard A.D.S. while that of 8 (Cdn.) Lt. Fd. Amb. closed.

At this point regrouping brought 4th Division, New Zealand 2nd Division and Greek 3rd Mountain Bde. u/c Canadian I Corps. On the night of September 11/12, Canadian 5th Armd. Division with two divisions of V Corps successfully attacked the Coriano ridge, while on the right Canadian 1st Division and the Greek Mountain Bde. drove across the Marano towards Rimini. 4th Division relieved Canadian 5th Armd. Division while Canadian 1st Division, after much bitter fighting, thrust its way into the village of San Martino and on to the crest of San Fortunato by the 20th.

For this action three A.S.Cs. were opened; 2 (Cdn.) F.D.S. with 1 and 4 (Cdn.) F.S.U.s., 1 (Cdn.) F.T.U. and a surgical team from 15 (Cdn.) G.H. in S. Giovanni; 4 (Cdn.) C.C.S. with 2 and 3 (Cdn.) F.S.U.s., 2 (Cdn.) F.T.U. and a Greek surgical unit on the coast to the north-west of Cattolica; 5 (Cdn.) C.C.S. with surgical teams from 14 Cdn.G.H. and 3 (Cdn.) F.T.U. in Cattolica itself. The two C.C.Ss. were prepared to receive Priority III casualties.

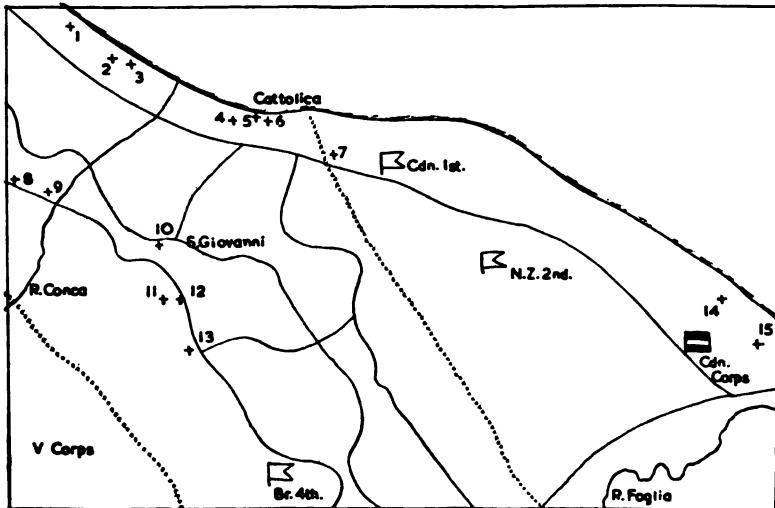


FIG. 103. The Distribution of the Canadian Forward Medical Units. September 13, 1944.

N.Z. 2nd Division and Br. 4th Division with 25th Army Tk. Bde. under command.

- | | |
|---------------------------|---------------------------------|
| 1. Br. 10 Fd. Amb. | 7. New Zealand 5 Fd. Amb. |
| 2. 4 C.C.S. open | 8. 24 Fd. Amb. |
| 2 & 3 F.S.U.s. | 9. Br. 12. Fd. Amb. |
| Greek F.S.U. | 10. 2 F.D.S. |
| 2 F.T.U. | 1 & 4 F.S.U.s. |
| 3. 9 Fd. Amb. | 1 F.T.U. |
| 4. Br. 5 & 6 Lt. Fd. Amb. | Surg. Team 15 Cdn.G.H. |
| 5. 5 C.C.S. open | 11. 7 Fd. Amb. |
| Br. 5 F.S.U. | 12. 8 Lt. Fd. Amb. |
| 3 F.T.U. | 13. Br. 159 Fd. Amb. |
| Surg. Team 14 Cdn.G.H. | 14. 3 F.D.S. closed & on wheels |
| 6. 4 & 5 Fd. Amb. | 15. 13 & 16 F.D.Ss. |

▬ = H.Q. Corps

▭ = H.Q. Division

On September 13, 200 casualties from Canadian 5th Armd. Division passed through the A.D.S. of 24 (Cdn.) Fd. Amb. south of Misano. Before the Fortunato height had been captured Canadian 1st Division had endured nearly 1,000 wounded. These were evacuated through 9 (Cdn.) Fd. Amb.'s. A.D.S. midway between Cattolica and Riccione until

September 16, when 5 (Cdn.) C.C.S. opened in Riccione itself. To 5 (Cdn.) C.C.S. a British F.S.U., and to 4 (Cdn.) C.C.S. a New Zealand F.S.U., were added, for the three Canadian advanced surgical centres were working to capacity. Canadian casualties from September 13 to September 20 totalled 453 killed and 1,351 wounded.

The siting of the two C.C.Ss. as near as three thousand yards from the forward defended localities, attended as it was by a certain risk, was more than justified in the opinion of D.D.M.S. Canadian I Corps.

3, 13 and 16 (Cdn.) F.D.Ss. remained on wheels in the Corps rear area throughout this action. 1 (Cdn.) F.D.S. was holding post-operative patients south of the Foglia.

Evacuation rearward of Corps area was to 1 Cdn.G.H. at Iesi; most British and Greek casualties were passed on to 14 and 19 C.C.Ss. at Fano, the few specialist cases being directed to 83 B.G.H. at Loreto.

After establishing bridgeheads across the Marecchia, Canadian 1st Division was relieved by N.Z. 2nd Division on September 22. On the same day Canadian 5th Armd. Division returned to the line, replacing 4th Division. The Uso was crossed, but the end of September found Canadian I Corps halted along the south bank of the Fiumicino for the rain had come once more to create a whole series of water obstacles.

The New Zealand field ambulances were all located between the Marecchia and the Uso, evacuating to the A.S.Cs. around Cattolica. Thence the casualties were cleared to 1 N.Z.G.H. at Senigallia.

8 (Cdn.) Lt. Fd. Amb. covered Canadian 5th Armd. Division at the crossing of the Marecchia and on the 27th 7 (Cdn.) Fd. Amb. opened in S. Giustina, on Route 9, between Sant' Arcangelo and Rimini, to clear the divisional front.

Since August 25 a total of 6,149 wounded had been admitted to the medical units serving with Canadian I Corps. Of these 3,769 were Canadian; the remainder included British, New Zealanders, Greeks, Americans, South Africans, Poles, Italians and Germans. In addition 5,744 sick were admitted, to give a grand total of 11,893 admissions during the thirty-seven-day period. Of the sick malaria accounted for only 692 (Canadians) and P.U.O. for another 1,196.

During the latter part of September, as the offensive ground to an end in a sea of mud, much reorganisation occurred within the medical services of Canadian I Corps. All the field ambulances were converted to light field ambulances, each with a H.Q. and four sections. Four of the F.D.Ss. were made corps troops and thus placed permanently under D.D.M.S. Corps. The fifth, 3 (Cdn.) F.D.S., went to Avellino to become 1 (Cdn.) Fd. Hosp. (50 beds) and to free 3 Cdn.G.H. (200 beds) for duty with the Corps. The F.D.Ss. were given extra transport so that they might carry the beds, mattresses and equipment needed for the care of post-operative patients. To each of the C.C.Ss. were added two

medical officers and four orderlies trained in resuscitation, four nursing sisters for the permanent staff and six nursing sisters (including two operating room supervisors) for duty at A.S.Cs. In this way two surgical groups, each consisting of two F.S.U.s., one F.T.U. and six nursing sisters, and each based on a C.C.S., returning there when not otherwise employed, were created. Two of the F.T.U.s. were each reinforced by two medical officers withdrawn from the F.D.Ss.; the third F.T.U. was disbanded. It was intended to disband 2 (Cdn.) Lt. Fd. Amb. serving, apart from Corps, with Canadian 1st Armd. Bde. u/c XIII Corps. There was so much opposition, however, from XIII Corps and from U.S. Fifth Army that the project was abandoned.

It had been hoped that by this reorganisation there would be a manpower saving of 13 officers and 346 O.Rs. The retention of 2 (Cdn.) Lt. Fd. Amb. reduced this saving by one half. The outcome of this reorganisation was that A.Ds.M.S. divisions shortly began to ask for an additional section for each light field ambulance, this to consist of one stretcher-bearer officer and ten O.Rs.

It is to be noted that when Canadian I Corps joined Canadian First Army in North-West Europe it was ordered to undo all these organisational changes.

During the first ten days of October, Canadian I Corps occupied positions along the southern bank of the swollen Fiumicino from the Adriatic inland for a distance of about four miles. On October 1, 13 (Cdn.) F.D.S. with an attached surgical group opened in Rimini for Priority I and II cases from Canadian 5th Armd. Division. N.Z. 2nd Division by this time had its own A.S.C. based on 4 (N.Z.) Fd. Amb. Priority III cases from both divisions were directed to 5 (Cdn.) C.C.S. at Cattolica since 4 (Cdn.) C.C.S. had closed to make room for 3 Cdn.G.H. in Riccione. To this hospital were attached 1 (Cdn.) Mob. Bact. Lab., a 250-bed detachment from 1 (Cdn.) Con. Depot, 2 (Cdn.) Exhaustion Unit and 2 (Cdn.) V.D.T.U. 1 Cdn.G.H. and 1 N.Z.G.H. at Senigallia received the overflow of Priority III cases as well as others evacuated beyond Corps.

When, on October 10, the offensive was resumed the Canadian sector had been extended to include the Rimini-Bologna road, Route 9, and Canadian 1st Division had taken over this new left flank. N.Z. 2nd Division had side-stepped to relieve Canadian 5th Armd. Division and had been replaced in turn by 'Cumberlandforce'.

On October 6 a second A.S.C. was opened in Rimini, based on 16 (Cdn.) F.D.S. 4 (Cdn.) Lt. Fd. Amb. had opened its A.D.S. in Sant' Arcangelo.

Canadian 1st Division crossed the Scolo Rigossa and the Pisciatello and by October 20 had cleared the northern part of Cesena, and reached the Savio, as had also N.Z. 2nd Division on the right. 'Cumberlandforce' had captured Cesenatico and was threatening Cervia.

Casualties were light and no significant changes in the evacuation arrangements occurred. 1 (N.Z.) C.C.S. opened near Bellaria, its surgical potential being strengthened by the addition of personnel from 4 (Cdn.) C.C.S. Up to October 16 the A.D.S. at Sant' Arcangelo cleared Canadian 1st Division. On this date 5 (Cdn.) Lt. Fd. Amb. opened in Savignano.

By October 24, a small bridgehead across the Savio had been secured to the north of Cesena. Then the Germans in front of the Canadians withdrew and, as a result of this, Canadian 1st Division reached the Ronco by the 26th, as did also Canadian 5th Armd. Division which had relieved N.Z. 2nd Division on the 22nd. 'Cumberlandforce' had reached the Bevano in the coastal sector.

16 (Cdn.) F.D.S. moved from Rimini to Savignano, directly in rear of Canadian 1st Division, on October 21. To it were directed Priority I and II cases. Priority III cases continued to be evacuated to 5 (Cdn.) C.C.S. at Cattolica or to 1 (N.Z.) C.C.S. near Bellaria.

Canadian I Corps, having reached the Ronco, was now relieved by 'Porterforce' and was withdrawn for rest.

4 (Cdn.) C.C.S. moved to Cesenatico on October 29 to provide a medical and surgical centre for the troops resting in this area. 7 (Cdn.) Lt. Fd. Amb. opened to the north-west of Cervia in support of 'Porterforce'.

During November Canadian I Corps was widely dispersed in billets from Urbino to Cervia. So it was that the medical units were widely scattered. 4 (Cdn.) C.C.S. remained open in Cesenatico; 5 (Cdn.) C.C.S. was open in Cattolica; 3 Cdn.G.H. provided a medical centre to the north-west of Cattolica. Minor sick in both divisions were retained for treatment by their own field ambulances.

Diphtheria and venereal disease now began to create anxiety; but up to December 31 only 170 Canadian cases of diphtheria developed.

Medical arrangements for 'Porterforce', which was under the direct control of Eighth Army for operational purposes, remained a Canadian responsibility. 7 (Cdn.) Lt. Fd. Amb. served on the right and 4 (Cdn.) Lt. Fd. Amb. on the left of 'Porterforce' sector. The officer commanding the latter unit was S.M.O. Force. The arrangements he was called upon to make were complicated by the torrential rain, the flooded roads and the lack of bridges. He had to resort to D.U.K.Ws., assault boats, breeches buoys and rafts to get his casualties back. Sections of 6 Lt. Fd. Amb. and 8 (Cdn.) Lt. Fd. Amb. also served with the force for varying periods of time.

British casualties were cleared from the A.D.Ss. to the medical units of V Corps; Canadians to 4 (Cdn.) C.C.S. at Cesenatico by 1 (Cdn.) M.A.C.

On December 1, Canadian I Corps returned to the line for Operation

'Chuckle'. Its rôle was to pass through Indian 10th Division's bridgehead over the Montone and then fan out to force the line of the Lamone, east of Lugo, and to outflank Ravenna.

Medical planning for the forthcoming operation was largely governed by the following considerations: The terrain to be traversed was highly canalised. The evacuation route would be long and precarious. Between the forward C.C.Ss. and 1 Cdn.G.H. at Iesi there already stretched a distance of about seventy-five miles. It was impossible to site a C.C.S. in front of Cesenatico at the beginning of the operation.

So A.S.Cs., based on 1 and 16 (Cdn.) F.D.Ss., were established near Route 67 joining Forli and Ravenna which ran parallel to the Ronco in the Canadian sector and linked the 'up' and 'down' routes. 16 was sited west of the river on the 'down' route, 1 was east of the river on the 'up' route, unrestricted running rights for ambulance cars over the 'up' route as far as the Forli-Ravenna lateral having been obtained.

2 (Cdn.) F.D.S. took possession in Cervia of a building that had been reserved for occupation by a C.C.S. at a later date and prepared to open there if necessary. 13 (Cdn.) F.D.S. in Rimini remained closed in reserve. 4 (Cdn.) C.C.S. in Cesenatico was reinforced by two surgical teams from the base hospitals. Its medical cases were evacuated and preparations made for the reception of Priority III cases. 3 Cdn.G.H. set aside 100 beds as an isolation ward for diphtheria cases and prepared the remaining 300 for any overflow of battle casualties. A Canadian and a British surgical team from the base joined the hospital and all its medical cases, save those in the isolation ward, were evacuated. 5 (Cdn.) C.C.S. was closed and kept in Cattolica for the time being. It was to open in Cervia if the need arose to ease the burden of 4 (Cdn.) C.C.S. Otherwise it would be moved to Ravenna or else to Russi.

On December 2, Canadian 1st Division passed through Indian 10th Division and pushed on to capture Russi, on the lateral road joining Faenza and Ravenna, on the 3rd and to reach the Lamone on the 4th, there to encounter fierce opposition. Canadian 5th Armd. Division outflanked Ravenna according to plan. Route 16 was cut. Ravenna fell to 'Porterforce' on December 4.

Until December 4, 9 (Cdn.) Lt. Fd. Amb. with its A.D.S. midway between the Ronco and the Montone cleared Canadian 1st Division and also two battalions of Cdn. 12th Inf. Bde. of Canadian 5th Armd. Division that passed through the bridgehead of Indian 10th Division. On the other flank 8 (Cdn.) Lt. Fd. Amb. with its A.D.S. just across the Ronco to the south-east of S. Pancrazio cleared the casualties of Canadian 5th Armd. Division as soon as a bridge was built over the Montone. Evacuation from both A.D.Ss. was to the A.S.Cs., of 1 and 16 (Cdn.) F.D.Ss.

4 (Cdn.) and 24 (Cdn.) Lt. Fd. Ambs. opened west of the Montone,

4 in Russi and 24 about a mile north of S. Pancrazio. On the 5th an A.S.C. was established by 2 (Cdn.) F.D.S. at Russi to serve both divisions, even though at this time Russi was so close to the front line that the despatch of nursing sisters to the A.S.C. was delayed for a while.

Priority III cases, before a route through Ravenna could be opened, had to travel by a roundabout way to 4 (Cdn.) C.C.S. at Cesenatico.

Before the crossing of the Lamone on the night of December 11/12 the medical arrangements were altered slightly. 24 (Cdn.) Lt. Fd. Amb. moved its A.D.S. to Piangipane on the 6th and on the 7th, 5 (Cdn.) C.C.S. moved into Ravenna to become the A.S.C. for Canadian 5th Armd. Division. Then it became possible to route Priority III cases through Ravenna.

Fighting along the Canale Naviglio was fierce and the obstacle was not crossed until the 15th. Canadian losses in the five days totalled 200 killed and 671 wounded. During the next three days there were 71 killed and 281 wounded. The evacuation arrangements functioned smoothly. 7 (Cdn.) Lt. Fd. Amb. was sent to reinforce the A.D.S. of 24 (Cdn.) Lt. Fd. Amb. at Piangipane. Because of persistent shelling the medical units in Russi were forced to close. On the 19th, 13 (Cdn.) F.D.S. established an A.S.C. in Ravenna to serve Canadian 1st Division and 5 (Cdn.) Lt. Fd. Amb. opened well clear of Russi along the main road to Ravenna to relieve 4 (Cdn.) Lt. Fd. Amb.

On December 19, Canadian I Corps attacked from its bridgehead across the Canale Naviglio on a two division front. By the 21st the Germans had been thrust back to the line of the Senio. The end of the month saw the Canadians well and firmly established along the Senio from Cotignola on the left to Alfonsine on Route 16 on the right. During the first three days of this final phase of the advance to the Senio, Canadian casualties totalled 97 killed and 295 wounded, during the rest of the month, 75 killed and 413 wounded.

On December 23, 7 (Cdn.) Lt. Fd. Amb. opened along Route 16 in the vicinity of Mezzano to serve Canadian 5th Armd. Division and so to relieve 24 (Cdn.) Lt. Fd. Amb. at Piangipane. 5 (Cdn.) Lt. Fd. Amb. remained east of Russi as the forward A.D.S. of Canadian 1st Division. Evacuation was to the A.S.Cs. in Ravenna along good roads and thence to 4 (Cdn.) C.C.S. at Cesenatico and 3 Cdn.G.H. south-east of Riccione.

Early in January, Canadian I Corps carried out two minor operations to consolidate its position, and thereafter its front became static. Canadian 5th Armd. Division was relieved by the Italian Cremona Gruppo while Canadian 1st Division remained in the line, being assisted by 9th and 2nd Armd. Bdes. in an infantry rôle.

In February, Canadian I Corps left Italy for North-West Europe.

All casualties were directed to British medical units in Ravenna and Forli in order to permit the Canadian medical units to prepare for their

move. As the Corps moved through Italy, France and Belgium, casualties were evacuated to the nearest British, American or Canadian hospital, either directly or through M.I. Rooms or camp reception stations.

The leading elements of Canadian I Corps began to arrive in Belgium during the last week of February. 4 (Cdn.) C.C.S. arrived on March 9 and immediately opened in the Corps troops concentration area. Elements of 1 (Cdn.) M.A.C. and 2 Cdn.G.H. then arrived and it became possible to establish an evacuation chain from 4 (Cdn.) C.C.S. to 2 Cdn.G.H. at Ghent. 3 Cdn.G.H. moved with the Corps troops. 1 and 5 Cdn.G.Hs. soon followed 14 and 15 Cdn.G.Hs. and 1 (Cdn.) Con. Depot remained in Italy until the end of March and then proceeded to the United Kingdom to be disbanded. 28 Cdn.G.H. (200 beds) authorised as an expansion of 1 (Cdn.) Fd. Hosp. remained at Avellino until mid-April. It was then disbanded and its personnel returned to the United Kingdom as reinforcements.

The problem of clearing Canadian casualties from Italy before the hospitals departed was solved by increasing the space allotment for Canadians on ambulance trains and on hospital ships. When the last Canadian hospital in Italy closed the few Canadian patients remaining were transferred to British medical units.

During the whole of the period starting with the attack on the Gothic Line to the departure of Canadian I Corps from Italy the locations of 1, 5, 14 and 15 Cdn.G.Hs. remained unchanged. 1 Cdn.G.H., while preparing to move to Arezzo in early August, was suddenly switched to Macerata, twenty miles to the south of Ancona. After a week it moved to Iesi. 14 Cdn.G.H. was sited in Perugia, mainly for the reason that a suitable site for it in or around Ancona could not be found. 5 Cdn.G.H. remained in Rome for the same reason. 15 Cdn.G.H. remained at Caserta for the reason that a large Canadian hospital was required in the advanced base area. Naples was the port of evacuation. The Canadian Base Reinforcement Group was located at Avellino, 1 (Cdn.) Con. Depot at Mercatello.

Because the spacial relationship of the Canadian hospitals to each other and to the Canadian sector of the front was far from ideal, 1 Cdn.G.H. had perforce to function as a large C.C.S. and the success of this functioning depended largely upon the facilities for evacuation from Iesi to Perugia, Rome and Caserta. No method of evacuation, by road, air, rail and sea, can always be entirely reliable, and thus it was that while the records testify that the Canadian medical services did all that was required of them there were times when anxiety lest they should fail could not be entirely stilled. As things were, too much depended on the chance that evacuation would not be too greatly interrupted. Thus between August 22 and September 30, 1 Cdn.G.H. admitted 6,325 patients, 5,720 of them being Canadians. Had there not been an excellent

system of evacuation by air this unit could never have handled so many, for the only other means of evacuation was by road to 14 Cdn.G.H. at Perugia. Then again the provision of surgical attention for the large number of battle casualties, of whom some 60 per cent. required surgical treatment over and above that already given in the forward area, was possible only through the attachment for varying periods of time of two British F.S.U.s. and of surgical teams from 15 Cdn.G.H. and 5 (Cdn.) C.C.S. Without this aid, which meant that 1 Cdn.G.H. had five surgical teams available at all times during September working in shifts all round the clock, the 1,799 operations could not have been undertaken.

In October the flow of casualties diminished. Had it not done so difficulty could not have been avoided, for early in the month air evacuation from Iesi had to be discontinued owing to deteriorating weather conditions. By October 10 there were over 660 patients in the hospital and large-scale evacuation by sea from Ancona to Bari had to be arranged. From Bari the patients were taken by rail to Caserta. Not until October 25 did the first ambulance train leave Iesi. The number of patients in 1 Cdn.G.H. continued to hover round the 600 mark and on several occasions threatened to exceed the unit's utmost capacity.

In November the same difficulties and the same anxieties remained for evacuation by road and rail was often uncertain because of bridges destroyed by flood. In December the ambulance train service became more regular and the 3,000 Canadian admissions to 1 Cdn.G.H. were disposed of without any particular difficulty, in fact the records show that discharges exceeded admissions during this month.

Under the circumstances an even distribution of cases was impossible. 14 Cdn.G.H. (1,200) was sometimes completely full and sometimes had empty beds because of the severance of road communication with Iesi. 15 Cdn.G.H. with its 1,600 beds could not handle all the patients directed to it during September and October so that there was an overflow into British units in the Caserta area. 5 Cdn.G.H. after the middle of August was never hard pressed. The total admissions to Canadian hospitals during this phase of the campaign are given in Table 30.

TABLE 30

Admissions to Canadian Hospitals. August-December 1944

	<i>Average Bed Capacity</i>	<i>Average Beds Occupied</i>	<i>Total Admissions</i>
1 Cdn.G.H. .	600	480	14,771
5 " .	600	473	4,845
14 " .	1,187	887	7,565
15 " .	1,656	1,389	9,178

Medical Branch. British Increment. U.S. Fifth Army

As a consequence of the regrouping of the Armies which was to result in the concentration of Eighth Army in the Adriatic sector, the Medical Branch, British Increment, U.S. Fifth Army became responsible for the medical arrangement of a considerable number of British, Dominion and Colonial troops. Under command U.S. Fifth Army were :

XIII Corps

6th Armoured Division
1st Infantry Division
Indian 8th Division
Canadian 1st Armoured Brigade

South African 6th Armoured Division (including 24th Guards Bde.)
(Under operational control U.S. VI Corps, August 21).

Army Troops

H.Q. 21st & 37th Beach Groups
H.Q. 71 Garrison
62nd & 66th A.A. Bdes.
10th A.G.R.A.
16th A.G.R.E.

The 'Army' medical units were :

u/c XIII Corps

4 and 3 (Ind.) C.C.Ss.	151, 157 M.D.Us.
52 F.D.S.	3 Adv. Depot Med. Stores
2, 22, 35 F.S.Us.	146 M.A.C. less 'A' Sec.
127 Para. Surg. Unit	6 M.A.S.
1 (Ind.) Mob. Surg. Unit	485 A.F.S. A.C.C. One pln.
11, 33 F.T.Us.	43, 49, 80, 81 A.M.C.Us.
2 Mob. Ophthal. Unit	
5 Mob. Bact. Lab.	

u/c S.A. 6th Armoured Division

8 (S.A.) C.C.S.	23 F.T.U.
54 F.D.S.	146 M.A.C. 'A' Sec.
1 (S.A.) & 8 F.S.Us.	

Army Troops

1 F.T.U.	155 M.D.U.
----------	------------

After August 18 the Medical Branch was with Rear H.Q. U.S. Fifth Army in the vicinity of Cecina. Local administration in the Army area was shared with 71 Garrison (later to become Florence Command), which assumed responsibility for the Florence enclave, and by 21st Beach Group which was moved up early in September from Piombine to administer the Army Roadhead at Colle Salvetti.

Before the move of Eighth Army to the Adriatic sector, 2 C.C.S. (Army) at Malignano, west of Siena, was holding cases to be evacuated

by air from the west of the line held by Eighth Army. To this C.C.S. 4 B.S.S. was attached as was also 1 F.T.U. which acted as a blood-bank. When, in mid-August, U.S. Fifth Army took over the central sector of the front, 2 C.C.S. remained at Malignano u/c 1 District and dealt with cases for evacuation by air from U.S. Fifth Army. 1 F.T.U. passed u/c U.S. Fifth Army and became responsible for the distribution of transfusion materials received by air from Bari among the medical units of XIII Corps and S.A. 6th Armoured Division.

Evacuation was :

- (a) From S.A. 6th Armoured Division medical area, in which were 8 (S.A.) C.C.S., 54 F.D.S., 1 (S.A.) and 8 F.S.U.s. and 23 F.T.U., at Castelfiorentino to 2 C.C.S. at Malignano.
- (b) From XIII Corps medical area in which was 132 Fd. Amb. and later 'E' F.D.S., at Greve to 2 C.C.S.
- (c) From 4 C.C.S. at S. Giovanni and 3 (Ind.) C.C.S. at Figline to 31 B.G.H. and 18 I.G.H. at Arezzo *via* Route 69.

In August 8 C.C.S. replaced 2 C.C.S. at Malignano. About 180 patients were being admitted daily at this time. Of these about 60 per day were being evacuated by air and about 20 returned to their units. The remainder were evacuated by road, mostly to 59 B.G.H. at Orvieto. Cases for specialist units were sent to Arezzo and for this purpose two platoons of 45 M.A.C. were attached by 1 District to 8 C.C.S. On September 26, 108 S.A.G.H. opened in Careggi, a suburb of Florence. On September 20 an A.E.C. had opened at Castello airport, Florence and so 'E' F.D.S. and 8 C.C.S. were able to close and to pass u/c XIII Corps.

Evacuation was now :

- (a) From XIII Corps medical area in which were 4 C.C.S. and 'D' F.D.S. at Borgo San Lorenzo to 108 S.A.G.H.
- (b) From 52 F.D.S. at Rufina to 108 S.A.G.H.
- (c) From 'E' F.D.S. at Torre a Cona to 108 S.A.G.H.
- (d) From 3 (Ind.) C.C.S., adjacent to 108 S.A.G.H. in Careggi, by road to 18 I.G.H., Arezzo. Cases for evacuation by air were sent to the Castello airport, Florence.
- (e) From 54 F.D.S., Bagnolo, to 108 S.A.G.H.
- (f) From 8 (S.A.) C.C.S., Signa, to 108 S.A.G.H.
- (g) From 108 S.A.G.H. by road to 31 B.G.H., Arezzo; by air from the A.E.C. Castello airport to Capodichino airport, Naples, for the hospitals in the Naples area.

3 Adv. Depot Med. Stores was first at Ferretto with a light section attached to 4 C.C.S. at S. Giovanni. In mid-September this unit moved to the Casa Nazionale Grande di Invalidi di Guerra, about a mile south of Florence on Route 2. 1 F.T.U. functioned as a blood bank, being

attached first to 2 C.C.S. at Malignano and later to 8 C.C.S., to 4 C.C.S. and then to 108 S.A.G.H.

The British element of U.S. Fifth Army now came to consist of about 108,000 British, 18,000 South African (including 1,700 personnel of the Cape Corps), 16,000 Indian, 4,000 Canadian and 2,000 African troops, belonging in the main to 6th Armoured, 1st and 78th Infantry Divisions, Indian 8th Division, S.A. 6th Armoured Division, Canadian 1st Armd. Bde., Florence Command and 60 Sub-area. Its medical units were :

u/c U.S. Fifth Army

107 and 108 S.A.G.Hs.	11 Fd. San. Sec.
8 (S.A.) C.C.S.	964 Italian Fd. Hosp.
8 F.S.U. 1 & 2 (S.A.) F.S.U.s.	54 F.D.S.
1 & 23 F.T.U.s.	153 M.D.U.
84 Fd. Dent. Centre	57, 62 P.A.Cs.
4 B.S.S.	13 V.D.T.T.

u/c XIII Corps (Army Troops)

4 & 8 C.C.Ss. 3 (Ind.) C.C.S.	'D' (Ind.) Dent. Unit
52 F.D.S.	9 Fd. Dent. Lab.
3 Adv. Depot Med. Stores	13 Corps Psychiatric Team
5 Mob. Bact. Lab.	Ophthal. Sec. 54 B.G.H.
2, 9, 10, 22, 28, 31, 35 F.S.U.s.	11, 12, 33 F.T.U.s.
130, 151, 152, 156, 157, 161 M.D.U.s.	1 (Ind.) Mob. Surg. Un

u/c XIII Corps

13 Fd. Hyg. Sec.
55 F.D.S. (and the divisional units)

u/c S.A. 6th Armoured Division

19, 20 (S.A.) Fd. Amb.s.	6th S.A. Armd. Divisional
6 (S.A.) Fd. Hyg. Sec.	Dental Unit
	137 Fd. Amb.

U.S. Fifth Army was now fighting in the mountains north of Florence. XIII Corps, on the right, was thrusting towards Forli, Faenza and Imola and S.A. 6th Armoured Division towards Prato and Bologna. The main axes were disposed like the spokes of a wheel with Florence at the hub. In late December Indian 8th Division, less one brigade group, was taken from XIII Corps and moved to the north of Lucca. Along the axis of each of these formations was placed a F.D.S. or C.C.S. with M.A.C. facilities attached. In Florence 108 S.A.G.H. functioned as a C.C.S. until it was relieved by the 1,000-bed 107 S.A.G.H. Since the hospital accommodation was not sufficient to serve the equivalent of nearly six divisions it was at all times necessary to expedite evacuation to Arezzo and Naples. U.S. medical installations admitted British troops in the area north of Prato.

XIII CORPS

On August 18, XIII Corps passed to command U.S. Fifth Army, S.A. 6th Armd. Division joining U.S. II Corps accompanied by 8 (S.A.) C.C.S., 54 F.D.S. and a section of 146 Coy. R.A.S.C. (M.A.C.).

In the third week of August 52 F.D.S. at Figline, and later at Salceto, was serving 6th Armd. and Indian 8th Divisions. 4 C.C.S. had opened at San Giovanni on Route 69 and 3 (Ind.) C.C.S. had moved up to Greve and later to Figline. 132 Fd. Amb. (Corps) was now attached to 1st Division. To make good the shortage of F.D.Ss., companies of field ambulances were taken and used in the formation of improvised F.D.Ss. Thus 'D' F.D.S. was opened in Florence by September 1.

As the advance beyond Florence continued 4 C.C.S., 3 (Ind.) C.C.S., Hy. Sec. 8 C.C.S., detachments of 'D' and 'E' F.D.Ss., 9 Fd. Dental Lab. and the Corps Psychiatric Centre were moved to the area of Borgo San Lorenzo, the C.C.Ss. opening in Careggi, immediately to the north of Florence.

On September 26, 108 S.A.G.H. opened in Florence; 8 C.C.S. was in the vicinity of Marradi and 52 F.D.S. was in Rufina on Route 67.

XIII Corps, with 1st Division on the left advancing *via* Marradi, Palazzuolo di Romagna, Casola Valsenio, to Castel Bolognese on Route 9, and Indian 8th Division and 6th Armd. Division on the right, passed through the Gothic Line. The Corps side-stepped to the left, taking over sections of the line from U.S. formations. It was now in very mountainous country with few towns or villages and fewer roads. It was decided therefore to keep the C.C.Ss. fairly far back and to make full use of A.S.Cs. formed by F.D.Ss. or by field ambulances with attached F.S.U.s. Thus an A.S.C. was established at Marradi to serve Indian 8th and 1st Divisions and a F.S.U. was attached to 14 Fd. Amb. at San Benedetto in Alpe on Route 67 to serve 6th Armd. Division, 52 F.D.S. at Rufina taking the low priority cases and the sick. The medical centre at Borgo S. Lorenzo—4 C.C.S., 3 (Ind.) C.C.S., 55 F.D.S. and the Corps Psychiatric Team—had difficulty in finding shelter for 400 patients. 3 (Ind.) C.C.S. was reduced to become a staging unit, Indian casualties being sent to 8 C.C.S.

The movement of XIII Corps to the left continued, the line being held by, from left to right, 78th Division, 6th Armd. Division, 1st Division and Indian 8th Division with 26th Armd. Bde. Gp. on the right flank. Corps medical support from left to right was 56 F.D.S. in Coniale, 8 C.C.S. and a detachment of 3 (Ind.) C.C.S. in Marradi, A.S.Cs. in Palazzuolo and Benedetto, with rear installations at Borgo S. Lorenzo and Rufina, evacuating to Florence.

In preparation for the snow, nine snow posts, each consisting of one N.C.O. and 4 O.Rs. R.A.M.C., were organised. They were to be placed (1) along Route 67 at S. Godenzo, on the summit of the pass, and in

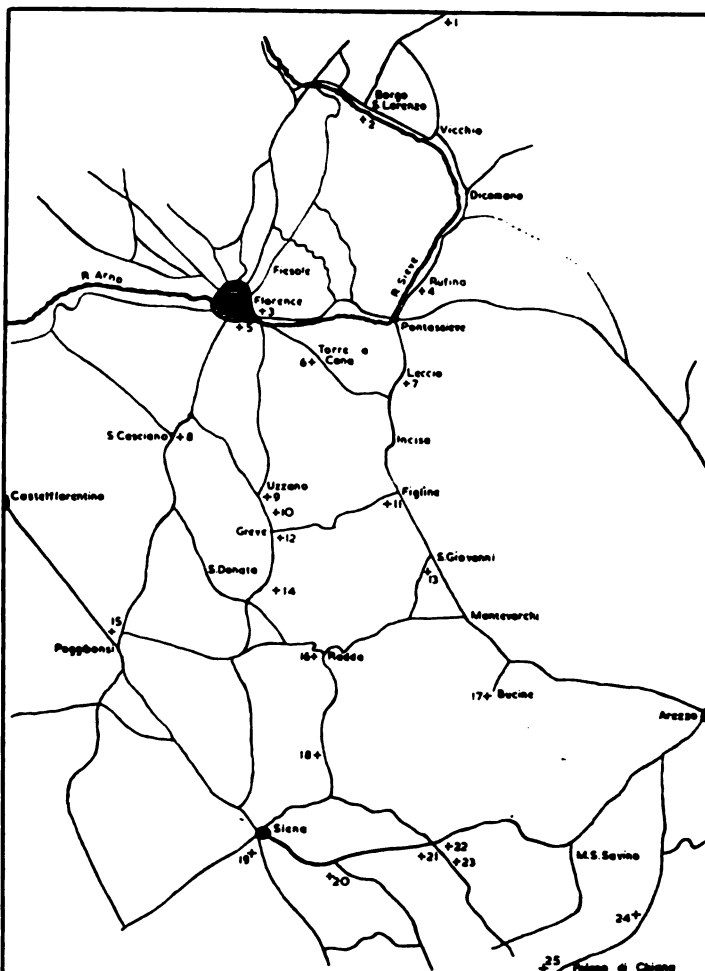


FIG. 104. XIII Corps Medical Units. July-September 1944.

- | | |
|------------------------------|-----------------------------|
| 1. A.S.C. | 13. 4 C.C.S. August 26 |
| 'D' F.D.S. September 26 | 14. 54 F.D.S. August 5 |
| 2. 'D' F.D.S. September 14 | 15. 3 (Ind.) C.C.S. July 29 |
| 3. 4 C.C.S. September 13 | 16. 132 Fd. Amb. August 12 |
| 4. 52 F.D.S. September 14 | 17. 52 F.D.S. July 22 |
| 5. 'D' F.D.S. September 2 | 18. 54 F.D.S. July 22 |
| 6. 'E' F.D.S. September 10 | 19. 1 (N.Z.) C.C.S. July 22 |
| 7. 52 F.D.S. September 9 | 20. 3 (Ind.) C.C.S. July 22 |
| 8. 54 F.D.S. August 5 | 21. 4 C.C.S. July 22 |
| 9. 'E' F.D.S. August 29 | 22. 132 Fd. Amb. July 27 |
| 10. 1 (S.A.) C.C.S. August 5 | 23. 54 F.D.S. July 15 |
| 11. 52 F.D.S. August 5 | 24. 132 Fd. Amb. July 22 |
| 12. 'D' F.D.S. August 28 | 25. 52 F.D.S. July 15 |
| 'E' F.D.S. September 2 | |

San Benedetto in Alpe; (2) along the 'Arrow' route at Razzolo, Crespino and Palazzuolo di Romagna and (3) along the 'Ace' route at Scarperia, Il Giogo and Firenzuola.

1st Division took over the Monte Grande position from the Americans. To serve it a F.S.U. was attached to 2 Fd. Amb. at Villa di Sassonero. Later a second F.S.U. and a F.T.U., together with 16 O.Rs.

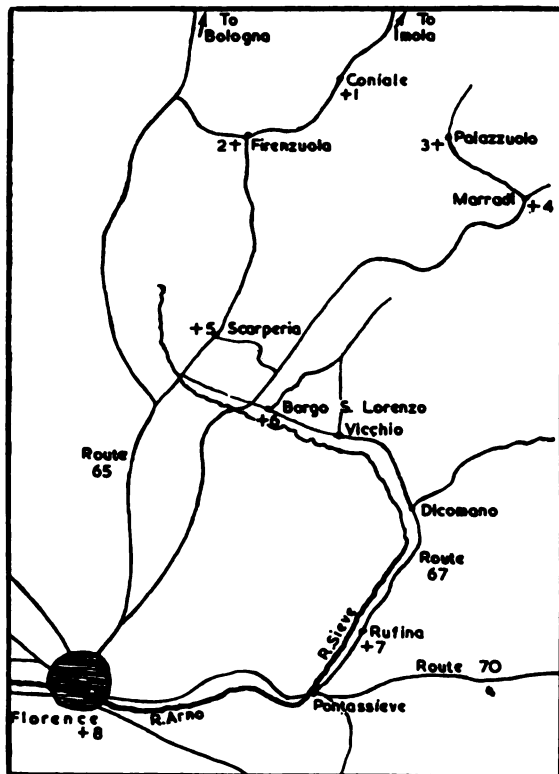


FIG. 105. XIII Corps Medical Units. September–November 1944.

- | | |
|-----------------------------------|---------------------------------|
| 1. A.S.C. September 30 | 6. 4 C.C.S. September 30 |
| 52 F.D.S. November 26 | 8 C.C.S. October 30 |
| 2. 56 F.D.S. November 29 | 3 (Ind.) C.C.S. October 1 |
| 3. A.S.C. September 30–November 1 | 55 F.D.S. October 7 |
| 4. 3 (Ind.) C.C.S. October 30 | 7. 52 F.D.S. September 30 |
| 8 C.C.S. October 27 | 8. 3 (Ind.) C.C.S. September 30 |
| 5. 8 C.C.S.: November 27 | 55 F.D.S. September 30 |

of a F.D.S., were attached to this field ambulance. This A.S.C. served 78th and 6th Armd. Divisions also. By the time heavy snow fell in November there had been created accommodation for 500 cases behind Indian 8th Division in the Marradi sector, for 100 at Coniale and for 150 at Firenzuola, where 52 F.D.S. opened early in December. 3 (Ind.)

C.C.S. replaced 8 C.C.S. at Marradi and 8 C.C.S. after a brief rest opened in Scarperia.

When Indian 8th Division, early in December, entered Casola Valsenio on the Marradi-Castel Bolognese road, 35 F.S.U. was sent forward on mules in order that 'early' surgery might be available.

When, in mid-December, 78th Division and 6th Armd. Division were fighting in the area of Tossignano and Monte Maggiore there were many casualties. 78th Division's casualties were handled by 6th Armd. Division's field ambulance at Casola Valsenio over a wire ropeway bridge over the Santerno to Fontanelice whence they were taken to Coniale on the Firenzuola-Imola road.

At the beginning of 1945, 1st Division was occupying Monte Grande, 78th Division was in the mountainous country south of the S. Clemente-Castel San Pietro road, and 6th Armd. Division was holding the right flank of XIII Corps from north of the Castel del Rio-Fontanelice road, around Borgo di Tossignano, Tossignano and over the hills to Casola Valsenio. But soon 1st Division left XIII Corps for another theatre and U.S. units took over the Monte Grande position. Early in February 78th Division was relieved by Indian 10th Division and the Folgore Gruppi joined XIII Corps to relieve 6th Armd. Division.

During the period January-March there was no significant modification of the medical arrangements already in force.

X CORPS

X Corps was not involved in any operation in Italy during the winter months. Corps troops with various formations entering the Corps rested and trained around Macerata. Then Operational H.Q. of X Corps (Greekmil) assumed responsibility for operations against E.L.A.S. shortly after the outbreak of hostilities in Greece. By the middle of February 1945, X Corps troops returned to Italy. At the beginning of March, Main H.Q. X Corps, accompanied by detachments of corps troops, moved to an area south of Faenza and prepared to take over the southern portion of the sector held by the Polish Corps. Until the final battle opened X Corps, with the Italian Friuli Gruppo, the Jewish Bde. and Corps troops, was engaged in active patrolling.

MEDICAL COVER

1ST ARMD. DIVISION

This division reached Italy from North Africa in May, 1944, and was first of all concentrated around Altamura, Matera and Gravina. It consisted of H.Q., divisional troops and 2nd Armd. Bde. The attached medical units were 1 Lt. Fd. Amb., 69 Fd. Hyg. Sec. and 4 and 79 M.C.U.s. Later it was joined by 18th Inf. Bde. and 43rd Gurkha Lorried Inf. Bde. together with 226 Fd. Amb., 3 (Ind.) Lt. Fd. Amb. and 89 M.C.U.

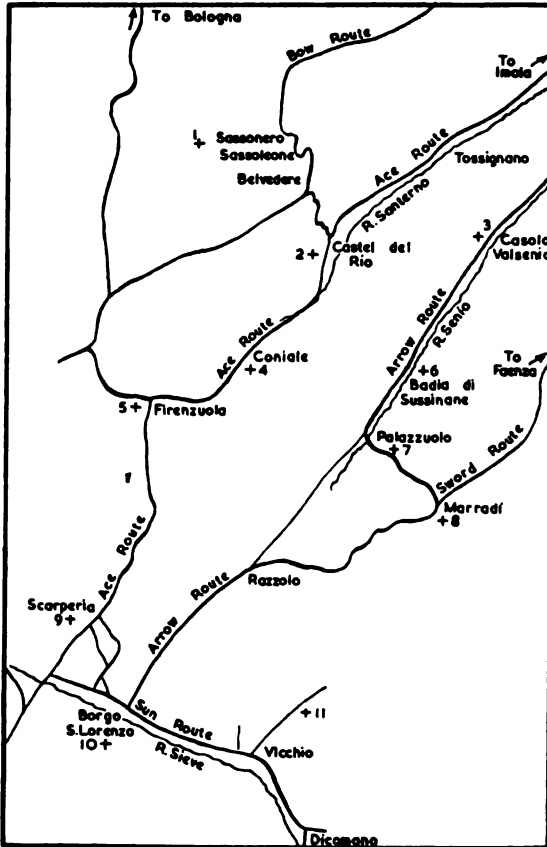


FIG. 106. XIII Corps Medical Units. January-March 1945.

- | | |
|--|--------------------------------|
| 1. A.S.C. Detach. 52 F.D.S. January 1-18 | 7. 517 Ital. Fd. Hosp. March 7 |
| 2. Detach. 52 F.D.S. and Italian Fd. Hosp. | 8. 3 (Ind.) C.C.S. January 1 |
| 3. A.S.C. 55 F.D.S. January 1 | 4 C.C.S. February 2 |
| 4. 56 F.D.S. January 1 | 9. 8 C.C.S. January 1 |
| 52 F.D.S. January 18 | 10. 55 F.D.S. January 1 |
| 5. 52 F.D.S. January 1 | 4 C.C.S. January 1 |
| 56 F.D.S. January 18 | 3 (Ind.) C.C.S. February 12 |
| 6. 55 F.D.S. February 27 | 56 F.D.S. February 27 |
| | 516 Ital. Fd. Hosp. March 7 |
| | 11. 13 Fd. Hyg. Sec. January 1 |

Not until September was the division involved in the northward advance. On September 4, 2nd Armd. Bde. took over the area south-west of S. Savino-Passano ridge, to the south-west of Coriano, inland from Cattolica, captured by 46th Division between 56th Division on its left and Canadian I Corps on the right. Attacking at once between S. Clemente and Castelleale, it encountered unexpectedly stout resistance.

18th Inf. Bde. was therefore committed, but it also was checked. The tactical plan was then changed. 43rd Bde. on the right and 18th Bde. on the left attacked synchronously, the first attacking Passano, the second San Savino. These objectives were captured and consolidated on September 14.

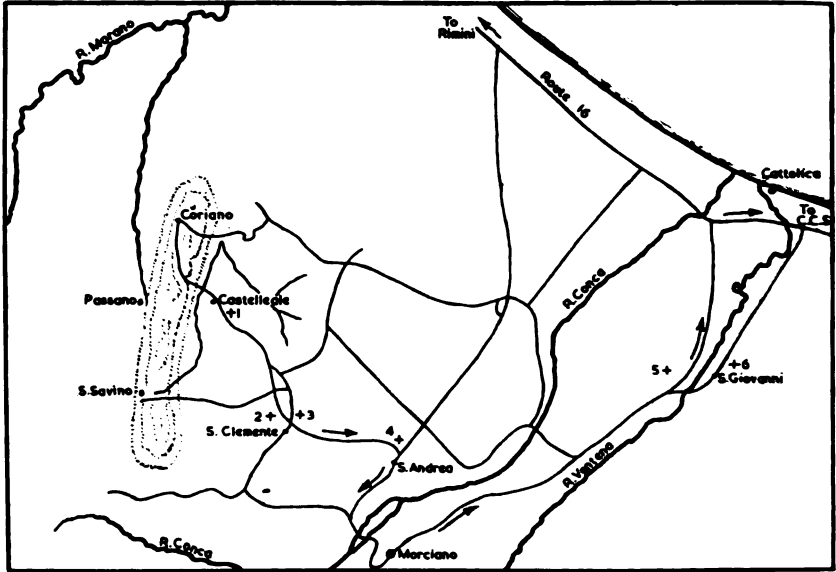


FIG. 107. 1st Armoured Division. The Attack on the San Savino-Passano-Coriano Feature. Medical Cover.

- | | |
|---------------------------------|-------------------------|
| 1. C.C.P. 3 (Ind.) Lt. Fd. Amb. | 4. A.D.S. 226 Fd. Amb. |
| 2. " " " | 5. C.P. H.Q. 112 M.A.C. |
| 3. C.P. | 6. 2 (Cdn.) F.D.S. |

226 Fd. Amb. established an A.D.S. well forward, at the junction of the two axes on which 18th and 43rd Bdes. were to advance. 'A' Coy. 226 Fd. Amb. was placed u/c 18th Inf. Bde. in support of the forward battalion. Elements of 2nd Armd. Bde. were put u/c 18th Inf. Bde. and were supported by two sections of 1 Lt. Fd. Amb. The A.D.Ss. of 3 (Ind.) Lt. and 1 Lt. Fd. Amb. remained closed and on wheels. Two sections of 3 (Ind.) Lt. Fd. Amb. were placed u/c 43rd Bde. Thirteen A.F.S. and sixteen M.A.C. cars were placed at the disposal of A.D.M.S. by D.D.M.S. V Corps. The distribution of the medical units during this action is depicted in Fig. 107.

It was arranged that Priority cases should be sent to 2 (Cdn.) F.D.S. at S. Giovanni in Marignano whence evacuation would be down the lateral route to the coast and on to the Corps C.C.Ss. Then, on September 15, the Gurkha brigade was involved in the attack upon the Ripabianca ridge and the crossing of the Marano. The distribution of the

medical units during these events is shown in Fig. 108. In order to help 2 (Cdn.) F.D.S. in its care of Gurkha patients an interpreter and cooks were attached by A.D.M.S. 1st Armd. Division to this medical unit.

On September 16, V Corps established a F.D.S. in Morciano and this thereafter received all Priority cases. On the 18th, 18 C.C.S. opened in Morciano.

The Ripabianca feature was captured and consolidated by September 17. In this action a light field ambulance was used in support of an infantry brigade. But because this medical unit was an Indian and not a British field ambulance adequate personnel were available for employment as stretcher-bearers.

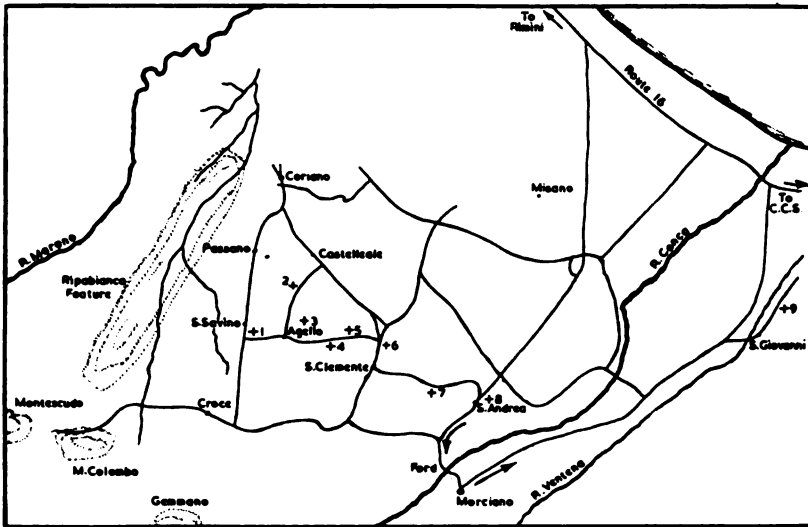


FIG. 108. 1st Armoured Division. Ripabianca. Medical Cover.

- | | |
|---------------------------------|--------------------------|
| 1. C.C.P. 1 Lt. Fd. Amb. | 6. C.C.P. 226 Fd. Amb. |
| 2. A.D.S. 3 (Ind.) Lt. Fd. Amb. | 7. C.C.P. 1 Lt. Fd. Amb. |
| 3. A.D.S. 226 Fd. Amb. | 8. A.D.S. 1 Lt. Fd. Amb. |
| 4. C.C.P. 226 Fd. Amb. | 9. 2 (Cdn.) F.D.S. |
| 5. C.C.P. 226 Fd. Amb. | |

On September 22 the division was engaged in the crossing of the Marecchia and the capture of Sant' Arcangelo. 18th Inf. Bde. took over the area occupied by 28th Inf. Bde. of 4th Division and two sections of 226 Fd. Amb. were sent up in support. 43rd Bde. crossed the Marecchia on the night of September 22/23. It was served by 3 (Ind.) Lt. Fd. Amb. The evacuation chain for this action is shown in Fig. 109; 1st Armd. Division lost 2nd Armd. Bde. and other units and its responsibility for the battle passed to 56th Division.

A general plan of the rearward evacuation throughout the three actions described above is shown in Fig. 109.

6TH ARMD. DIVISION

6th Arm'd. Division, operating north-east of S. Benedetto in Alpe, found itself in very mountainous country abounding in high peaks, deep gorges and swift-flowing streams. Snowfalls were heavy and every night was attended by heavy frost. The rôle of the division therefore became to a large extent that of an infantry division, while the field ambulances no longer moved forward in great leaps but were called upon to cope with the problems of evacuation in one of the most mountainous areas in Italy under most trying climatic conditions.

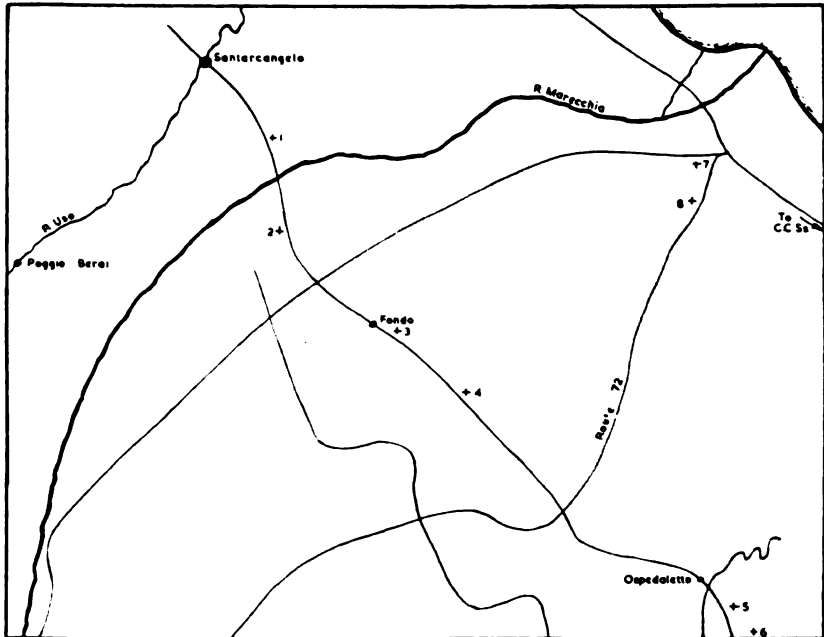


FIG. 109. 1st Armoured Division. The Crossing of the Marecchia and the Attack on Sant' Arcangelo. Medical Cover.

- | | |
|---------------------------------|-----------------------------|
| 1. C.P. 3 (Ind.) Lt. Fd. Amb. | 5. A.D.S. 1 Lt. Fd. Amb. |
| 2. C.C.P. " | 6. A.D.S. 226 Fd. Amb. |
| 3. C.P. 1 Lt. Fd. Amb. | 7. F.D.S. |
| 4. A.D.S. 3 (Ind.) Lt. Fd. Amb. | 8. C.P. 'C' Pln. 112 M.A.C. |

To begin with the divisional axis was along Route 67 on the road to Forli. Small actions were continually fought as the brigades advanced from one hill summit to the next.

Until the high ground north of Dicomano, on Route 67, was reached, ambulance cars were always able to reach the R.A.Ps., evacuation being through an A.D.S. to the battle M.D.S. where triage was practised. Priority I and II cases were evacuated to the forward Corps F.D.S.

which acted as an A.S.C. Priority III cases and major sick were sent to a C.C.S. and minor sick to the divisional C.R.S.

North of Dicomano mules and S.Bs. were required for evacuation from the R.A.Ps. to a C.C.P. which was sited at the jeephead. North of S. Benedetto in Alpe, on Route 67, the mule or S.B. carry took from two to four hours. 14 Fd. Amb. established a M.D.S. in this town and to this a F.S.U. and a F.T.U. were attached. Ambulance cars, when actually carrying patients, flew a Red Cross pennant and were given absolute priority by the C.M.P. along the evacuation route.

The divisional wireless net linked up A.D.M.S. Division with S.M.Os. brigades and R.A. and M.D.Ss. of the three field ambulances. O.C. field ambulance acted as S.M.O. brigade and was centred on Bde. H.Q. The second-in-command of the field ambulance actually commanded the M.D.S. The M.D.S. was u/c division when opened. When in an advance the armoured brigade led, a light field ambulance was placed under its command, one heavy field ambulance u/c the leading infantry brigade, one company of a heavy field ambulance u/c the remaining infantry brigade, while one heavy field ambulance, less one company, remained u/c division. When the infantry brigades were in the lead, one heavy field ambulance was u/c the leading brigade, two companies of a heavy field ambulance u/c the second brigade, four sections of a light field ambulance u/c the armoured brigade and one heavy field ambulance, less two companies, and a light field ambulance, less four sections, remained u/c division. When one infantry brigade was in the lead and was followed by the armoured brigade, one heavy field ambulance was u/c the leading brigade, one light field ambulance u/c the armoured brigade, one company of a heavy field ambulance u/c the second infantry brigade and one heavy field ambulance, less one company, u/c division.

On October 3, 1 Fd. Amb. with 1st Gds. Bde. passed under direct command XIII Corps and moved to a new axis—Firenzuola—Castel del Rio (on the Firenzuola—Imola road)—and 1 Fd. Amb. with two F.S.Us. and one F.T.U. opened a battle M.D.S. at Coniale. Then the whole division moved on to this new axis and 165 Lt. Fd. Amb. took over from 14 Fd. Amb. in S. Benedetto and 14 Fd. Amb. moved to Scarperia to form a 60-bed C.R.S. for the divisional sick. Evacuation was now from the A.D.S. of 1 Fd. Amb. by ambulance jeep to a car post at Castel del Rio and thence by ambulance car to the M.D.S. of 1 Fd. Amb. at Coniale. Thence Priority I and II cases were sent to 4 C.C.S. at Borgo S. Lorenzo and minor cases to the C.R.S. of 14 Fd. Amb. at Scarperia.

On November 4, the site of the battle M.D.S. of 1 Fd. Amb. was taken over by 56 F.D.S. (Corps) and 1 Fd. Amb. moved with 1st Gds. Bde. to establish an A.D.S. at Cortine and a M.D.S. at Palazzuolo di

Romagna, to which a light section of 33 (Ind.) Fd. Amb. was attached to deal with Indian 8th Division casualties.

On November 5, 165 Lt. Fd. Amb. moved to the vicinity of Florence to establish a 50-bed C.R.S. to serve 26th Armd. Bde. On the 16th, 1st Gds. Bde. began to be relieved by Indian 8th Division. 1 Fd. Amb. gave place to 29 (Ind.) Fd. Amb. and moved to a rest area at Greve to establish a 20-bed C.R.S.

On November 21, 1st Gds. Bde. took over the Monte Acqua Salata feature from 78th Division and 1 Fd. Amb. took over the sites of 11 Fd. Amb's. car posts and A.D.S. For the next few weeks the climatic conditions in this sector were exceedingly bad and many extra S.Bs. were needed for evacuation from R.A.P. to jeephead. Evacuation was to the M.D.S. of 217 Fd. Amb. of 78th Division at Castel del Rio and commonly took as long as twelve hours. On November 25, 14 Fd. Amb. closed at Scarperia and moved to Castel del Rio to establish a 50-bed C.R.S. By mutual arrangement all battle casualties from 6th Armd. and 78th Divisions passed through the M.D.S. of 217 Fd. Amb. and all sick through the M.D.S. of 14 Fd. Amb.

On December 4, 1st Gds. Bde. attacked and captured Monte Penzola. This enabled evacuation to be greatly shortened by the use of a steel cableway across the Santerno.

During these most difficult times much was learnt about the mule and its employment in evacuation. The need for calm and steady animals came to be appreciated, as did also the need for their training and control. It was discovered that every mule had to be exercised each day, carrying two S.Bs. in the cacolets for at least one journey of a thousand yards, the drill of loading and unloading being practised assiduously both by day and by night. It was learnt that the mule's head and each of the cacolets had to be controlled and that one mule team of three S.Bs. and one muleteer should regularly be associated with one and the same mule. To load a mule two teams were necessary.

The value of the stretcher-bearer chain also came to be appreciated. A chain consisted of a series of squads of eight S.Bs. about three hundred yards apart, 50 S.Bs. being required for each mile. If the chain was long, an administrative centre was established at or near the rear end of the track. When the track was steep and slippery the casualties were securely tied to the stretcher at the R.A.P. with three-inch bandages at the shoulder, hip and ankle. In the case of a head injury case it was found desirable to immobilise the patient with a universal stretcher sheet (one of which was kept at the R.A.P.)

In January 1945, 1 and 14 Fd. Ambs. were reorganised according to the 1942 Field Ambulance Establishment (11/298/1) and 165 Lt. Fd. Amb. was converted from a light field ambulance class E to a light field ambulance (W.E. 11/291/1).

The distribution of the field ambulances remained more or less unchanged until the division went into Army reserve in March. 14 Fd. Amb. had its A.D.S. at Fontanelice, H.Q. 14 Fd. Amb. ran a C.R.S. at Castel del Rio and H.Q. 1 Fd. Amb. ran a C.R.S. at Greve. Snow covered all the forward positions and stretcher sledges were used. Casualties were few.

On January 9, 1 Fd. Amb. took over the A.D.S. at Fontanelice on the Firenzuola–Imola road and 217 Fd. Amb. of 78th Division the site of the C.R.S. at Castel del Rio. 14 Fd. Amb. moved to the Marradi–Palazzuolo–Casola Valsenio route, harbouring in the vicinity of Marradi. 'B' Coy. 14 Fd. Amb. moved forward to Casola Valsenio, taking over the A.D.S. of 29 (Ind.) Fd. Amb. to establish an A.S.C. in support of 61st Inf. Bde. 'A' Coy. 14 Fd. Amb. took over the A.S.C. at Marradi from 3 (Ind.) C.C.S. while H.Q. 14 Fd. Amb. established a M.D.S. and an A.D.S. at Palazzuolo.

When the division moved to its concentration area south of Rimini a company of 1 Fd. Amb. moved with 1st Gds. Bde. to Spoleto. 14 Fd. Amb. moved with 61st Inf. Bde. to Cattolica and 1 Fd. Amb. to Fermo. A.D.M.S., 3 Lt. Fd. Hyg. Sec., 156 M.D.U. and 49 M.C.U. moved to Riccione on March 10.

1 Fd. Amb. established an A.D.S. at Porto S. Giorgio and a 50-bed C.R.S. at Montegranaro, 14 Fd. Amb. opened an 80-bed C.R.S. at Cattolica and 165 Lt. Fd. Amb. a 60-bed C.R.S. at Pesaro.

4TH DIVISION

On September 12, 4th Division, with 25th Tk. Bde. under command, took over from Canadian 5th Armd. Division and, with Canadian 1st Division, was assigned the task of breaking through between Rimini and the line Coriano–Ospedaletto–San Martino. On September 23, the division went into Canadian I Corps reserve. On October 1 it passed under command V Corps and on the 19th relieved 46th Division on the line of the Savio and thereafter took part in the operations of V Corps in the advance along Route 9 to Faenza. On November 26 it was relieved by N.Z. 2nd Division on the line of the Lamone and moved to the area of Vasto where it handed its transport to 5th Division. It then moved to the Taranto area to embark, on December 12, for Greece, there to undertake internal security duties.

For the crossing of the Marano 12 Fd. Amb. opened an A.D.S. and a M.D.S. to serve 12th Inf. Bde. Then 28th relieved 12th Bde. and 159 Fd. Amb. served this brigade. Then for the final attack on S. Fortunato 10th Inf. Bde. went into the line and 10 Fd. Amb. established its M.D.S. from which evacuation was to 4 and 5 (Cdn.) C.C.Ss. at Cattolica, sick to 5 Lt. Fd. Amb. also at Cattolica. Five Canadian M.A.C. cars were allotted to each of the field ambulances.

During the advance to Faenza the field ambulances, leap-frogging, established M.D.Ss. in succession at :

Montiano . . .	12 Fd. Amb.	October 19-23
Cesena . . .	10 " "	" 23-November 1
Forlimpopoli . . .	5 Lt. Fd. Amb. (attached 25th Tk. Bde.)	November 1-14
Forli . . .	159 Fd. Amb.	" 14-24
Forli . . .	5 Lt. Fd. Amb.	" 24-26

Evacuation therefrom was by 'C' pln. 112 M.A.C. to

- (1) 57 F.D.S. at Rimini
- (2) 5 C.C.S. Sant' Arcangelo
- (3) 58 F.D.S. }
1 C.C.S. } Cesena
- (4) 57 F.D.S. }
5 C.C.S. } Forli

At the crossing of the Savio the lack of bridges and enemy fire made evacuation from the A.D.S. at Cesena difficult. When the Ronco was reached, R.A.Ps. were established on the west bank of the river. The bridge in this sector was washed away and so casualties had to be evacuated by way of the causeway in Indian 10th Division's sector. Flying ferries also had to be used. In the forward areas only jeep ambulances and four-wheel-drive ambulance cars could be used.

46TH DIVISION

46th Division (128th, 138th and 139th Inf. Bdes.) with 183, 184 and 185 Fd. Ambs., 15 Fd. Hyg. Sec. and 139 M.D.U. attached, returning from the Middle East, was concentrated in an area south-west of Bevagna in July. Thereafter it became involved in the assault upon the Gothic Line, with 56th Division on its right and Indian 4th Division on its left. In its sector tracks and third class roads were numerous so that ambulance jeeps and four-wheel-drive ambulance cars could reach the R.A.Ps. When this was not possible a car post was established as far forward of the A.D.S. as possible. A typical distribution of the divisional medical units (as on August 30) is shown in Fig. 110.

Following the breaking of the Gothic Line the division assumed a holding rôle, clearing the roads for the passage of Canadian 5th Armd. Division on September 5. On the 19th the division went into the line on the Gemmano feature and thereafter crossed the Conca, Marano, Ausa, Marecchia and Rubicone Rivers.

A typical distribution of the divisional medical units during this period (as on September 17) is shown in Fig. 111. At this time there was a shortage of F.D.Ss. and so the old organisation of A.D.S. and M.D.S. was adopted. One M.D.S. was established fairly far forward for battle

casualties and another M.D.S. was opened in the rear of the divisional area to deal with the sick. Priority cases were evacuated to a F.D.S. and non-priority battle cases to the C.C.S. But since the field ambulances were on the new W.E. 11/298/1 there was a shortage of N.Os. in the M.D.S. and a shortage of transport. Extra 3-ton lorries had to be provided.

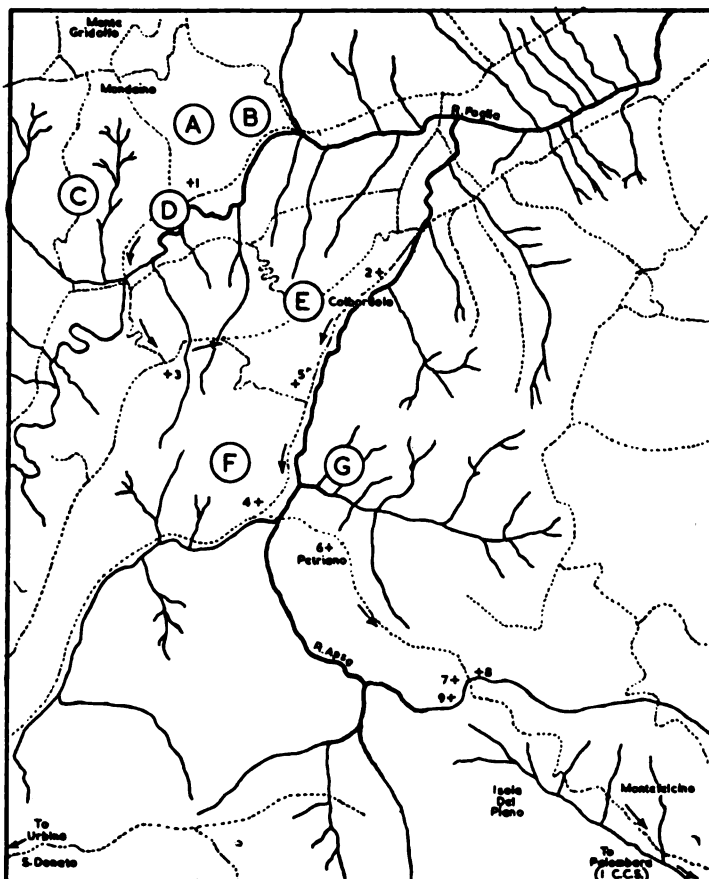


FIG. 110. 46th Division. Medical Cover. August 30, 1944.

A. 1/4th Hamps.

B. 2nd Hamps.

C. 2/5th Leicesters

D. 5th Foresters

1. A.D.S. 184 Fd. Amb.

2. A.D.S. 185 Fd. Amb.

3. A.D.S. 183 Fd. Amb.

4. A.D.S. 183 Fd. Amb.

5. Car Post

E. 138th Bde.

F. 16th D.L.I.

G. 5th Hamps.

6. Cab-rank

7. 15 Fd. Hyg. Sec.

8. A.D.M.S.

9. M.D.S. 183 Fd. Amb.

In the forward area each R.A.P. had a stretcher-jeep and an A.F.S. car and two squads of field ambulance S.Bs. Often a light A.D.S. was staffed by as few as one officer and twelve O.Rs.

Heavy rain made the ground marshy and led to the bogging of vehicles. Each field ambulance had four stretcher-jeeps while the A.D.M.S. had a pool of six of these vehicles allotted to him for the division. C.R.E.M.E. provided metal stretcher gear on the basis of 7 per battalion, 5 per field regiment and 4 per field ambulance.

'G' F.D.S. and 10 and 25 F.S.U.s. and 26 F.T.U. were sited alongside the M.D.S. A platoon of 112 M.A.C. and 10 cars from 567 A.F.S.

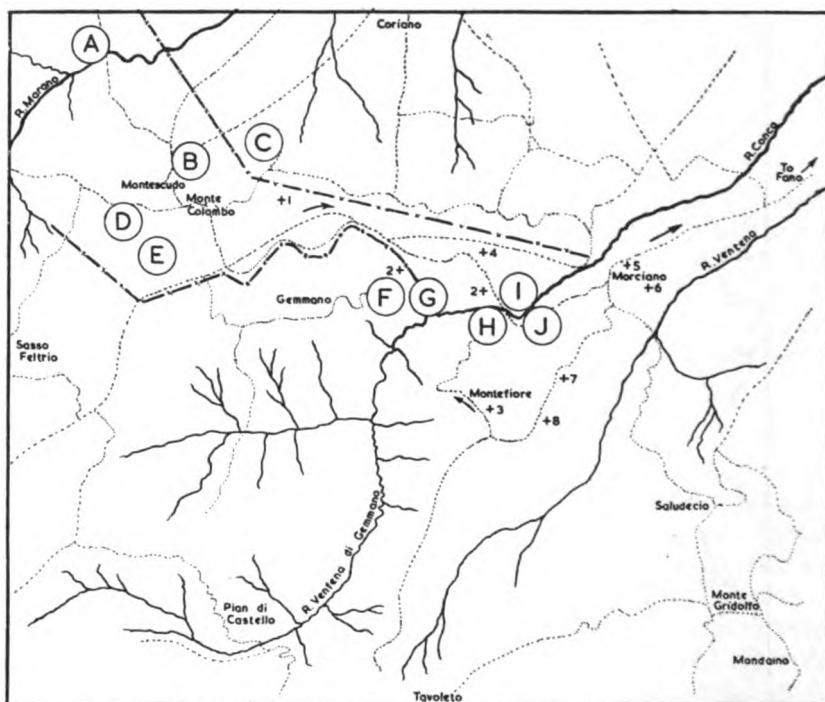


FIG. 111. 46th Division. Medical Cover. September 17, 1944.

- A. 6th Lincolns
- B. 1/4th Hamps.
- C. 46th Recce.
- D. 5th Hamps.
- E. 2nd Hamps

- F. 6th Y. & L.
- G. 2/4th K.O.Y.L.I.
- H. 16th D.L.I.
- I. 5th Foresters
- J. 2/5th Leicesters

- 1. A.D.S. 185 Fd. Amb.
- 2. A.D.Ss. 183 Fd. Amb.
- 3. A.D.S. 184 Fd. Amb.
- 4. M.D.S. 183 Fd. Amb.

- 5. 'G' F.D.S.
- 6. 18 C.C.S.
- 7. 15 Fd. Hyg. Sec.
- 8. A.D.M.S. 46th Division

Evacuation. A.D.S. to M.D.S. to either F.D.S. or C.C.S. and thence to Fano.

A.C.C. were used for rearward evacuation. W/T intercommunication linked up A.D.M.S. and the field ambulances.

Casualties. July-September

	<i>Officers</i>	<i>O.Rs.</i>
Battle Casualties	97	1,548
Sick	49	1,939

The Assault on the Gothic Line

	<i>Officers</i>	<i>O.Rs.</i>
Battle Casualties	44	634

56TH DIVISION

56th Division (167th, 168th and 169th Inf. Bdes.) with 140, 167 and 214 Fd. Amb., 51 Fd. Hyg. Sec., 25 A.M.C.U. and 163 M.D.U., returning from the Middle East concentrated in the Tivoli area and moved northwards to take part in the attack on the Gothic Line. It took over the vehicles and stores of 78th Division and joined V Corps at Assisi. Thence it moved to Sassoferrato. It was committed to attack Mondaino and Monte Gridolfo north of Urbino. On September 25, in consequence of the heavy losses that had been endured, 168th Inf. Bde. was disbanded and Indian 43rd Lorried Inf. Bde. from 1st Armd. Division and 3 (Ind.) Lt. Fd. Amb. came under command.

During October and November the division was resting in the Macerata area. On December 3, 167th and 169th Bdes. with 167 and 214 Fd. Ambs., 51 Fd. Hyg. Sec. and 25 A.M.C.U. passed under command V Corps and moved to the Faenza sector. Thence it moved to the Forli area to have one brigade in the line and the other in reserve. On March 13, 24th Gds. Bde. joined the division from S.A. 6th Armd. Division; with it came 137 Fd. Amb.

For the attack on Monte Gridolfo one brigade went in, and to serve it 214 Fd. Amb. established an A.D.S. and a light A.D.S. When Mondaino was captured the A.D.S. moved into a building in the town. Another brigade passed through and 167 Fd. Amb. established an A.D.S. to serve it. The A.D.S. of 214 Fd. Amb. was then converted into a divisional dressing station by bringing forward its 'B' echelon.

During October-March the division was not involved in any major operation. When it was in the line one A.D.S. was provided and evacuation therefrom was to a F.D.S. or C.C.S. The other field ambulance provided a divisional rest station.

Battle casualties were few. During October-December 279 were evacuated; during January-March 713.

78TH DIVISION

78th Division (11th, 36th and 38th Bdes.) with 11, 152 and 217 Fd. Ambs. and 47 Fd. Hyg. Sec. was concentrated in the area of Lake

Trasimene holding the right flank of the line. It was being relieved by 4th Division and, on July 6, 78th Division moved to a concentration area north of Rome where it handed over its equipment and transport to 56th Division. It then proceeded to Taranto and embarked for Egypt. It returned to Italy on September 16 and moved to pass u/c XIII Corps then serving with U.S. Fifth Army.

During the winter months the division was in the Monte Grande area. During this period of relative inactivity evacuation was *via* brigade A.D.Ss. to the A.S.C. at Villa Sassonero, established by 2 Fd. Amb. of 1st Division. Major sick were sent to the M.D.S. of 217 Fd. Amb. at Castel del Rio and minor sick to the C.R.S. at Scarperia.

On January 9, 1st Division was relieved by U.S. 85th Division and in consequence the A.S.C. of 2 Fd. Amb. at Sassonero was closed. 11 Fd. Amb. therefore established a M.D.S. in place of its A.D.S. and to it 10 F.S.U. was attached. But this plan had to be abandoned owing to continued heavy shelling and the F.S.U. returned to Villa Sassonero to become attached to an American medical unit. Together with 28 F.S.U. it did, however, provide the facilities of an A.S.C.

78th Division was relieved by Indian 10th Division after February 6. 152 Fd. Amb. moved across to Forli, there to open a C.R.S. on February 9, and the division moved to the Bertinoro area to rest. 11 Fd. Amb. also opened a C.R.S. in Forli for minor sick. Evacuation was to 5 C.C.S. in Forli.

On March 8, 78th Division began to relieve 56th Division and 2nd Armd. Bde. came under command.

NEW ZEALAND 2ND DIVISION

New Zealand 2nd Division, having reduced its loads on transport to the uttermost limit, left the vicinity of Siena on August 26 and, travelling by night and without lights, moved *via* San Quirico, Torrita di Siena, Nottola, Castiglione del Lago along Route 75 through Perugia to the staging area at Foligno and over the mountains through Macerata to Iesi.

1 N.Z.G.H. moved up from Molfetta to Senigallia. The divisional medical units were concentrated, the M.D.S. of 5 (N.Z.) Fd. Amb. opening to receive sick and to evacuate to 1 Cdn.G.H. in Iesi or to 11 or 71 B.G.Hs. in P. Recanati and Loreto. The M.D.S. of 6 (N.Z.) Fd. Amb. ran a divisional rest camp on the beach where the road from Iesi joined the coast road.

The division, under command Canadian I Corps, moved forward to the vicinity of Fano on September 5. 4 (N.Z.) Fd. Amb., with 1 (N.Z.) F.S.U., 2 (N.Z.) F.T.U., 102 V.D.T.C. and 14 (N.Z.) Optician Unit attached, established a M.D.S. to serve the whole division.

It was at this time that infective hepatitis reached mild epidemic

proportions within the division, over 1,200 cases occurring in the three months September–November. 4 (N.Z.) Fd. Amb. evacuated the sick to 1 N.Z.G.H. in Senigallia. Further evacuation was by hospital ship from Ancona to 3 N.Z.G.H. at Bari or, rarely, to 2 N.Z.G.H. at Caserta by rail.

From September 13 onwards New Zealand units went into the line and the M.D.S. of 4 (N.Z.) Fd. Amb. moved twenty miles forward to establish itself amid the sand dunes at Cattolica.

N.Z. 5th Bde. went into the Canadian bridgehead across the Marecchia and took part in an attempt to clear the Rimini airfield on September 15. On the 22nd this brigade took over from Canadian 1st Division and advanced through and north of Rimini. The A.D.S. of 5 (N.Z.) Fd. Amb. served the brigade.

Then N.Z. 6th Bde. passed through with the A.D.S. of 6 (N.Z.) Fd. Amb. and advanced, after heavy fighting, to the cross-roads at Bordonchio. More than 200 casualties passed through the A.D.S. on the 24th and 25th. On September 26, N.Z. 6th Bde. was across the Uso and the A.D.S. moved up to Bordonchio.

The M.D.S. of 5 (N.Z.) Fd. Amb., with 1 (N.Z.) F.S.U., 2 (N.Z.) F.T.U. and the surgical team of 6 (N.Z.) Fd. Amb., was established in Riccione and between September 20–25 performed 144 operations. Evacuation was to 4 (Cdn.) C.C.S. near Riccione, 5 (Cdn.) C.C.S. at Cattolica or to 1 N.Z.G.H. at Senigallia. 1 (N.Z.) C.C.S., which had moved with the division, did not open.

On September 26, the M.D.S. of 4 (N.Z.) Fd. Amb. moved to the vicinity of Viserba, two miles to the north of Rimini, where it was joined by 1 (N.Z.) F.S.U., 2 (N.Z.) F.T.U. and the N.Z. Sec. M.A.C. In the next five days it dealt with 140 battle casualties and 209 sick. The winter mud made evacuation exceedingly difficult and R.M.Os. were obliged to make use of Bren carriers fitted with stretchers. These were found most useful; they could travel over country impassable even to the jeep, they offered protection both to driver and patient against small-arms fire and they were comfortable.

Since during these events New Zealand casualties were being sent to Canadian C.C.Ss. and since to these C.C.Ss. the surgical team of 1 (N.Z.) C.C.S. was attached, it became possible to contrast the surgical policies of the two medical services. In the Canadian C.C.S. the supervision of the patients in the pre-operative room was in the hands of the transfusion officer or of a G.D.O. In the N.Z. C.C.S. this responsibility lay with an experienced surgeon. In the Canadian C.C.S. the post-operative case was looked after by a ward medical officer; in the N.Z. C.C.S. this was undertaken by the surgeon who had performed the operation.

On October 4, the M.D.S. of 4 (N.Z.) Fd. Amb. with 1 (N.Z.) F.S.U.

and 2 (N.Z.) F.T.U. attached moved to Igiea Marina, an Italian children's hospital just south of Bellaria. To it were evacuated casualties from the R.A.Ps. direct. On the 5th a surgical team from 1 (N.Z.) C.C.S. joined this M.D.S., bringing with it equipment for a 50-bed ward, a X-ray truck and six N.Os. During the next seven days it admitted 84 battle casualties and 238 sick.

On October 10, the division moved to the adjacent western sector previously held by the Canadians. The M.D.S. remained at Igiea Marina, receiving cases from the A.D.S. of 5 (N.Z.) Fd. Amb. some three to four miles due west.

On October 11, N.Z. 5th Bde. crossed the Fiumicino to occupy the town of Gatteo. Sant' Angelo in Salute was cleared by the Maoris, Gambettola, Bulgarno and Ruffio, all to the north of Savignano, were taken and the line of the Pisciatello was reached. This river line was crossed on the night of October 18/19 and N.Z. 4th Armd. Bde. moved forward to the line of the Savio.

The M.D.S. of 6 (N.Z.) Fd. Amb. opened in San Mauro and 1 (N.Z.) C.C.S. replaced the M.D.S. of 4 (N.Z.) Fd. Amb. at Igiea Marina. New Zealand head, maxillo-facial and eye cases were evacuated to 83 B.G.H. at Riccione and 59 B.G.H. at Fano staged cases *en route* for 1 N.Z.G.H. at Senigallia.

On October 22, the division was withdrawn to the area of Fabriano for reorganisation and training. The M.D.S. of 4 (N.Z.) Fd. Amb. opened in Fabriano and the M.D.S. of 6 (N.Z.) Fd. Amb. in Castelraimondo to serve the division.

The New Zealand field ambulances were now re-organised, the H.Q. company being increased by 34 O.Rs. to make a complete M.D.S., 'A' company being reduced to 3 officers and 42 O.Rs. to become a permanent A.D.S., and 'B' company being eliminated. There was a saving of 35 O.Rs. in each field ambulance.

New Establishment N.Z. Fd. Amb.

	Offrs.	W.O.1	W.O.2	S/Sgts.	Sgts.	L/Sgts.	Cpls.	O.Rs.
H.Q. Coy.	7	1	1	1	8	1	9	79
A.S.C. att. H.Q. Coy.	1	—	1	—	1	—	4	40
'A' Coy.	3	—	—	1	2	—	4	35
A.S.C. att. 'A' Coy.	—	—	—	—	—	—	1	11
Dental att. H.Q. Coy.	11	1	2	2	11	1	18	165
Coy.	1	—	—	—	—	—	2	—

On November 23, the division moved into the line again along the Lamone astride Route 9, with N.Z. 5th Bde. on the left and N.Z.

6th Bde. on the right. With these brigades were the A.D.Ss. of 5 and 6 (N.Z.) Fd. Ambs. The M.D.S. of 5 (N.Z.) Fd. Amb. was open in Forli for battle casualties and the M.D.S. of 6 (N.Z.) Fd. Amb. for sick. 4 (N.Z.) Fd. Amb. was closed and in reserve. 1 (N.Z.) C.C.S. opened in Forli in school buildings.

On the night of December 10/11, N.Z. 5th Bde. passed through 46th Division's bridgehead across the Lamone to the south-west of Faenza and attacked towards Faenza. This town was captured on the 16th.

The A.D.S. of 5 (N.Z.) Fd. Amb. was established across the Lamone and strengthened by the addition of extra jeeps and A.F.S. cars. Because it was in direct view of the enemy a 40' x 40' Red Cross sign was displayed. A car post was established by 4 (N.Z.) Fd. Amb. at the farthest point forward reachable by two-wheel-drive ambulance cars, six miles behind the A.D.S. 46th, Indian 10th and N.Z. 2nd Divisions were all sharing one route of supply and evacuation and there was much traffic congestion. A.D.M.S. N.Z. 2nd Division controlled the evacuation from all three divisions. Casualties were congregated at the A.D.S. of 5 (N.Z.) Fd. Amb., formed into a convoy at the start of the 'down' route and brought through to a car post at the head of the two-way traffic route where they were transferred to two-wheel-drive ambulance cars, the four-wheel-drive ambulance cars being retained for the forward work.

The first casualties from the R.A.Ps. reached the A.D.S. of 5 (N.Z.) Fd. Amb. at 0100 hours on December 15. The evacuation route was open at 0130 hours and three A.F.S. car loads were sent on, one car load was sent off at 0300 hours and five more at 0730 hours. Thereafter the road was closed for Polish II Corps up-traffic. However, ten ambulance car-loads were allowed to pass down it at 1400 hours. It was opened again at 1615 hours when 70 Priority cases were evacuated.

Between December 11-17, 191 battle casualties and 24 sick passed through the car post of 4 (N.Z.) Fd. Amb.

On the 16th the A.D.S. of 5 (N.Z.) Fd. Amb. moved nearer to Faenza and the M.D.S. of 4 (N.Z.) Fd. Amb. into a bank in Faenza on the 17th. Evacuation was by Route 9 to 1 (N.Z.) C.C.S. for New Zealand troops, to 57 F.D.S. for Priority British and Indian cases, to 5 C.C.S. for British non-Priority and to 9 (Ind.) C.C.S. for non-Priority Indian cases.

On the night of December 19/20, N.Z. 6th Bde. with 43rd Gurkha Lorried Inf. Bde. attacked and threw the Germans back to the line of the Senio. The reorganised 'A' Coy. of 6 (N.Z.) Fd. Amb. served the New Zealand brigade and dealt with over 100 casualties in ten hours. The M.D.S. of 4 (N.Z.) Fd. Amb. admitted 102 battle casualties between midnight and 0800 hours.

Evacuation was still to Senigallia by M.A.C. Evacuation by rail from

Senigallia to Caserta was not satisfactory, the convoys being infrequent and being commonly delayed, and New Zealand patients were admitted to British hospitals in Rome. At Bari 3 N.Z.G.H. acted as the base hospital for the New Zealand Expeditionary Force in Italy, accumulating cases awaiting hospital ship. The N.Z. Con. Depot had its H.Q. in Senigallia and a detachment at San Spirito. An advanced section of the Medical Stores moved up to Senigallia from Bari in October.

During these winter months, as mentioned above, 1 N.Z.G.H. was much occupied with the problem of infective hepatitis, 1,139 cases being admitted during the period October–December. Filtrate material was sent to the American Virus Commission and the epidemiological work carried out in the hospital constituted the stimulus that initiated the investigation undertaken at 15 B.G.H. in Cairo which added so greatly to the knowledge relating to the nature and mode of spread of this disease.

The division continued in the line in a purely holding rôle during January and February of 1945. On February 1 'A' Coy. 4 (N.Z.) Fd. Amb. passed to the command of the newly formed 9th Inf. Bde., comprising 22nd and 27th Bns. and the Divisional Cavalry, and with this brigade moved to Fabriano. In March the division left the line for the rest area about Fabriano, being relieved by 5th Kresowa Division, and N.Z. 4th Armd. Bde. with 4 (N.Z.) Fd. Amb. went to Cesenatico. 1 (N.Z.) C.C.S. remained in Forli, closed.

INDIAN 4TH DIVISION

When the plan of attack upon the Gothic Line was changed, X and XIII Corps were assigned holding rôles. Indian 4th Division was withdrawn from X Corps on August 7 and Indian 10th Division took over the whole of the line in X Corps sector.

Indian 4th Division, leaving X Corps, moved back to Eighth Army concentration area three miles to the south-east of Lake Trasimene and on August 17 passed to the command of V Corps. It then moved to the Fossato area, about forty miles south-west of Ancona.

One company of a field ambulance was attached to each brigade as and when required. Such a company usually formed two A.D.Ss., a light A.D.S. receiving casualties brought back by the S.Bs. and a main A.D.S. at the roadhead. H.Q. and three companies (field ambulance) were held in reserve by A.D.M.S. Division. One company 17 (Ind.) Fd. Amb. was allotted to Ind. 7th Inf. Bde.; one company 26 (Ind.) Fd. Amb. to Ind. 5th Inf. Bde. and one company 32 (Ind.) Fd. Amb. to Ind. 11th Inf. Bde. Hy. Sec. 9 (Ind.) C.C.S. opened in Scheggia on Route 3, north of Gubbio, on August 24.

The problems of evacuation were greatly aggravated by the flooded rivers, by the demolished roads and bridges and by the inclemency of

the weather. Owing to the relatively short evacuation line the A.D.Ss. were given the option of sending casualties either to the F.D.S. or else direct to the C.C.S. Thus the M.D.S. lost much of its importance and came to deal only with the minor sick and non-Priority battle casualties. Its personnel, therefore, became available for employment as S.Bs.

On August 25, the division moved up to the line of the Metauro near Fossombrone (Ind. 5th Inf. Bde.) and about Acqualagna (Ind. 7th Inf. Bde.), both on Route 3. During the night of August 25/26, Ind. 5th Inf. Bde. crossed the Metauro and occupied the south-eastern end of Cesena Ridge. On the 26th, Ind. 7th Inf. Bde. occupied Fermignano and on the following day crossed the Metauro to occupy Urbino.

On August 29, Ind. 5th Inf. Bde. reached the Foglia and crossed this river during the night to occupy the hill village of Monte della Croce without opposition. On the 30th the advance was continued but was checked at Monte Calvo. However, on August 31 Monte Calvo was captured and the advance toward Tavoleto resumed. By the evening of September 1, Ind. 5th Inf. Bde. was within a thousand yards of this village.

Ind. 7th Inf. Bde. crossed the Foglia on September 2 and advanced to the village of Auditore. Ind. 11th Inf. Bde. then relieved Ind. 5th Inf. Bde. in front of Tavoleto and after severe fighting occupied the place. Ind. 7th Inf. Bde. occupied Poggio San Giovanni on the 5th and on the following day captured Monte San Giovanni.

Heavy rainfall now contributed greatly to the difficulties that confronted Indian 4th Division in its next task, that of securing the Pian di Castello feature. On the night of September 5/6, Ind. 11th Inf. Bde. by-passed the village of Castelnuovo to secure objectives beyond it. Then, on the 6th, the village was attacked and captured. On the left of Ind. 11th Inf. Bde., Ind. 7th Inf. Bde. fought its way into the village of Pian di Castello on September 7. Its losses were very heavy and the brigade was relieved by Ind. 5th Inf. Bde.

On August 25, when the division moved forward, 26 and 32 (Ind.) Fd. Amb. opened M.D.Ss. on the axis of advance of their respective brigades. Next, 17 (Ind.) Fd. Amb. opened a M.D.S. near Cagli, on Route 3, on the 26th and 32 (Ind.) Fd. Amb. reverted to the rôle of the divisional M.D.S. for minor sick. 'F' F.D.S. opened at Cagli and to it two F.S.Us. and a F.T.U. were attached.

It was not until the 28th that evacuation of urgent cases to 5 C.C.S. at Sassoferrato became possible. To this C.C.S. a detachment of Indian medical personnel was attached for the care of Indian casualties. On August 30 evacuation to 54 B.G.H. at Perugia became feasible, the route being open again.

On September 3, 32 (Ind.) Fd. Amb. moved forward to open the next battle M.D.S. in Urbino and 26 (Ind.) Fd. Amb. opened a M.D.S.

for divisional sick about a mile to the north of Urbino on September 1. To Urbino moved also Lt. Sec. 9 (Ind.) C.C.S., as did also 'F' F.D.S. on the following day.

On the night of September 7/8, owing to the heavy rains, the Foglia became impassable and casualties were diverted to 1 C.C.S. at Monterchi. On the following day evacuation across the Foglia was resumed by means of the 'flying fox'.

On September 10, Indian 4th Division was detailed to support 46th Division in its attack upon Gemmano, at the junction of the Conca and the Ventena, which was being most tenaciously held by the Germans. Indian 4th Division was to protect the flank of the British Division and to exploit towards Monte Colombo. After much indecisive fighting, Indian 4th Division was set the task of capturing the Gemmano position. Ind. 11th Inf. Bde. attacked the towering hill to the north of Gemmano village and by 0430 hours on September 15 the village of Zollara had been captured while Ind. 7th Inf. Bde. had cleared Monte Colombo. Then, with 46th Division, Indian 4th Division captured the important road junction of Montescudo.

When the fighting moved to the north of Monte Calvo, H.Q. 17 (Ind.) Fd. Amb. was moved to Monte Calvo to establish the next battle M.D.S. on September 10. Priority I and II cases were evacuated therefrom to 'G' F.D.S. at Mondaino, the rest through the divisional M.D.S. to 9 (Ind.) C.C.S. at Urbino.

Indian 4th Division was now detailed to advance westwards towards the Republic of San Marino. Ind. 5th Inf. Bde. closed on Montescudo on September 17 and established a bridgehead across the Marano opposite Faetano in the face of stern opposition. Valdagrone was next occupied, while Ind. 7th Inf. Bde. cleared Monte Altavelio and Sassofeltrio. San Marino was occupied on September 20 and the Germans withdrew to the line of the Marecchia.

The next objectives of Indian 4th Division were Scorticata and Montebello, beyond the Marecchia. The attack went in on September 22 and at once encountered fanatical opposition. Nevertheless, Montebello was captured on September 23 and Scorticata on the 24th.

The advance continuing, Ind. 7th Inf. Bde. occupied Trebbio. Then, on the 27th, this brigade attacked towards Tribola, which was evacuated by the Germans on the 28th. Ind. 11th Inf. Bde. then took the lead and entered San Martino in Converseto on October 2. This was the last operation of Indian 4th Division in Italy. It was relieved by Indian 10th Division and moved back to Perugia.

When the axis of Indian 4th Division's advance was changed for the move towards San Marino on September 17, H.Q. 32 (Ind.) Fd. Amb. opened a battle M.D.S. about half a mile to the south-west of Morciano where 9 (Ind.) C.C.S. and 'F' F.D.S. were established. With the

capture of San Marino and the advance to the Marecchia 17 (Ind.) Fd. Amb. opened a battle M.D.S. near San Marino on September 23. Then 32 (Ind.) Fd. Amb. opened a battle M.D.S. at Montegiardino on September 25. 'F' F.D.S. opened in Rimini and to it the M.D.S. of 26 (Ind.) Fd. Amb. was attached.

Evacuation from the brigade A.D.Ss. was, for Priority I and II cases, to 'F' F.D.S. in Rimini; for others through the M.D.S. of 32 (Ind.) Fd. Amb. at Montegiardino to 9 (Ind.) C.C.S. at Morciano. In reserve was 17 (Ind.) Fd. Amb.

On September 30 the M.D.S. of 26 (Ind.) Fd. Amb. began to function as the battle M.D.S. at Rimini and 32 (Ind.) Fd. Amb. began to admit the minor sick. Priority I and II cases were now evacuated to 'F' F.D.S., others to the M.D.S. of 26 (Ind.) Fd. Amb. at Rimini. British casualties were evacuated to 1 C.C.S. at Miramare.

INDIAN 8TH DIVISION

When Florence fell, Indian 8th Division was relieved by N.Z. 2nd Division, moved to a concentration area near Greve and then relieved Canadian 1st Division in the southern sector of Florence on August 8/9. When, on the 11th, the Germans began to withdraw to the north of the Mugnone Canal, Ind. 21st Inf. Bde. crossed the Arno into the northern portion of the city. On the 16th, Ind. 21st Inf. Bde. handed over to a brigade of 1st Division. Indian 8th Division then took over the sector east of Florence on the south bank of the Arno. On the night of the 24th/25th the river was crossed without opposition and a large bridge-head formed. On the 26th, Ind. 17th Inf. Bde. attacked P. Cerrone, a spur running south from the range of peaks (Monte Giovi, Monte di Calvana, Monte Senario) and fanning out north of Pontassieve. On August 28, the village of Tigliano was captured and on the 31st P. Cerrone was occupied.

On August 7, 33 (Ind.) Fd. Amb. opened a M.D.S. near Greve. When the division went into Florence 29 (Ind.) Fd. Amb. opened a M.D.S. at Le Rose on August 8. Evacuation therefrom was to 54 F.D.S. at San Casciano, to which a detachment of 31 (Ind.) Fd. Amb. was attached.

When the division moved to the Pontassieve area, 33 (Ind.) Fd. Amb. opened a M.D.S. at Strada to serve Ind. 19th Inf. Bde. On August 15, 31 (Ind.) Fd. Amb. opened a battle M.D.S. at Troghi. The M.D.S. of 29 (Ind.) Fd. Amb. at Le Rose moved to Foligno and was kept in reserve.

On August 17, 29 (Ind.) Fd. Amb. moved to S. Andrea to open a M.D.S. for the divisional sick. Evacuation from 31 (Ind.) Fd. Amb's. battle M.D.S. was to 52 F.D.S. at Figline.

When the Arno was crossed and the division moved up to the Gothic Line, 31 (Ind.) Fd. Amb. opened a light M.D.S. at Verrone and 52

F.D.S. moved forward to Salceto. On August 26, 33 (Ind.) Fd. Amb. opened a M.D.S. at Pontassieve and the M.D.S. at Troghi closed and passed into reserve.

On September 2, Ind. 19th Inf. Bde. attacked Monte di Calvana to meet with fierce resistance. Later, however, the Germans withdrew and Ind. 21st Inf. Bde. occupied Monte di Calvana and Monte Giovi and thereafter moved forward across the Sieve to press against the Gothic Line in the region of Monte Stellate, Monte Citerna and Monte Verruca.

On September 12, Indian 8th Division became involved in the assault on the Gothic Line. Its objectives were Punta Femmine Morte, Alpe di Vitigliano and La Scarletta, which dominated the road to Marradi. Jutting from these heights were three spurs, Monte Stellate, Monte Citerna and Monte Verruca. In this area there were no roads but only mountain tracks.

Ind. 21st Inf. Bde. captured Monte Citerna on September 13 and Monte Verruca on the following day. By the 15th La Scarletta and the Alpe di Vitigliano were also occupied. Ind. 17th Inf. Bde. had meanwhile occupied Monte Stellate and was attacking Pgio. Al Tiglio between Monte Stellate and P. Femmine Morte. By the 18th both this feature and P. Femmine Morte had been captured.

For the attack on Monte Calvana by 19th Bde. 33 (Ind.) Fd. Amb. opened an A.D.S. at Doccia. Evacuation from the R.A.Ps. thereto was very difficult, involving a three-mile carry along a track under constant shellfire. Fifty per cent. of the mules that were used for evacuation quickly became casualties. Later it became possible for the A.D.S. to move one and a half miles forward. From the A.D.S. evacuation was by ambulance car to the M.D.S. at Pontassieve, Priority cases being sent direct to 52 F.D.S. at Salceto until the heavy rains and the damaged roads made this impossible. They were then sent to 3 (Ind.) C.C.S. at Figline (Indian) and to 4 C.C.S. at San Giovanni (British).

For the attack on Pgio. Al Tiglio by 17th Bde. 31 (Ind.) Fd. Amb. opened the battle M.D.S. at Vicchio and 52 F.D.S. moved to Rufina. Evacuation from R.A.P. to the A.D.S. was again exceedingly difficult and the average time taken to cover the distance between R.A.P. and M.D.S. was four hours. Ambulance jeeps and two-stretcher ambulance cars were used between A.D.S. and M.D.S.

The division's next task was that of opening the Marradi-San Benedetto lateral track. Ind. 17th Inf. Bde. advanced to Scarabolle on September 24 and moved against Monte di Castelnuovo which was strongly held. But on the 29th the Germans withdrew to the general line Monte Cavallara-Monte Casalino-Monte Pianoereno.

On October 7, Ind. 19th Inf. Bde. captured Monte Cavallara but suffered heavy losses in an attack upon Monte Casalino. Ind. 17th Inf. Bde. relieved 19th Bde. and 21st Bde. attacked Monte Pianoereno and

after a stiff fight captured it. On the 20th the Romano spur was cleared and at last Indian 8th Division secured a satisfactory axis of supply.

Following the break-through, 29 (Ind.) Fd. Amb. established a M.D.S. in the vicinity of Panicaglia, on the Borgo S. Lorenzo-Faenza road, to serve 17th and 19th Bdes. Then, because the pace of the advance was quickening, an A.S.C. was opened in front of the M.D.S. When the Marradi-San Benedetto lateral track was opened, 33 (Ind.) Fd. Amb. established a light M.D.S. at San Godenzo on Route 67 and the M.D.S. at Panicaglia moved to Marradi. The M.D.S. of 31 (Ind.) Fd. Amb. continued to function as the divisional rear M.D.S. at Vicchio. Priority cases were now evacuated to Lt. Sec. 8 C.C.S. at Marradi. Casualties from 21st Bde., operating far to the left of the Marradi-Faenza road, were evacuated through 3 Fd. Amb. at Palazzuolo, to which a detachment of 33 (Ind.) Fd. Amb. was attached. For 21st Bde. 29 (Ind.) Fd. Amb. provided an A.D.S. at Badia di Susinana.

For the attack on Monte Pianoereno on October 17 a light A.D.S. was established in the village of Fontana Moneta and a rear A.D.S. in Pianella, about two miles to the rear. Behind the light A.D.S. mules were used. At the A.D.S. at Pianella the jeephead was established. Evacuation thence was to the M.D.S. at Marradi (33 (Ind.) Fd. Amb.), about three and a half miles away.

Evacuation from the forward areas was to 3 (Ind.) C.C.S. at Figline on Route 69 up to September 22, in Florence up to October 6 and then in Borgo San Lorenzo. From this C.C.S. evacuation was to 18 I.G.H. in Arezzo.

INDIAN 10TH DIVISION

By August 16, following limited withdrawals by the Germans, the line held by Indian 10th Division was roughly as follows. On the right Ind. 25th Inf. Bde. held Santa Croce and Viaio in the San Sepolcro plain; in the centre Ind. 20th Inf. Bde. was in front of Sasso della Regina; Ind. 10th Inf. Bde. was on the general line Baciano (on Route 71)-Monte di Lori. On the 17th, Ind. 20th Inf. Bde. was withdrawn into reserve and the sector was held by Ind. 25th Inf. Bde. to the east of Route 71 and by Ind. 10th Inf. Bde. to the west.

The division was directed to secure the Ripa ridge and to extend its hold on the Alpe di Catenaiia by capturing Sasso della Regina, Monte la Caspa and Monte Foresto. Sasso della Regina was entered without opposition on August 18 and Monte la Caspa was occupied on the 21st. After a brisk action Monte Foresto was taken on the 23rd. Meanwhile Ind. 10th Inf. Bde. had cleared the whole of the Pratomagno massif.

As the Germans withdrew, Indian 10th Division moved into Bibbiena on Route 71 on August 28. Ind. 20th Inf. Bde. then went into the lead and on September 2 entered Soci, also on Route 71. By August 31,

Ind. 25th Inf. Bde. had reached Pieve San Stefano and had occupied Montalone and La Rocca.

During the period September 5-12, Ind. 25th Inf. Bde. breached the Gothic Line between Monte Castelsavino and Monte Fatucchio. Thereafter Indian 10th Division moved to the Adriatic sector, there to relieve Indian 4th Division.

The evacuation of casualties during August and September presented no unusual difficulty though the standard method of establishing A.D.S. and C.P. had to be modified on occasion to suit the mountainous terrain. The pattern that was finally evolved was as follows. One field ambulance provided four light A.D.Ss.; (1) for H.Q. Bde., on mules; (2) at the jeep maintenance area, on jeeps; (3) at roadhead; and (4) in reserve, on mules. The first moved close behind the R.A.Ps. and evacuated casualties to the second, usually by S.Bs. Evacuation from the second to the third A.D.S. was by stretcher-bearing jeep and from there to the M.D.S. or F.D.S. The shortness of the line of evacuation made it possible for casualties to by-pass the M.D.S., so that this was set aside for minor sick. Much use was made of 'flying foxes' and a standardised set of light, portable equipment was issued to all units.

On August 10, 14 (Ind.) Fd. Amb. moved to a site about half a mile to the north of Arezzo to open the divisional battle M.D.S. receiving low-priority cases. On August 12, 30 (Ind.) Fd. Amb. moved into Arezzo to receive light sick. 21 (Ind.) Fd. Amb. moved into Arezzo from Monterchi and passed into reserve.

When Indian 10th Division advanced towards Bibbiena along Route 71, 21 (Ind.) Fd. Amb. moved to a site about three miles to the north of Subbiano on Route 71 to open a battle M.D.S. on August 26 to serve Ind. 10th Inf. Bde. 865 F.D.S. opened just north of Arezzo. On August 19, 2 (Ind.) C.C.S. opened in Arezzo to receive high-priority casualties. On the same day 18 I.G.H. was established in Arezzo and functioned as a C.C.S. Evacuation from Arezzo was to Eighth Army medical area near Lake Trasimene.

The weather and the terrain made the work of the divisional medical services exceedingly arduous. Casualties were evacuated by stretcher-bearer squads assisted whenever possible by ambulance mules to a jeephead whence jeep ambulances conveyed them to a light A.D.S. From this ambulance cars transported them to a main A.D.S. and thence to the M.D.S. When, as often was the case, the battle M.D.S. was of necessity far back, staging A.D.Ss. were introduced.

On October 3, Indian 10th Division u/c V Corps relieved Indian 4th Division in the bridgehead that had been established by the latter division across the Marecchia. On October 4, Ind. 20th Inf. Bde. captured San Donato and, on the 5th, Ind. 25th Inf. Bde. captured San Martino while 20th Bde. entered Sogliano al Rubicone.

The division was then assigned the task of capturing Monte Farneto. 20th Bde. occupied Strigara on October 6 after heavy fighting and thereafter moved against Monte Farneto. The height was taken and held against a number of heavy counter-attacks.

On October 7, Indian 10th Division, with 46th Division on its right, attacked across the Fiumicino. 25th Bde. captured Monte Gattona and San Lorenzo on the 8th. Ind. 10th Inf. Bde. captured San Paola and occupied Monte Spaccato. Ind. 43rd Lorried Inf. Bde. now came u/c Indian 10th Division and relieved 20th Bde. The advance was continued and on the 13th Sorrivoli was entered.

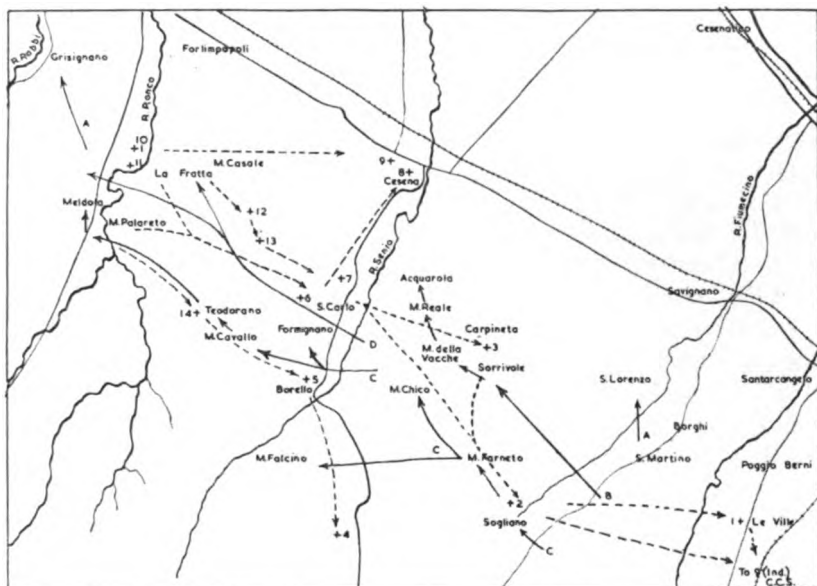


FIG. 112. Indian 10th Division. Medical Cover. October 3–November 2, 1944

A. Ind. 25th Inf. Bde.
B. Ind. 10th Inf. Bde.

C. Ind. 20th Inf. Bde.
D. Ind. 43rd Bde.

1. 57 F.D.S.
2. M.D.S. 30 (Ind.) Fd. Amb. October 12
3. A.D.S. 14 (Ind.) Fd. Amb. October 22
4. M.D.S. 21 (Ind.) Fd. Amb.
5. A.D.S. 21 (Ind.) Fd. Amb. October 23
6. A.D.S. 3 (Ind.) Lt. Fd. Amb. October 30
7. A.D.S. 14 (Ind.) Fd. Amb. October 24

8. 9 (Ind.) C.C.S. October 31
9. 58 F.D.S.
10. A.D.S. 14 (Ind.) Fd. Amb. October 31
11. A.D.S. 3 (Ind.) Lt. Fd. Amb. October 29
12. Jeep Post
13. A.D.S. 3 (Ind.) Lt. Fd. Amb. October 25
14. A.D.S. 21 (Ind.) Fd. Amb. October 25

The next objective was Monte della Vache. By October 14, Ind. 10th Inf. Bde. had cleared most of Monte della Vache while 43rd Bde. had occupied Chicco and also Monte San Lorenzono. Indian 10th and 46th Divisions then moved forward against Monte Reale and Monte Romano to clear and occupy them on October 16/17. Next Indian 10th Division drove the Germans from Acquarola and 46th Division captured Celincordia.

Indian 10th Division then established a bridgehead across the Savio and pushed the Germans back to the line of the Ronco. Then the Ronco was crossed by Indian 10th Division with 4th Division on its right. On October 30, Meldola was finally cleared. The Germans were now withdrawing rapidly in this sector and on the night of November 1/2 Grisignano, on the Rabbi, was occupied. Thereafter the division was pulled out of the line to rest.

On October 1, 14 (Ind.) Fd. Amb. opened a M.D.S. at Ponte di Verucchio to serve Ind. 10th Inf. Bde. On the 2nd, 21 (Ind.) Fd. Amb. opened a M.D.S. at Borgomaggiore for the divisional sick. A company each of 14 and 21 (Ind.) Fd. Ambs. were brigaded with Ind. 25th and 20th Inf. Bdes. respectively, evacuating casualties to the M.D.S. of 14 and 21 (Ind.) Fd. Ambs. Priority cases were evacuated to 57 F.D.S. in Le Ville, to which an Indian detachment was attached.

On October 12, when the Savio was reached, 30 (Ind.) Fd. Amb. opened a battle M.D.S. at Sogliano. For the crossing of the Savio 14 (Ind.) Fd. Amb. established an A.D.S. at Sorrivoli and a forward A.D.S. about four hundred yards to the rear of the crossing place of Ind. 25th Inf. Bde. Stretcher-bearers went forward to clear the R.A.Ps. but came under heavy fire and were forced to retire. However, under cover of the Red Cross they returned and were allowed to proceed with their tasks.

On October 23, to serve 20th Bde. in its advance on Monte Cavallo, 21 (Ind.) Fd. Amb. opened an additional M.D.S. on Route 71, about half a mile north of Mercato, and an A.D.S. at Borello, about seven miles further forward. Jeep ambulances operated in front of the A.D.S. and ambulance cars between the A.D.S. and the M.D.S.

When Ind. 43rd Lorried Inf. Bde. took up the advance to M. Casole, 3 (Ind.) Lt. Fd. Amb. established an A.D.S. and a jeep post to serve it. 14 (Ind.) Fd. Amb. set up a staging A.D.S. at Castiglione. The divisional M.D.S. opened in Sogliano. But heavy rain made evacuation to Sogliano exceedingly difficult and so casualties were evacuated *via* Route 71 through Borello to the M.D.S. of 21 (Ind.) Fd. Amb. in Mercato. When 43rd Bde. crossed the Ronco to the north of Meldola, 3 (Ind.) Lt. Fd. Amb. established its A.D.S. in La Fratta on October 29. Evacuation therefrom was to 58 F.D.S. in Cesena. On October 25, 21 (Ind.) Fd. Amb. opened an A.D.S. in Teodorano to serve 20th Bde. Casualties were evacuated therefrom to 21 (Ind.) Fd. Amb's. M.D.S. in

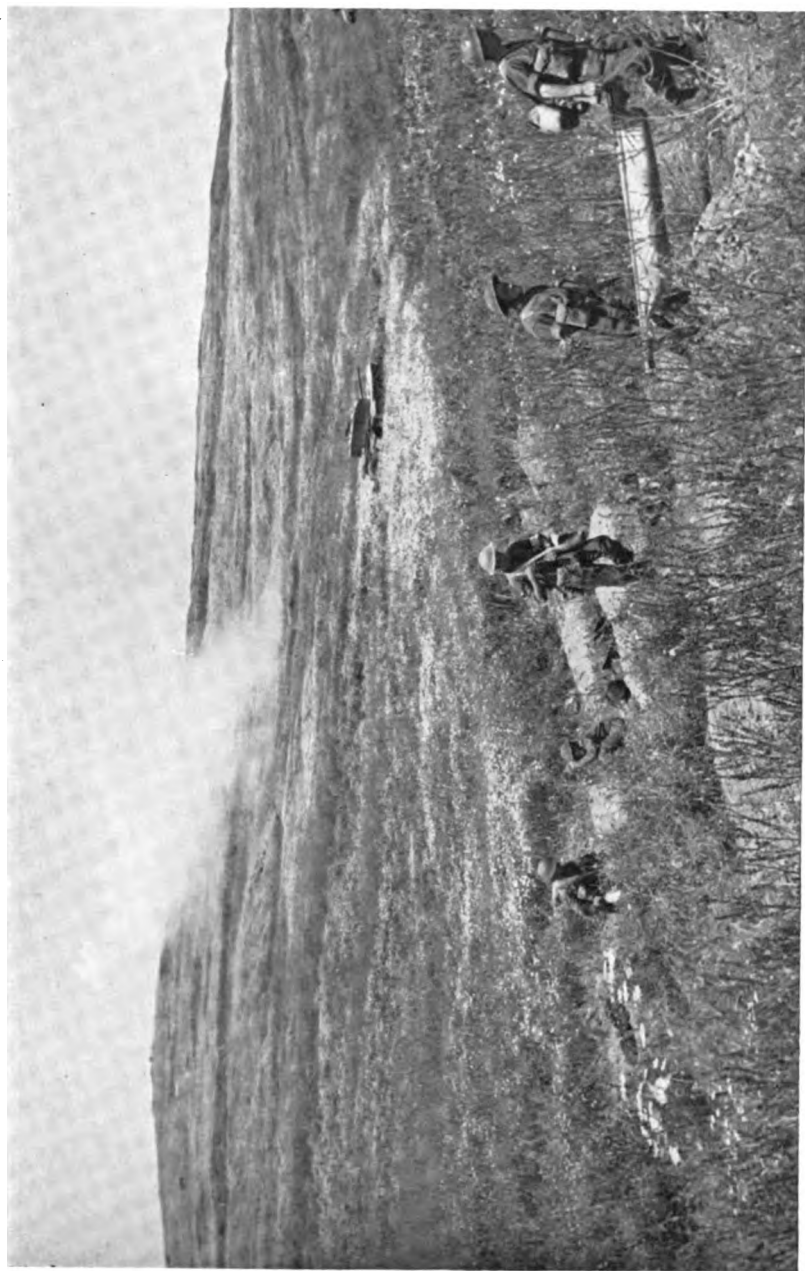


PLATE XXVI. Regimental stretcher-bearers moving forward under fire.

[Imperial War Museum



PLATE XXVII. A casualty being brought back to the Regimental Aid Post on an improvised sledge. Torrential rain had rendered the ground in the valley of the Santerno impassable to transport for a distance of two miles behind the line. Twelve men were needed to each stretcher to get the casualty back to the R.A.P. at Casa Godenzo.

[Imperial War Museum]



PLATE XXVIII. A stretcher-bearer squad rests while the Regimental Medical Officer dresses the wounds of a casualty.

[Imperial War Museum]

Mercato. On October 30, 3 (Ind.) Lt. Fd. Amb. opened a divisional M.D.S. at San Carlo on Route 71. Evacuation therefrom was to Cesena.

When Ind. 25th Inf. Bde. advanced on Grisignano on October 31, a company of 14 (Ind.) Fd. Amb. relieved the A.D.S. of 3 (Ind.) Lt. Fd. Amb. at La Fratta, the light field ambulance moving to San Carlo.

During these events 9 (Ind.) C.C.S. in Morciano was the rearmost Indian medical unit of V Corps. It was about fifteen miles behind the divisional M.D.S. at Ponte di Verucchio and seventeen miles behind 57 F.D.S. at Le Ville. On October 14 it moved up to a site on the coast about four miles south of Rimini. Then on the 31st it moved again to Cesena.

On November 18 the division returned to the line again in the sector north of Villafranca di Forli and moved up to the line of the Montone.

The Germans were withdrawing on V Corps front to the left of Indian 10th Division. But in Indian 10th Division's sector the Germans held on to a switch line running through Albereto. On November 30 a full-scale attack was launched. It met with fierce resistance but Albereto was captured by 20th Bde. and the bridge at Casa Bettini was seized by 10th Bde. Canadian I Corps then passed through.

When, on November 18, the division returned to the line, 14 (Ind.) Fd. Amb. opened the divisional battle M.D.S. in Ospedaletto on Route 67, a few miles north of Forli. For 10th Bde. an A.D.S. was established in Coccolia, about four miles north of Ospedaletto. Then, when 43rd Lorried Inf. Bde. came up on the right of 10th Bde., 3 (Ind.) Lt. Fd. Amb. opened an A.D.S. north of Coccolia and on Route 67. To serve 20th Bde. 21 (Ind.) Fd. Amb. established an A.D.S. in Corleto on November 25.

Evacuation was now as follows :

From east of the Ronco, through H.Q. 21 and 30 (Ind.) Fd. Amb. about four miles north-east of Forlimpopoli.

From between the Montone and the Ronco, through the M.D.S. of 14 (Ind.) Fd. Amb. at Ospedaletto.

From west of the Montone, through the A.D.S. of 21 (Ind.) Fd. Amb. at Corleto.

Priority cases were evacuated from these centres to 57 F.D.S., now in Forli. The rest were sent to 9 (Ind.) C.C.S. in Cesena.

On December 11, Indian 10th Division took over the left sector of the bridgehead across the Lamone with N.Z. 2nd Division on its right. On the 14th these divisions attacked the Pideura-Pergola ridge, to clear it and to capture Faenza. The attack was successful and the Germans withdrew to the line of the Senio, closely followed by Indian 10th Division. Here the division remained until February 9, when it was relieved by 3rd Carpathian Division. Relatively uneventful as these five

weeks were they were hard to endure, for the rain, snow and frost dispelled all possibilities of comfort. Two days after it was relieved on February 9, it moved to XIII Corps sector and relieved 78th Division in the Castel del Rio sector. Here it remained until it was relieved in its turn in April to take its part in the final offensive.

For the advance on Faenza Ind. 25th Inf. Bde. was placed u/c 46th Division in the Lamone bridgehead. On December 10, 21 (Ind.) Fd. Amb. established a light M.D.S. about five miles south-east of Faenza.

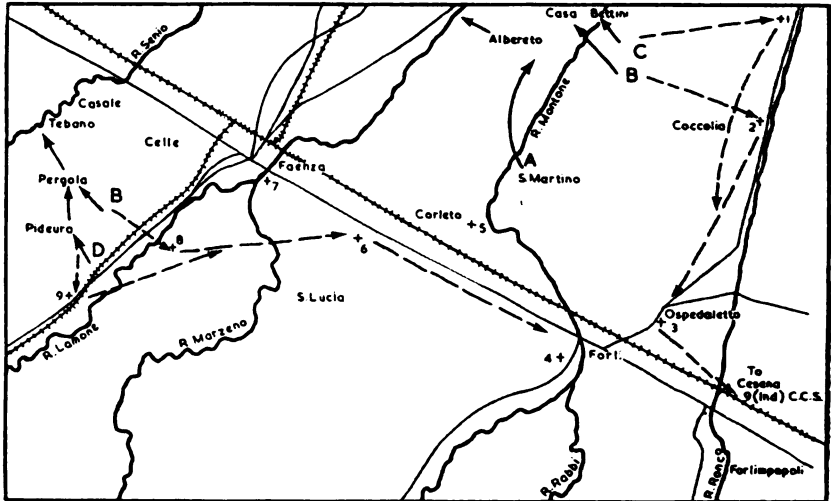


FIG. 113. Indian 10th Division, Medical Cover. November 19–December 17 1944.

A. Ind. 20th Inf. Bde.
B. Ind. 10th Inf. Bde.

C. Ind. 43rd Bde.
D. Ind. 25th Inf. Bde.

- | | |
|---|--|
| 1. 3 (Ind.) Lt. Fd. Amb. November 23 | 6. M.D.S. 21 (Ind.) Fd. Amb. December 10 |
| 2. A.D.S. 14 (Ind.) Fd. Amb. | 7. M.D.S. 30 (Ind.) Fd. Amb. December 19 |
| 3. M.D.S. 14 (Ind.) Fd. Amb. November 19 | 8. A.D.S. 30 (Ind.) Fd. Amb. December 10 |
| 4. 9 (Ind.) C.C.S. December 11
57 F.D.S. | 9. A.D.S. 14 (Ind.) Fd. Amb. December 10 |
| 5. A.D.S. 21 (Ind.) Fd. Amb. November 25 | |

To this came the casualties of 25th Bde. collected in the A.D.S. provided by 14 (Ind.) Fd. Amb. They were evacuated from this light M.D.S. to Cesena. After the capture of Faenza, 30 (Ind.) Fd. Amb. opened a M.D.S. in the town on December 19. 57 F.D.S. was still in Forlì receiving Priority cases and 9 (Ind.) C.C.S., now in Forlì, received all others.

In the rear areas there were 31 I.G.H. at Numana and 18 I.G.H. in

Arezzo. Specialist cases were sent to 83 B.G.H. at Riccione. Between 9 (Ind.) C.C.S. in Forli and 31 I.G.H. in Numana patients were staged at 59 B.G.H. in Pesara, to which 18 I.S.S. was attached. 31 I.G.H. was functioning as a rear C.C.S. and was holding cases with an expected duration of stay of up to three weeks. Thence casualties were evacuated by sea to 14 C.G.H. at Bari and 11 I.G.H. at Taranto.

When the division passed to command XIII Corps, 21 (Ind.) Fd. Amb. established the divisional battle M.D.S. in Castel del Rio. Priority cases were evacuated to 10 F.S.U. at Villa di Sassonero, eight miles away, and later to 52 F.D.S. in Coniale. On February 18, 30 (Ind.) Fd. Amb. opened a M.D.S. for the divisional sick at Sant' Agata. 3 (Ind.) C.C.S. was at Borgo San Lorenzo. On March 13, 25th Ind. Inf. Bde. took over the Monte Grande sector from U.S. 88th Division. 14 (Ind.) Fd. Amb. thereupon opened a M.D.S. at Villa di Sassonero. Priority cases from this brigade were sent to 9 F.S.U. in the same area, the rest to the M.D.S. of 21 (Ind.) Fd. Amb. at Castel del Rio.

S.A. 6TH ARMoured DIVISION

This division passed from u/c XIII Corps to U.S. IV Corps on August 21. It entered the line to advance north from Prato to reach the vicinity of Castiglione. During this advance—August 28th—September 30th—each field ambulance was placed under brigade command with the proviso that before each new siting of the dressing stations A.D.M.S. Division should be consulted. During the advance from Prato, on a single road with few dwellings and these damaged and fully occupied by troops, it became necessary for 137 Fd. Amb. with 24th Guards Bde. and 19 (S.A.) Fd. Amb. with S.A. 11th Armd. Bde. to form a battle A.D.S. and to use the rest of the headquarters company as a main A.D.S. for the sick and also for staging. Difficulty was encountered for several days after September 7, when the Arno rose and the bridges were washed away. The A.S.C. and the C.C.S. were south of the river and two field ambulances with the brigades in action north of it. The F.D.S. was sent across the Arno by way of the Pontedera bridge, far to the west, but until it became established casualties had to be ferried across the river at Empoli in assault boats and during this period a staging post remained on the south bank. 108 S.A.G.H. opened in Florence towards the end of September.

During the period July 1—September 30, 1944, the average daily strength of the division and the casualties suffered are recorded in Table 31.

The division was u/c U.S. IV Corps from October 1—5 and from November 5 to December 25, u/c U.S. II Corps from January 15 to February 24, u/c U.S. Fifth Army for the rest of the period until on April 1 it passed u/c U.S. II Corps again.

TABLE 3 I

Strength

	European Officers	O.Rs.	Cape Corps	Totals
U.D.F. . . .	910	12,900	1,650	15,460
U.K.	230	4,965		5,195
Indian	39	823		862 (for three weeks only)
				21,517

Casualties

	U.D.F.				U.K.		
	Offrs.	O.Rs.	C.C.	Totals	Offrs.	O.Rs.	Totals
Killed	12	155	3	170	6	108	114
Wounded . . .	108	1,145	42	1,295	37	446	483
Missing	2	20	0	22	1	12	13
	122	1,320	45	1,487	44	566	610

	Indian			Grand Totals		
	Offrs.	O.Rs.	Totals	Offrs.	O.Rs.	Totals
Killed	1	10	11	19	276	295
Wounded . . .	6	70	76	151	1,703	1,854
Missing	0	2	2	3	34	37
	7	82	89	173	2,013	2,186

U.D.F. = Union Defence Force.

U.K. = 24th Guards Bde., 74th Lt. A.A. Regt. serving as infantry and various R.A. Regts.

Indian = 4/13th Frontier Force Rifles.

In early October the division was involved in attacks northwards through the hills above Camugnano and in the capture of Montes Vigese and Stanco. The rest of 1944 included much offensive patrolling and many minor clashes in the hills in front of Prato.

Since there was but one main road from forward of Castiglione back to Prato and Florence and because there were very few buildings available for medical installations, it became necessary to divide each A.D.S. into a heavy and a light section. The former dealt with the sick passing down the line of evacuation, the latter, with a resuscitation team attached, served as a battle A.D.S. Behind each R.A.P. a C.C.P. was established. This arrangement proved its worth during the attack through the hills above Camugnano when evacuation back to the forward (battle) A.D.S. was extremely difficult, being along a one-way

muddy track passable only by jeep. Under these conditions the C.C.P. served usefully as a S.P.

The advanced surgical centre (54 F.D.S., 8 F.S.U. 1 (S.A.) F.S.U. and 23 F.T.U.) was kept as far forward as possible. On October 8 it moved through Prato to Usella and, on the 20th, to Castiglione. 8 (S.A.) C.C.S. with 2 (S.A.) F.S.U. functioned at Signa until November 13 and then moved to Castiglione. Here too the A.D.S. of 20 (S.A.) Fd. Amb. was established. The A.D.S. of 19 (S.A.) Fd. Amb. was in Usella and that of 137 Fd. Amb. (24th Guards Bde.) at Prato.

Priority I and II battle casualties were evacuated to the Adv. Surg. Centre and Priority III to the C.C.S. From the A.S.C. and the C.C.S. rearward evacuation was to the S.A.G.H. in Florence whence head surgery cases were sent on to Arezzo.

Because of the shortage of reinforcements, it was necessary to hold within divisional medical units all sick up to twenty-one days (except exhaustion and V.D. cases). If at the end of this time a man was not fit to be returned to his unit he was sent to the Voortrekker Club in Florence for a period of 4-7 days. Convalescent depot facilities were not available in the divisional area.

From the middle of February until the spring offensive, the division was resting in the Lucca area. When 24th Guards Bde. left, the division was reformed into two South African infantry brigades and one South African armoured brigade with only two field ambulances. 19 (S.A.) Fd. Amb. reformed as a light field ambulance with six light sections and was attached to S.A. 11th and 13th Bdes., 20 (S.A.) Fd. Amb. serving S.A. 12th Bde. It was considered that so long as one, or preferably two fast-moving F.D.Ss. with F.S.U.s. and F.T.U. attached were available to the division, and as long as one C.C.S. was available to cope with the overflow of the battle casualties and sick not requiring admission to general hospital, these two field ambulances could provide the medical cover required. It was decided that the forward A.D.S., formed as a section from the H.Q. company of a field ambulance or from a light section reinforced from the H.Q. company, should provide all the triage and resuscitation necessary and that each field ambulance should provide a forward A.D.S. to form a link between the light sections acting as C.C.Ps. and the main A.D.S. Italian military personnel were used as S.Bs. in addition to the members of the Cape Corps (Med.).

APPENDIX XVII

GENERAL HOSPITALS: LOCATIONS. JULY 1, 1944

In Sicily

- 66 B.G.H. in Catania; 33 B.G.H. in Syracuse
- On the Island of Vis off the coast of Yugoslavia: 2 Fd. Hosp.
- In Italy the main administrative divisions of the country were Army Area, the Rome Allied Area Command (R.A.A.C.), 2 District in the East and 3 District in the West.

In Eighth Army Area

59 B.G.H. Orvieto

In the East (2 District)

22 and 45 B.G.Hs. and 11 I.G.H. Taranto
 3 Pol. G.H. Palagiano
 1 Pol. G.H. Casamassima
 Yugoslav. Mil. Hosp. Grumo
 98 B.G.H., 14 C.G.H., 3 N.Z.G.H. and 102
 S.A.G.H. Bari
 1 N.Z.G.H. Molfetta
 18 I.G.H. Andria
 76 B.G.H. Trani
 71 and 93 B.G.Hs. Barletta
 Yugoslav. Mil. Sanatorium San Ferdinando
 83 B.G.H. Larino
 161 Pol.G.H. Campobasso
 50 B.G.H. Vasto
 162 Pol.G.H. Lanciano

In the West (3 District)

30 I.G.H. Pontecagnano
 103 B.G.H. Nocera
 70 B.G.H. Pompeii
 1 Cdn.G.H. Avellino
 65, 67 and 92 B.G.Hs. Naples
 104 B.G.H. Afragola
 11, 69, 72 and 100 B.G.Hs., 16 and 31 C.G.Hs. Cancellò
 2 B.G.H., 14 and 15 Cdn.G.Hs., 2 N.Z.G.H. Caserta
 106 S.A.G.H. Benevento
 3 Cdn.G.H. Anagni

In R.A.A.C.

48, 54 and 58 B.G.Hs., 5 Cdn.G.H. Rome

Bedstate

Total Equipped	. 38,276
Occupied	. 26,697
Vacant	. 11,579

APPENDIX XVIII

A.A.I. ORDER OF BATTLE AS AT AUGUST 25, 1944 (abbreviated)

U.S. Fifth Army

H.Q. Brazilian Expeditionary Force

Brazilian 6th Infantry Regiment

U.S. II Corps West of Florence

U.S. 34th Division In reserve

„ 88th „ „

„ 91st „ „

„ 752 Tk. Bn.

„ 755 „ „

„ 760 „ „

„ 442 R.C.T.

U.S. IV Corps West coast—Pisa sector

U.S. 1st Armd. Division In reserve

S.A. 6th Armd. Division

U.S. 85th Division

„ 370 R.C.T. In reserve

„ 1st Armd. Gp.

„ 2nd „ „

XIII Corps East of Florence

1st Division

6th Armd. Division

Indian 8th Division

Cdn. 1st Armd. Bde.

Eighth Army

N.Z. 2nd Division Near Siena

Greek 3rd Mountain Bde.

Corps of Italian Liberation (C.I.L.), formerly the Utili Division

Canadian I Corps Adriatic coastal plain
(covered by a screen of Polish units)

Canadian 1st Division

Canadian 5th Armd. Division

21st Tk. Bde.

H.C.R.

Polish II Corps Adriatic coast (along the reaches of the Metauro)

3rd Carpathian Division

5th Kresowa „

Polish 2nd Armd. Bde.

7th Hussars

Italian 2nd Bde. (ex-C.I.L.)

V Corps	Apennine foothills on Adriatic sector (between Porto Recanati and the Fignocagli road)
1st Armd. Division	
4th Division	
Indian 4th Division	
46th Division	
56th ,,	
7th Armd. Bde.	
25th Tk. Bde.	
X Corps	Central Apennines (on Eighth Army's defensive left flank)
Indian 10th Division	
9th Armd. Bde.	
K.D.G.	
12th L.	
27th L.	
Lovat Scouts	

APPENDIX XIX

A.A.I. LOCATION OF GENERAL HOSPITALS (EXCLUDING U.S.) AS AT SEPTEMBER 30, 1944

U.S. Fifth Army Area	
108 S.A.G.H.	Florence
Eighth Army Area	
54 B.G.H.	Rimini
83 B.G.H. and 3 Cdn.G.H.	Riccione
<i>1 District</i>	
55 Area	
31 B.G.H. and 18 I.G.H.	Arezzo
61 Area	
11 B.G.H.	Porto Recanati
71 B.G.H.	Loreto
31 C.G.H.	Numana
1 Cdn.G.H.	Iesi
1 N.Z.G.H. and 1 Gk.G.H.	Senigallia
66 B.G.H., 161 and 162 Pol.G.Hs.	Ancona
59 B.G.H.	Fano
71 Sub-area	
5 B.G.H.	Assisi
58 B.G.H. and 14 Cdn.G.H.	Perugia

Rome Allied Area Command	
48 and 104 B.G.Hs.	Rome
5 Cdn.G.H.	"
30 I.G.H.	"
<i>2 District</i>	
52 Area	
22, 45 and 97 B.G.Hs.	Taranto
11 I.G.H.	"
3 Pol.G.H.	Palagiano
2 Yugoslav Mil. Hosp.	Gravina
54 Area (previously 6 B.S.A. and 67 Garrison)	
64 B.G.H.	Andria
76 B.G.H.	Trani
93 B.G.H.	Barletta
95 B.G.H.	Molfetta
1 Yugoslav Mil. Hosp.	Grumo
1 Pol.G.H.	Casamassima
98 B.G.H., 102 S.A.G.H., 3 N.Z.G.H., 14 C.G.H.,	Bari
1 Mob. Mil. Hosp.	Gravina
106 S.A.G.H.	Turi
107 S.A.G.H.	Trinitapoli
Yugoslav Sanatorium	San Ferdinando
67 Garrison (previously 60 Sub-area)	
50 B.G.H.	Vasto
<i>3 District</i>	
57 Area	
2 B.G.H.	Caserta
65, 67 and 92 B.G.Hs.	Naples
69 and 72 B.G.Hs. and 16 C.G.H.	Cancello
100 B.G.H.	Afragola
15 Cdn.G.H. and 2 N.Z.G.H.	Caserta
94 Sub-area	
70 B.G.H.	Pompeii
103 B.G.H.	Nocera
70 Sub-area (previously 56 Area)	
33 B.G.H.	Syracuse with de- tachs. at Catania and Messina
Beds occupied 37,752	
Beds vacant 11,458	
Beds equipped 49,210	
(On the island of Vis was 2 Fd. Hosp.)	

APPENDIX XX

15 ARMY GROUP. MEDICAL ORDER OF BATTLE AS AT DECEMBER 31,
19441. *Under Command Eighth Army*

Gen. Hosp.	. . .	54, 59, 66, 83 B.G.Hs. 3 Cdn.G.H. 162 Pol.G.H. 22 B.G.H. expansion (100 beds) 23 B.G.H. " "
C.C.Ss.	. . .	1, 2, 5, 12, 14*, 15, 18, 19 4 and 5 (Cdn.) 9 (Ind.) 3 and 5 (Pol.) 1 (N.Z.)
F.D.Ss.	. . .	53, 57, 58, 865, 866 1, 2, 3, 8, 13, 16 (Cdn.)
F.S.Us.	. . .	1*, 5, 7, 21, 23, 25, 26, 29, 32, 36 1, 2, 3, 4, (Cdn.) 2 and 3 (N.Z.) 45, 46, 47, 48 (Pol.) 3 (Ind.) Mob. Surg. Unit
F.T.Us.	. . .	3, 4*, 9, 10, 15, 25, 26, 34 1, 2, 3 (Cdn.) 2 (N.Z.) 49, 50 (Pol.)
Adv. Depots	Med.	
Stores	. . .	7 1 (Cdn.) 344 (Pol.)
Labs.	. . .	1 and 2 Mob. Bact. Labs. 1 (Cdn.) Mob. Bact. Lab. 3 Mob. Hyg. Lab. 1 (Cdn.) Mob. Hyg. Lab. 8 Mal. Fd. Lab. 1 (Cdn.) Med. Res. Lab.
Dental Units	. . .	132, 133, 137, 138, 139, 140, 141, 150, 154, 163, 167, 201 M.D.Us. 1 (N.Z.) Mob. Dent. Unit 3 (Cdn.) Dental Company 11, 15, 'E' (Ind.) Dent. Surg. Units 41, 42 Fd. Dent. Labs.
Fd. Hyg. Secs.	. . .	4, 8, 11, 15, 19, 47, 51, 52, 69* 2, 5, 11 (Cdn.) 4 (N.Z.) 3, 7, 32 (Pol.) 12 (Ind.)

Specialist Medical	
Units	Ophthal Secs. 50 and 68 B.G.Hs. 1 Maxillo-Facial Unit 4 Mob. Neurosurg. Unit 11 Corps Psychiatric Team 12, 14 V.D.T.Ts. 3 Ent. Fd. Unit Traumatic Shock Res. Team 1 (Cdn.) Ophthal. Unit 2 (Cdn.) V.D.T.T. 2 (Cdn.) Exhaustion Unit 14 (N.Z.) Optician Unit 102 (N.Z.) V.D.T.C. 7 (Ind.) V.D.T.C.
M.C.U.s.	36, 39, 41 3, 5, 34 (Pol.)
A.M.C.U.s.	21, 25, 26, 77, 78, 79, 85, 86, 87, 89 1, 2, 3, 4, 5 (Cdn.) 2 (Ind.)
Miscellaneous Med.	
Units	18, 39 I.S.S. 51 P.A.C. 8 Con. Depot (H.Q. and one div.) Det. 1 (Cdn.) Con. Depot, 'B' Div.
R.A.S.C. Units	25 Coy. R.A.S.C. M.A.C. 88 " " " 112 " " " 485 A.F.S. A.C.C. 'C' and 'D' plns. 567 " " " (N.Z.) M.A.C. 1 (Cdn.) M.A.C. 3 (Ind.) M.A.S. 29 Pol. M.A.C.
Fd. Ambs.	140, 167, 183, 184, 185, 214, 226 4, 5, 9, 24 (Cdn.) 4, 5, 6 (N.Z.) 14, 21, 30 (Ind.) 1, 2, 5, 6, 7, 31 (Pol.)
Lt. Fd. Ambs.	1, 5, 6, 151, 165, 166* 2, 7 (Cdn.) 3 (Ind.) 9 (Pol.)
2. Under Command U.S. Fifth Army	
Gen. Hosp.	107 S.A.G.H.
C.C.Ss.	4, 8 3 (Ind.) 8 (S.A.)

F.D.Ss.	. . .	52, 54, 55, 56
F.S.U.s.	. . .	2, 8, 9, 10, 22, 30, 31*, 35 1, 2 (S.A.) 1 (Ind.) Mob. Surg. Unit
F.T.U.s.	. . .	1, 11, 12, 23, 33
Adv. Depot Med. Stores	. . .	3
Labs.	. . .	3 Mob. Bact. Lab.
Dental Units	. . .	130, 151, 152, 153, 156, 157, 161 M.D.U.s. 6 (S.A.) M.D.U. 'D' (Ind.) Dent. Unit 84 Fd. Dent. Centre 9 Fd. Dent. Lab.
Fd. Hyg. Secs.	. . .	13, 18, 47, 3 Lt. 6 (S.A.) 20 (Ind.) 11 Fd. San. Sec.
Specialist Medical Units	. . .	Ophthal. Sec. 54 B.G.H. 13 Corps Psychiatric Team Adv. Sec. 4 Maxillo-Facial Unit " " 5 Mob. Neurosurg. Unit 13 V.D.T.T.
M.C.U.s.	. . .	38, 40, 43, 44, 49, 54
A.M.C.U.s.	. . .	80, 81
Miscellaneous Med. Units	. . .	4 Br.S.S. 57, 82, 86, 98 P.A.Cs.
R.A.S.C. Units	. . .	146 Coy. R.A.S.C. M.A.C. 485 A.F.S. A.C.C. 'B' and 'C' plns. 6 (Ind.) M.A.S.
Fd. Ambs.	. . .	1, 2, 3, 11, 14, 132, 137, 152, 165, 217 19, 20, 29 (S.A.) 31, 33 (Ind.)
3. <i>Under Command 1 District</i>		
Gen. Hosps.	. . .	5, 11, 31, 58, 71 1 and 14 Cdn. 1 N.Z. 18 I.G.H. 31 C.G.H. 108 S.A. 161 Pol. 5 Swazi Secs. of a G.H. 7 Basuto Secs. of a G.H. Cdn. G.H. Expansion 20 Expansion C, D, E and F Polish Expansions 1 Gen. Hosp. V.D. Expansion

C.C.S.	21
Depots Med. Stores	10 Adv. Depot 2 Base Depot 7 (Ind.) Depot N.Z. Depot
Labs.	5 Mal. Fd. Lab. 11 and 51 (Ind.) Fd. Labs.
Dental Units	85, 96, 136, 155, 160, 162 Fd. Dent. Centres 202 M.D.U.* 4 Fd. Dental Lab. 2 (Ind.) Dent. Mech. Unit 1 (Cdn.) Army Dental Centre
Fd. San. Secs.	12, 13, 20
Specialist Medical Units	7 Base Psychiatric Centre 6 Comb. V.D.T.C.
M.C.U.s.	35, 50, 56, 57, 60, 61, 62, 64, 73
A.M.C.U.s.	13, 16
Miscellaneous Med. Units	32 Reception Station 41 (Ind.) X-ray Unit 48 I.S.S. 44, 49, 52, 53, 55, 59, 'R' and 'S' P.A.Cs. 1 (N.Z.) Con. Depot 'B' Div. 1 (Cdn.) Con. Depot less detach. 2 (S.A.) Con. Depot 9 Con. Depot

1 District. Bedstate as at 1800 hours December 31, 1944

	<i>Occupied</i>	<i>Vacant</i>	<i>Total equipped</i>
55 Area			
31 B.G.H.	440	260	700
" " (Pol. expansion)	37	63	100
18 I.G.H.	460	140	600
21 C.C.S.	48	102	150
6 Comb. V.D.T.C.	29	71	100
61 Area			
161 Pol.G.H. & expansions	469	431	900
1 Cdn.G.H.	373	297	670
71 B.G.H.	575	225	800
11 B.G.H.	407	93	500
" " Basuto wing	35	65	100
31 C.G.H.	447	153	600
7 (Ind.) V.D.T.C.	5	95	100

* For administration only : under operational command A.F.H.Q., these units being earmarked for Operation 'Fairfax'.

	<i>Occupied</i>	<i>Vacant</i>	<i>Total equipped</i>
1 N.Z.G.H.	456	144	600
1 B.G.H. V.D. expansion	120	80	200
32 Reception Station	18	22	40
71 Sub-area			
14 Cdn.G.H.	1,223	139	1,362
58 B.G.H.	273	27	300
5 B.G.H.	491	109	600
7 Base Psychiatric Wing	333	67	400
H.Q. Florence Command			
107 S.A.G.H.	618	588	1,206
Strengths			
Eighth Army	283,300		
U.S. Fifth Army (Br. Component)	147,323		
1 District	62,733		
	493,356		

APPENDIX XXI

LOCATIONS OF GENERAL HOSPITALS (EXCLUDING U.S. UNITS).
DECEMBER 31, 1944

Riccione	3 Cdn.G.H., 162 Pol.G.H., 54 & 66 B.G.Hs.
Cesena	83 B.G.H.
Fano	59 B.G.H.
Senigallia	1 N.Z.G.H.
Ancona	161 Pol.G.H.
Iesi	1 Cdn.G.H.
Numana	31 C.G.H.
Loreto	71 B.G.H.
P. Recanati	11 B.G.H.
Florence	107 S.A.G.H.
Arezzo	18 I.G.H., 31 B.G.H.
Perugia	14 Cdn.G.H., 58 B.G.H.
Assisi	5 B.G.H.
Orvieto	108 S.A.G.H.
Rome	5 Cdn.G.H., 30 I.G.H., 106 S.A.G.H., 48 & 104 B.G.Hs.
Anagni	99 B.G.H.
Caserta	2 N.Z.G.H., 15 Cdn.G.H., 2 B.G.H.
Cancello	69 & 72 B.G.Hs.
Afragola	100 B.G.H.
Naples	65, 67 & 92 B.G.Hs.
Pompeii	70 B.G.H.

Nocera	103 B.G.H.
San Ferdinando	Yugoslav Military Hospital
Barletta	93 & 95 B.G.Hs.
Trani	76 B.G.H.
Andria	64 B.G.H.
Bari	3 N.Z.G.H., 102 S.A.G.H., 14 C.G.H., 98 B.G.H.
Grumo	Yugoslav Military Hospital
Casamassima	1 Pol.G.H.
Gravina	2 Yugoslav Military Hospital
Palagianò	3 Pol.G.H.
Grottaglie	50 B.G.H.
Taranto	11 I.G.H., 22 & 45 B.G.Hs.
Brindisi	1 Mob. Mil. Hosp.
In Sicily—Syracuse	33 B.G.H. with detachment at Catania

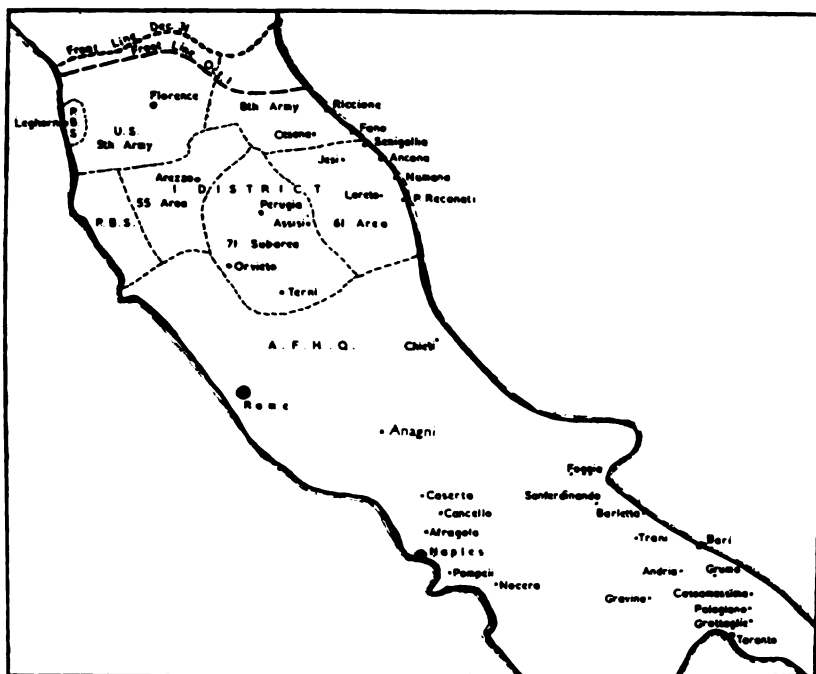


FIG. 114. The Locations of the General Hospitals of 15 Army Group (excluding U.S. units) December 31, 1944.

CHAPTER 5

THE CAMPAIGN IN ITALY (contd.)

D. January to May 1945

PRÉCIS

IT WAS not until April 9, 1945, that the advance was resumed. Eighth Army attacked across the Santerno and fought its way up the Argenta gap towards Ferrara and Budrio. U.S. Fifth Army opened its offensive on the 14th when U.S. IV Corps advanced rapidly through the mountains west of Bologna. This city was entered from the west and south by the Americans and from the east by the Poles on April 21. V Corps burst through the Argenta gap and was approaching Ferrara and the River Po. Resistance swiftly weakened. The Americans raced north to Verona and closed the Brenner Pass, spread into the north-west of Italy and moved swiftly to the east along the northern frontier. Eighth Army crossed the Po to enter Venice and Trieste and to seize the eastern passes into Austria.

The Germans, trapped and exposed to the unleashed anger of great numbers of Partisans, began to surrender. The final capitulation of the German forces in Italy took place on May 2, 1945.

OPERATION 'BUCKLAND'

During the period December 1944-April 1945 no major action was attempted on the Italian front. The only operation of any magnitude was that by the newly arrived U.S. 10th Mountain Division in February, to which reference has been made. 15 Army Group, waiting until the grip of winter had been loosened by the coming of spring, had rested and reorganised and had been replenished. To Eighth Army had come many new weapons, including the 'Croccodile', a flame-throwing Churchill tank, the amphibious carrier tanks known as 'Fantails', heavier gunned Sherman tanks, 'Kangaroos', tanks that had been converted into infantry carriers, 'Ark' tanks that, immersed in a canal or river, formed a bridge across which the other varieties of armour crossed, and bulldozing tanks.

In North-West Europe the Allied armies that had made their perilous landings on the Normandy beaches were hammering at the German defences beyond the Rhine. The Russians had swept the Germans from their soil and had rolled across Poland and through the Balkans to press into Germany from the east. All hopes of a German victory had faded; for them nothing remained possible save to continue the conflict until,

maybe, dissension among the victors would enable them to escape complete defeat. For the victors political objectives now overtopped the purely military in importance. The task of 15 Army Group was that of destroying the strong German-Italian army in the valley of the Po before it could withdraw into the stronghold of the Bavarian Alps—the Southern Redoubt—beyond the Adige. A defensive line, long prepared, awaited this army. It ran between Lake Garda, where it linked up with the Apennines, through Verona to Vicenza on to the Adriatic. The River Adige which covered this position was some 300–500 feet wide and in itself constituted a formidable barrier.

With the Germans were serving six Italian Republican Fascist divisions, but not less than 50,000 armed and organised Partisans were engaged in harassing the Axis garrisons. In February Eighth Army plans for the coming offensive were disturbed by the news that Canadian I Corps was to leave Italy for N.W. Europe and that 1st, 5th and 46th Divisions, in the Middle East and Greece, would not be returning to Eighth Army. This depletion of strength was paralleled by the transfer of two German divisions from Italy.

As soon as the weather permitted, the Allied Air Force in Italy began to strike at the German lines of communication and by the beginning of April the damage caused by this persistent aerial bombardment was causing great disruption.

The Genghis Khan line in which the Axis force stood ran from west of Vergato across the Reno, Monte Sole and Monte Adone, between the two roads to Bologna, eastward over the mountain tops north of Belmonte and Monte Grande to the line of the Senio, across the lower valley of the Po to the southern shore of Lake Comacchio. Behind this line lay the prepared defences on the lines of the Rivers Po, Ticino and Adige. In U.S. Fifth Army's sector on the left was U.S. IV Corps with a frontage of some seventy miles. On its right, packed into a front of twenty miles, was U.S. II Corps. From Monte Grande to the Adriatic stood Eighth Army with XIII Corps on the left, then X Corps, Polish II Corps and V Corps, the last about Lake Comacchio.

EIGHTH ARMY

The Order of Battle of Eighth Army as at April 9 is given in Appendix XXII.

Orders for the final battle were issued by General Mark Clark on March 24. Eighth Army was to attack on April 9 and U.S. Fifth Army on the 12th. In the first phase Eighth Army was to cross the Senio and the Santerno while U.S. Fifth Army broke into the valley of the Po after isolating or capturing Bologna. In the second phase the Axis forces were to be encircled south of the Po and in the third the Po would be crossed and Verona captured.

V and Polish II Corps were to attack across the Senio to secure bridgeheads beyond the Santerno from which V Corps would advance towards Bastia and Argenta, though N.Z. 2nd Division might be directed westward to Budrio to give support to U.S. Fifth Army. The Polish Corps was to advance on two axes, to Medicina on the right in the direction of Budrio and to Castel San Pietro on Route 9. V Corps, using 56th Division and 2nd Cdo. Bde., was also to undertake preliminary operations around the reedy shallows of Lake Comacchio and the flooded countryside to the south and west of it and be prepared to mount certain amphibious operations to capture the crossings of the Reno at Bastia and Anerina or, alternatively, to capture the Spit in a movement round the north of Lake Comacchio or to turn and capture the Argenta Gap in conjunction with 2nd Para. Bde.

X Corps was to advance, as opportunity presented itself, to Route 9.

XIII Corps was to hold its ground and keep Indian 10th Division ready to move either into Army Reserve north of Route 9 or else to launch a limited attack north-eastwards from Monte Grande.

On the night of April 1/2, 2nd and 9th Cdos. in 'Fantails' made for the western shore of the Spit across Lake Comacchio but the carrier tanks stuck in the mud. The troops were transferred to stormboats which were man-handled over the mud in the dark. Behind a barrage and under cover of a smoke screen the commandos landed while 43rd R.M. Cdo. moved overland on to the narrow tongue of the Spit. By the 4th the greater part of the Spit had been taken. On April 5 a squadron of the Special Boat Service captured the islands in the lake and, on the 6th, 56th Division crossed the Reno to occupy the 'Wedge' between the river and the southern shore of the lake.

On April 9, following an exceedingly heavy air and artillery bombardment of the German positions, the assaulting infantry advanced, supported by 'Crocodiles', the New Zealanders on the left and Indian 8th Division on the right. The former quickly crossed the Senio and went forward into dense dust clouds that obscured the artificial moonlight that the searchlights were projecting. On the right the Indians had to fight bitterly to overcome the opposition provided by the stoutly defended strongpoints along the flood banks of the river, but by dawn both Ind. 19th and 21st Bdes. were across. On the left of the New Zealanders, the Poles, crossing the Senio by way of the bridges the New Zealanders had constructed, broke out of the bridgehead. Three squadrons of 48th R.Tk. Regt. crossed the river in Ind. 21st Bde's sector. By 1000 hours on April 10 the Germans in front of the Poles were disengaging and the New Zealanders and Indians had reached the line of the Canale di Lugo. Lugo itself had been captured, 78th Division was in Cotignola and the Italian Cremona Group, having passed through

Fusignano, was heading for Alfonsine. By late evening the New Zealanders were within a thousand yards of the Santerno.

By the early morning of April 11, N.Z. 5th Bde. was a mile to the west of the Santerno. N.Z. 6th Bde., overcoming stubborn opposition, later joined the 5th Bde. and the division then moved forward to reach the outskirts of Massa Lombarda. Indian 8th Division crossed the Santerno under heavy fire and by the evening of the 12th was level with N.Z. 2nd Division in front of Massa Lombarda. To the north the Italian Cremona Group, having occupied Alfonsine, moved along Route 16 to reach the Santerno. 56th Division, on the extreme right, advanced towards Bastia to find the Germans in strength and determined to hold this vital approach to the valley of the Po.

General McCreery now decided to break through the Argenta Gap on the shortest route to the Po. 78th Division of V Corps was to make the direct assault while 56th Division, reinforced by 2nd Cdo. Bde. and 9th Armd. Bde. attacked across the floods to secure the bridges that carried Route 16 over the Reno at Bastia. The dry gaps through this waterlogged countryside were heavily mined but information relating to the mined areas had been secured by the Partisans. 56th Division's plan was to embark two battalions of 169th Bde.—the Queens—in 'Fantails' from the 'Wedge' and to despatch them to seize the village of Menate, while 40th R.M. Cdo. on the right of the brigade advanced on the dykes to capture a bridge north of Menate and thereafter proceed along the Strada della Pioppa. Meanwhile 167th Bde. would advance along the Reno towards Bastia and thence northward to join up with 169th Bde. The bridge beyond Menate was captured before dawn on April 11 and 169th Bde. made good progress to establish itself along the road from Longastrino through Menate and northwards to a junction with the Commando. 167th Bde. joined 169th Bde. at dawn on the 12th.

During April 12, 169th Bde. pushed some two miles along the Strada della Pioppa to approach Filo on the Menate-Bastia road, while 167th Bde. moved along the Reno for about four miles, to be checked near the confluence of the Santerno. 78th Division then moved into the bridgehead of Indian 8th Division beyond the Santerno and 36th Bde., supported by armour, advanced therefrom to reach the Scolo Fossatone. 38th Bde. and 2nd Armd. Bde., following 36th Bde., were held up for a time by the shelling of the bridges across the Santerno but pushed on to reach San Patrizio and Conselice, which was found to be strongly defended.

On April 13, 38th Bde., supported by armour, advanced against the bridge at Cavamento. As the attack developed the Germans blew the bridge but failed to demolish it completely and two troops of tanks managed to get across. At Conselice 36th Bde. made no progress until

the Germans withdrew to the line of the Sillaro. 9th Cdo., embarking in 'Fantails' at Menate, then tried to get across the flooded area in front of Chiesa del Bando but failed to do so and landed on the Strada della Pioppa only about a thousand yards ahead of 36th Bde. On the left the New Zealanders had been advancing rapidly from Massa Lombarda to reach the line of the Scolo Correcchio.

Since the further advance of V Corps must be split by the Argenta marshes N.Z. 2nd Division was now placed u/c XIII Corps. V Corps was to advance on a front of two divisions, 56th on the right against Chiesa del Bando and Portomaggiore and 78th Division on the left against Argenta and along Route 16.

On April 14 the New Zealanders continued their irresistible advance to cross the Sillaro. 78th Division reached the Reno south-east of Bastia and 56th Division improved its positions near the Fossa Marina, captured Filo and got to within a mile or so of Bastia.

On April 15, 56th Division attacked at dawn. 169th Bde. advanced through the floods for two and a half miles before it was checked by minefields. 24th Guards Bde., attempting to cross the Fossa Marina, ran into serious trouble and its attack had to be abandoned. 167th Bde. occupied Bastia on the 16th and 11th Bde. of 78th Division then went into the lead, heading for Argenta. 24th Guards Bde., trying again, got across the Fossa Marina.

On April 17, 36th, 38th and 2nd Cdo. Bdes. all made substantial progress in front of Argenta and, on the 18th, 36th Bde. passing through 38th Bde. struck north-west against Boccalone and Consandolo on Route 16 beyond Argenta while on the flood banks to the west the R.M. Cdo., taking over from 2nd Cdo., gained a thousand yards to come level with Sant' Antonio before being forced to withdraw. On the eastern flank of the attack 24th Guards Bde. captured Chiesa del Bando and closed on the strongly held Fossa Benvignante.

On April 19, 2nd Armd. Bde. in 'Kangaroos' broke out on the right of Route 16 to engage German armour in the open country east of Consandolo. A bridge over the Fossa Benvignante was captured and across it armour passed. The New Zealanders had attacked the line of the Sillaro on the 13th and had established themselves on the far side by dawn on the following day. The Poles had taken Imola and had reached the Sillaro on the 15th. Indian 43rd Lorried Infantry Bde., u/c Polish Corps, had got across but was driven back, but during the night of April 15/16, Polish II and XIII Corps attacked and the Poles secured a firm bridgehead. On April 16 an advance of some four thousand yards was made and by the evening of the 17th the New Zealanders were on the line of the Gaiana Canal.

Indian 10th Division now arrived in the line. Ind. 43rd Lorried Infantry Bde., which had captured Medicina, passed to command of

N.Z. 2nd Division. The Poles captured Castel San Pietro on Route 9 on April 17 and by the evening of the following day had reached the line of the Gaiana Canal.

On the night of April 18, Polish II and XIII Corps stormed the line of the canal. The Idice was crossed unopposed. The Poles entered Bologna on the early morning of the 21st, a few hours before the Americans arrived. The New Zealanders reached the Reno and made contact with S.A. 6th Armoured Division of U.S. Fifth Army. All through the 20th, Indian 10th Division fought on the line of the Idice but during the night the Germans disengaged and the Indians continued their advance.

On April 19, 6th Armoured Division passed through 36th Bde. to secure crossings over the Po di Primaro between Tragheto and San Nicolò. 78th Division entered Portomaggiore and established two bridgeheads over the Scolo Bolognese while 36th Bde. gained a crossing at Portoverrara. All three divisions encountered very stubborn resistance but at length the Po di Primaro was crossed at Tragheto and Segni on the Fossa Cembaline and Poggio Renatico reached. 38th Bde. crossed the San Nicolò Canal to reach the village of Montesanto before dawn on the 21st. The villages of Cona and Quartesana having been taken, 36th Bde. then moved forward on the left of 38th Bde. By first light on the 22nd, 24th Guards Bde. was in contact with the enemy on the Po di Volano at Sabbioncello. The river was crossed without serious difficulty. Partisans occupied Comacchio and Porto Garibaldi north of the Comacchio Spit when the Germans withdrew on the 21st.

19th Bde. of Indian 8th Division relieved units of 6th Armoured Division at San Nicolò and these then moved on to Poggio Renatico, preparatory to an advance on Mirabello, and also prepared to thrust to Bondeno, ten miles north-west of Ferrara. Bondeno was entered during the evening of April 22, by which time Ind. 19th Bde. on Route 16 had reached the Po di Volano on the southern outskirts of Ferrara and was in possession of a bridge across the river. By the evening of the 22nd seven brigades of 78th and 56th Divisions were on the line of the Po di Volano and its canals and Ferrara was threatened from two sides.

On April 23, 167th Bde. fought hard for a crossing over the Canale Naviglio while the Guards Bde. extended its front north-eastward to make contact with the Cremona Group which had been sent to reinforce the Partisans. 78th Division fought for a crossing over the Po di Volano south of Fossalta while Indian 8th Division captured the Ferrara airfield and 6th Armoured Division, passing under command of XIII Corps, made contact with S.A. 6th Armoured Division at Finale Emilia, west of Mirabello.

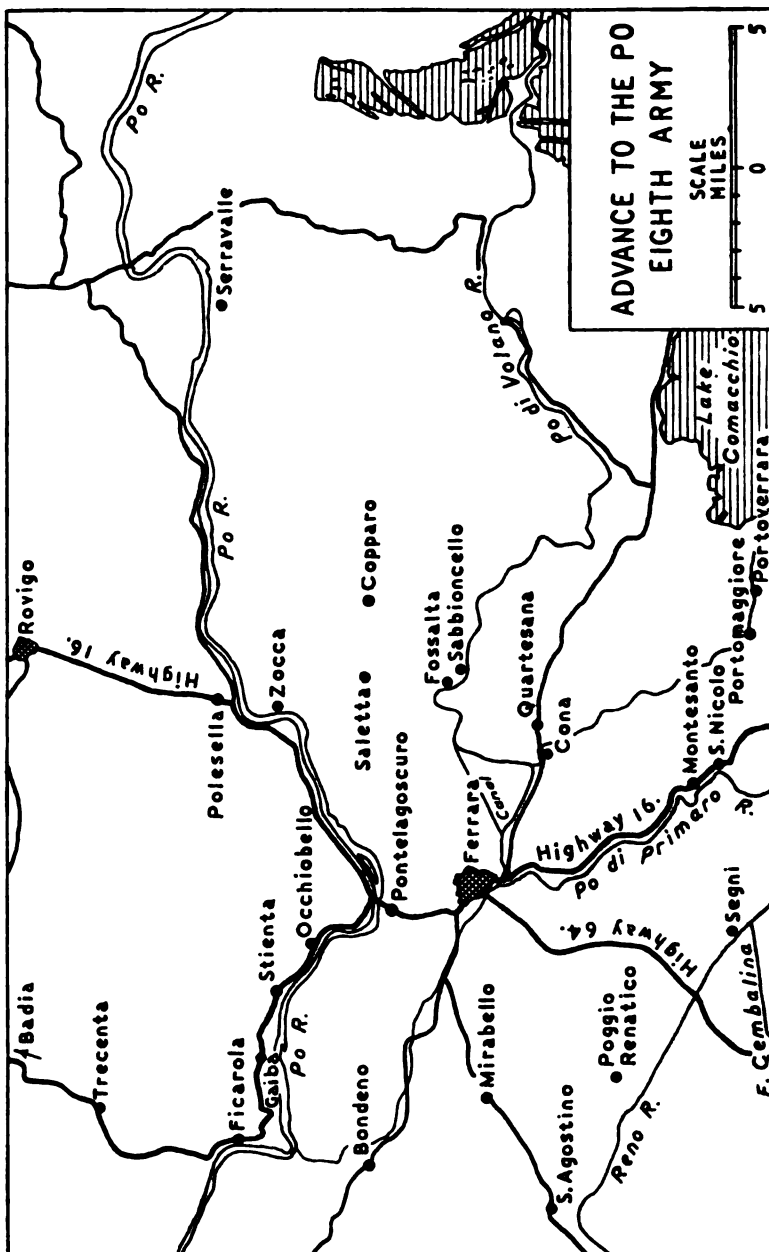


FIG. 115. Eighth Army. The Advance to the Po.

Since the night of the 18th, the Air Force had been attacking the crossing places and assembly points on the Po di Volano and on the night of the 22nd did particular damage to pontoon bridges and rafts and the German divisions east of Ferrara were trapped. Indian 8th Division entered Ferrara on the 24th, 38th Bde. captured Saletta after bitter fighting and pressed on towards the river at Zocca, 2nd Armd. Bde. drove westward towards Pontelagoscuro and then turned at right angles to its previous direction to thrust deep into the disorganised remnants of the German divisions.

On April 25, organised resistance ceased and by dusk V Corps had cleared the ground on a stretch of twenty-five miles from Stienta to Serravalle, except for a small pocket south of Polesella. On this day the Germans in front of V Corps surrendered. In XIII Corps sector 6th Armoured Division crossed the Po at Stienta and the New Zealanders at Gaiba to reach the Adige during the afternoon of the 26th and to establish a bridgehead across it by the following morning. 6th Armoured Division reached the Adige on the 27th. On V Corps front Indian 8th Division crossed the Po at Pontelagoscuro and at Occhiobello before midnight on the 24th and advanced to the Adige on Route 16 while 56th Division crossed east of Polesella to reach Rovigo and to cross the Adige by the evening of the 26th. Near its mouth the Cremona Group crossed the Po on the 25th.

On the 28th, V and XIII Corps resumed their advance. XIII Corps with 6th Armoured Division, N.Z. 2nd Division, Ind. 43rd Lorried Inf. Bde. and three armoured units headed for Trieste while V Corps with 56th Division moved on Venice. Padua was captured on the 29th and after a brief action at Mestre by the New Zealanders and 56th Division, Venice was occupied on the same day. Along the coastal road N.Z. 2nd Division made rapid progress on May 1 and met units of the Yugoslav forces at Monfalcone. 6th Armoured Division, advancing swiftly into the foothills of the Dolomites, reached Treviso, there to meet the Americans, Udine and Belluno. In this area there were large and scattered German formations which had so far received no orders to cease fire and so there was fighting on the 2nd. 6th Armoured Division thrust northward from Udine to Tarvisio, entered Caporetto and made contact with the Yugoslavs in Cividale del Friuli. In Trieste the Germans surrendered to the New Zealanders.

News of the unconditional surrender of the German South-Western Army Group, formally signed in the great palace of Caserta at noon on May 2, reached the forward troops of Eighth Army that night, six hundred days after the assault landings on the Calabrian shore.

But though the war had been won and a powerful, resolute and highly skilled enemy beaten, for Eighth Army there was no immediate relaxation for the Yugoslavs were threatening to take by force Italian

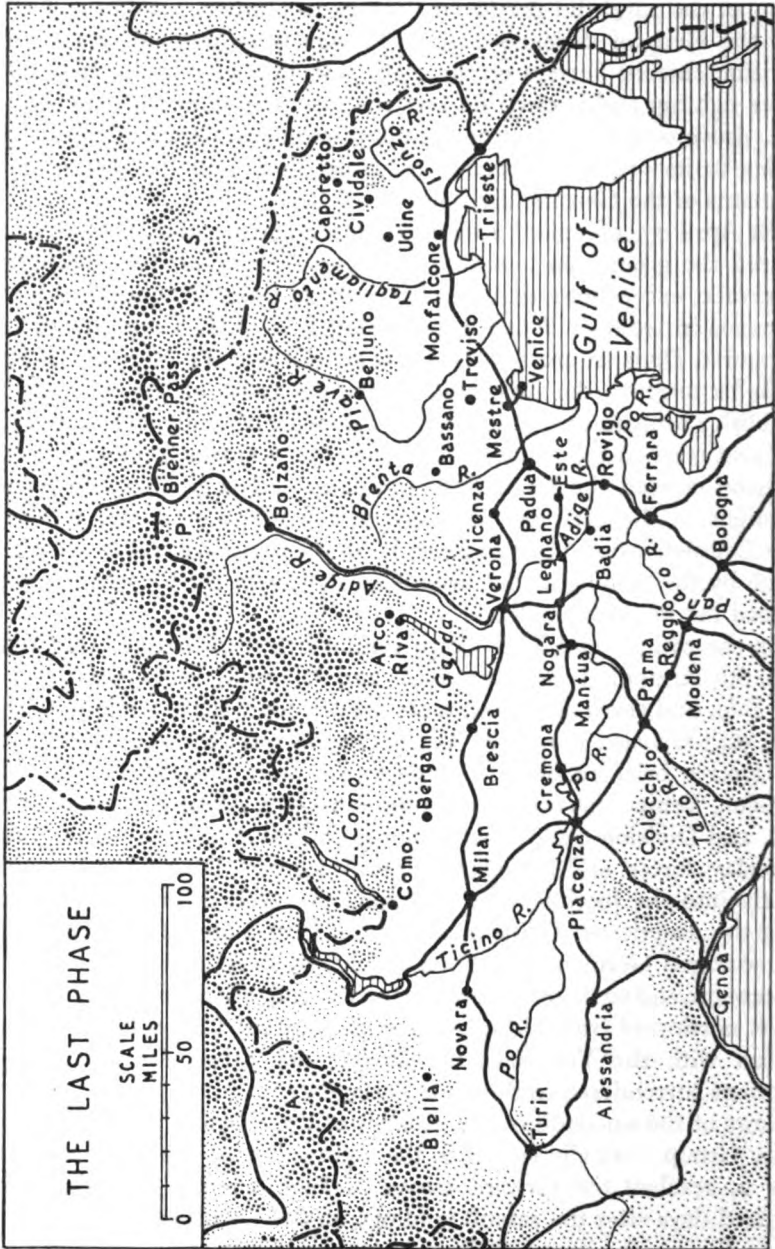


FIG. 116. The Last Phase.

territory in Venezia Giulia and Austrian territory near Klagenfurt and Villach.

The agonies of war now gave place to the arguments of victory. Six British, one New Zealand, an Indian and two U.S. divisions moved into these regions. In June the Yugoslav troops were withdrawn from Austria and Yugoslav control over the Istrian peninsula was relinquished. United Kingdom forces occupied the provinces of Carinthia and Styria.

U.S. FIFTH ARMY

A preliminary attack in the Ligurian coast sector began on April 5. U.S. 92nd Division occupied Massa on the 10th and secured a bridge-head across the Carrione on the 12th. Carrara was evacuated by the Germans on the 11th. Monte Brugiana was taken. On April 14, following a heavy attack by fighter-bombers and a great artillery barrage, U.S. 10th Mountain Division on the right of U.S. IV Corps sector opened the main offensive from Castel d'Aiano between Montese and Vergato on Route 64. The Brazilians and U.S. 1st Armoured Division were soon committed and by the 16th the Germans had been driven back to the line of the Panaro, Tole was taken and 10th Mountain Division pressed on to open the way into the valley of the Samoggia. Monte Moscoso, Monte Vignola and the village of Montepastore were occupied.

U.S. II Corps on the right had also advanced, though more slowly. It was in this sector that the defences were strongest. Monte Sole on the east bank of the Reno, Monteramici and Mont' Adone west of Route 65, Pianoro on the main road itself and the hills beyond Monte Belmonte were all strongholds of the German defence line. Monte Sole, Monteramici, Mont' Adone and Pianoro were the first objectives and it was intended when this mountain line had been pierced that the advance would be north-westward to the road junction at Praduro on Route 64, whence, according to circumstances, the attack might be continued either to the east or to the west of the Reno.

During the afternoon of April 15 Allied bombers and fighter-bombers assailed the German positions and shortly before midnight the guns laid down a terrific barrage as U.S. 88th Division advanced against Monte Sole and Monteramici. Four hours later U.S. 91st and 34th Divisions moved to assault Mont' Adone, Pianoro and the ridge of Sevizzano. Despite all the bombardment the resistance encountered was very strong and only on the left, where S.A. 6th Division captured Monte Sole, Monte Caprara and Mont' Abelle, was success of any magnitude achieved.

On April 17 the battle for Monteramici was resumed and the height was taken. An assault on Mont' Adone failed, as did that against the ridge west of Furcoli. However, a resolute night attack was successful and by the morning of the 18th the ridge had been taken.

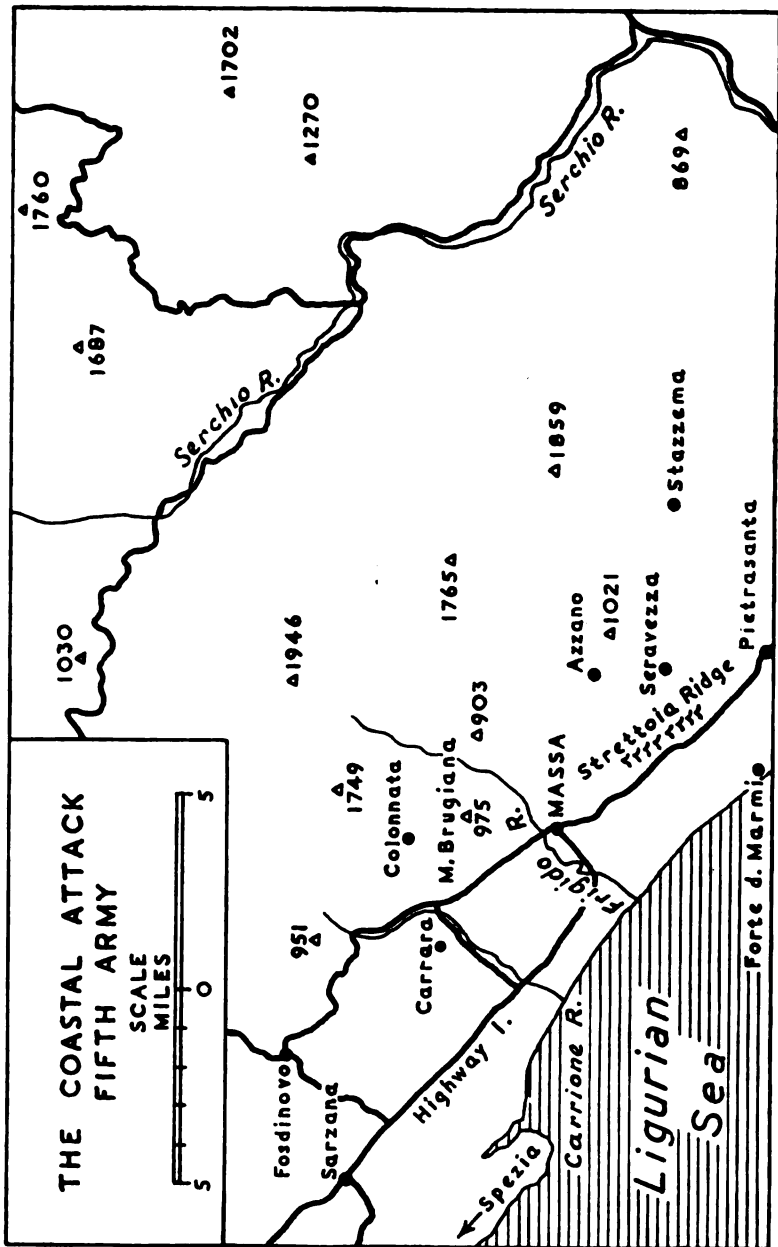


FIG. 117. U.S. Fifth Army. The Coastal Attack.

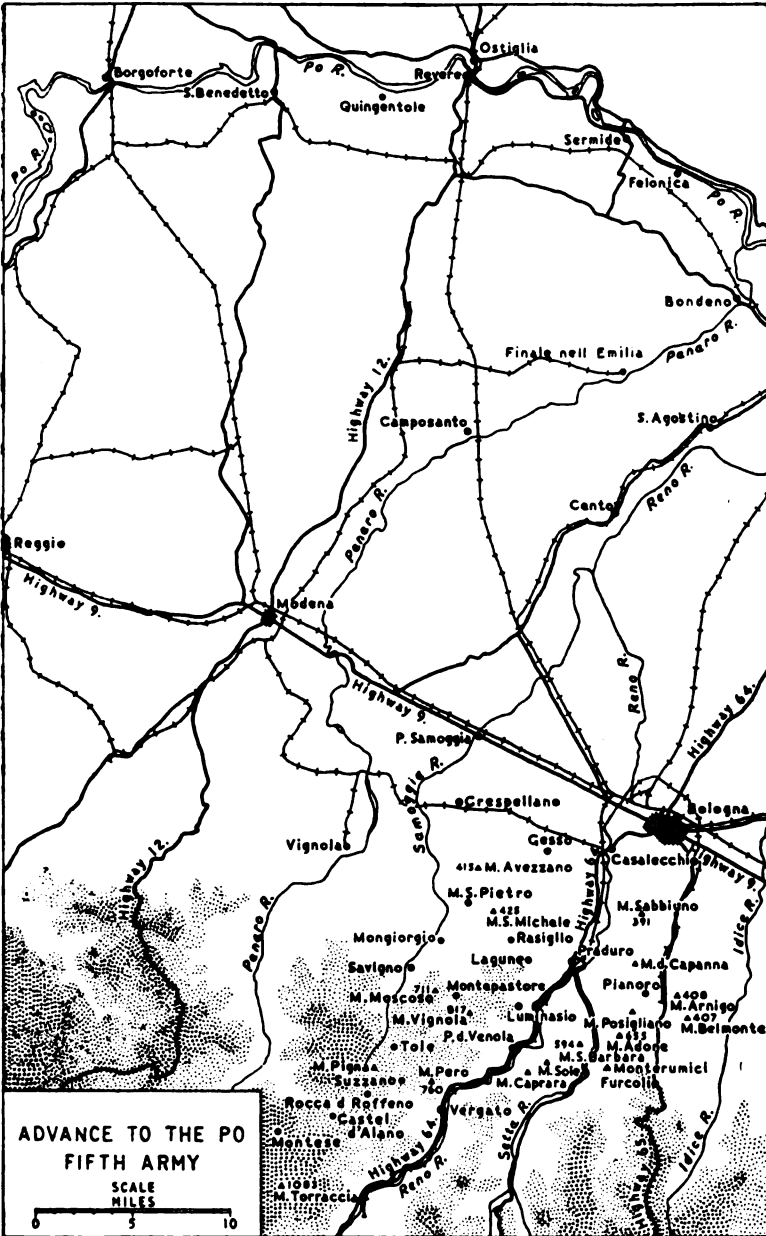


FIG. 118. U.S. Fifth Army. The Advance to the Po.

The Germans in front of U.S. II Corps now began to withdraw, for their positions were becoming untenable owing to the advance of Eighth Army up Route 9 from the east and to U.S. IV Corps' success in the west. U.S. 10th Mountain Division was already moving on to the last foothills above the plain of the Po. Between the Reno and the Samoggia the German defences were crumbling. Into U.S. 1st Armoured Division's sector U.S. 85th Division from Army reserve was committed to maintain U.S. IV Corps' northward advance on the right while a combat command of the armoured division moved to Tole.

On April 18, U.S. 86th Mountain Infantry advanced from Montepastore and fought its way to the neighbourhood of Sulmonite and San Chierlo. The Brazilians relieved U.S. 85th Mountain Infantry, who moved up to San Chierlo and on the 19th advanced to Monte San Michele. The German withdrawal became a rout and all available armour was congregated for the pursuit. In the afternoon of the 19th, U.S. 85th Infantry held a road junction three miles to the north of Monte San Michele. To the left U.S. 87th Mountain Infantry, after savage fighting at Mongiorgio, advanced through Monte San Pietro almost as far as Monte Avezzano and U.S. 86th Mountain Infantry in the centre stood on a defensive position north of Monte San Michele. On the evening of the 19th all three regiments were in line and looking down over rolling hills into the valley of the Po. On the morning of the 20th they moved forward and against negligible opposition U.S. 86th Mountain Regt. crossed Route 9 and seized Ponte Samoggia, U.S. 87th Mountain Regt. on the left fought its way to the village of Pradalbino, north of Monte Avezzano, but U.S. 85th Mountain Infantry on the right was only slightly opposed. In a week's fighting U.S. 10th Mountain Division had broken the enemy's main defences and made an advance of sixteen miles.

On the right U.S. 85th Division quickly captured Luminasio. To the north on the Lagune ridge there was serious resistance and the advance was hindered by U.S. II Corps' general movement to the west which brought U.S. 88th Division across U.S. 85th Division's right boundary and pinched out U.S. 338th Infantry to make room on Route 64 not only for the 88th but also for S.A. 6th Armoured Division. U.S. 85th Division was now ordered to make a wide sweep to the right, across the front of U.S. 88th Division and of S.A. 6th Armoured Division, to cut off the German retreat on Route 64 and capture Casalecchio, a western suburb of Bologna.

U.S. 1st Armoured Division had advanced with difficulty along overcrowded roads but reached the valley of the Samoggia on the 18th and thereafter made substantial progress against varying opposition. On the morning of the 21st, American tanks were in Crespellano, due south of Ponte Samoggia. Three divisions of U.S. IV Corps were now debouch-

ing from the hills into the plain and on their right U.S. II Corps had broken through the defences south of Bologna. On April 19 the advance of U.S. II Corps was small, but it gained speed on the 20th and on the 21st Bologna, entered earlier that morning by the Poles, was reached.

On April 21, U.S. Fifth Army, with U.S. II and IV Corps abreast and each of these disposing an armoured division and two infantry divisions, continued its advance against an enemy who was showing unmistakable signs of disorganisation. The Allied Air Force took full advantage of the opportunities presented by an enemy who disregarded all precautions and moved by day along roads choked with transport. The possibility that the Germans could get beyond the Po, there to assemble an organised force, swiftly vanished.

U.S. Fifth Army reached the Po on April 24, having encountered negligible opposition, and by darkness on that day was holding the south bank on a front of sixty miles from the River Taro west of Parma to the inter-army boundary at Felonica, fifteen miles north-west of Ferrara. The crossing of the Po was nowhere seriously contested and the foremost divisions were instructed to drive forward as far and as fast as they could. The Partisans were now vigorously active.

In U.S. IV Corps sector U.S. 10th Mountain Division moved swiftly to Villafranca and thence to Verona, to find U.S. 88th Division already in possession. It then moved north along the east side of Lake Garda to close the roads to the Brenner Pass. U.S. 85th Division crossed the Adige west of Verona and entered the defensive positions of the Adige line. U.S. 34th Division moved into Modena, advanced along Route 9 and fought its way into Reggio, occupied Parma and moved on Piacenza which was entered on the 28th. Here the Partisans were already in control. The Brazilians advanced to Collecchio on the 26th and on the 29th captured two divisions with their generals.

In U.S. II Corps sector U.S. 88th Division raced to Verona, which it took on the 26th. U.S. 91st Division reached the Adige, took Legnano and began to cross the river while the South Africans, crossing the Po at Felonica, moved on to Legnano prior to heading north-east towards Longare, south of Vicenza.

By the 26th the German forces were split into two. U.S. 10th Mountain Division had closed the roads to the Brenner Pass between Verona and Lake Garda. U.S. 85th Division, on its right, was moving through Verona to attack the line of the Adige. On its left U.S. 1st Armoured Division was moving northward to Brescia and Lake Como and clearing the country north of Parma. U.S. 34th Division had reached Piacenza and on the Ligurian coast U.S. 92nd Division was moving on Genoa.

U.S. II Corps was now instructed to advance eastward from Verona to Vicenza to block the roads of escape from the Adriatic littoral and

U.S. IV Corps to send a division along the eastern shore of Lake Garda to Bolzano and the Brenner Pass and to drive north-west to Como with U.S. 1st Armoured Division.

The countryside was swarming with German troops, but such was the disorganisation that no coherent opposition was encountered. U.S. II Corps crossed the Adige on a broad front and Vicenza was captured on the 28th. U.S. 88th Division spread into the valleys of the Brenta and Piave north of Bassano and Treviso while U.S. 91st Division drove eastward to enter Treviso on the 30th. On the 29th, S.A. 6th Armoured Division made contact with Eighth Army at Padua and, crossing the Brenta, reached an area south-west of Treviso. The division then prepared to move westward again to Milan.

On the east shore of Lake Garda U.S. 1st Armoured Division had been fiercely opposed, but by the 30th the towns about the head of the lake were reported clear. On May 2, U.S. 86th Mountain Infantry established a road block at Arco, five miles up the valley of the Sarca from Riva. U.S. 1st Armoured Division moved through Brescia and Bergamo to Como on the 28th and, on the 29th, found Milan in the hands of Partisans. U.S. 34th Division, assembling near Brescia, drove swiftly on to Novara, twenty-five miles west of Milan, and to Biella.

On the Ligurian coast U.S. 92nd Division advanced as the Germans withdrew. The Germans in Genoa surrendered to Partisans on April 26 and the Americans occupied the city on the following day. Alessandria, thirty miles to the north, with its garrison was taken on the 28th and contact was made with the Brazilians. Partisans were in control of Turin by the 30th and on this day U.S. 92nd Division made contact with French colonial troops between Ventimiglia and Menton. On April 29 negotiations for an armistice were opened and the surrender of the German and Italian formations began.

In the closing phase of the campaign the responsibilities of the British Increment, U.S. Fifth Army were restricted to S.A. 6th Armoured Division, 215 and 216 Sub-areas, 66th A.A. Bde., 7th A.G.R.A. and a division and three groups of Italian troops.

British Increment, U.S. Fifth Army closed on June 23, 1945.

OPERATION 'BUCKLAND' MEDICAL APPRECIATION

EIGHTH ARMY

- (a) Strength of Eighth Army at the beginning of the operation was approximately 290,000 and with the arrival of XIII Corps rose to 334,000 by April 12.
- (b) Army and Corps medical units available on April 9:

THE CAMPAIGN IN ITALY

471

	<i>Br.</i>	<i>N.Z.</i>	<i>Ind.</i>	<i>Pol.</i>	<i>Ital.</i>	<i>Totals</i>	<i>Total Beds</i>
F.D.S.	8	—	—	—	—	8 × 50	400
C.C.S.	6	1	1	2	—	10 × 120	1,200
F.S.U.	13	1	1	4	2	21	—
F.T.U.	7	1	—	2	—	10	—
Gen. Hosp. (200-bed)	3	—	—	1	—	4	800
Gen. Hosp.	2	—	—	—	—	2	1,200
Ital. Hosp.	—	—	—	—	6	6 × 100	600
							4,200

With XIII Corps came one Indian C.C.S., two F.D.Ss., three F.S.U.s. and two F.T.U.s.*

(c) Estimate of Battle Casualties and Sick :

Battle Casualties

700 per day for first three days	2,100
400 per day for next seven days	2,800
	4,900

Sick

2/1,000/diem on a strength of 290,000 for first three days and then on a strength of 334,000	
Daily sick for first three days 580 × 3	1,740
Daily sick for next seven days 668 × 7	4,676
	6,416

Total Battle Casualties and Sick D-day to D-day+10 . . . 11,316

This estimate of battle casualties was produced by 'Medical' Eighth Army from a study of the figures for the Cassino and Gothic Line battles. It differed markedly from the 'G' estimate. In the event the actual figure for D-day was 902 and the total for the first ten days was 4,809.

(d) Surgical Teams available for the treatment of Priority I, II and III cases :

In F.S.U.s.	21
„ C.C.Ss.	10
„ 200-bed Gen. Hosps.	2
	33

* Though XIII Corps passed to Eighth Army for operational purposes, British Increment, U.S. Fifth Army continued to be responsible for its administration. In U.S. Fifth Army's sector of the front there were many British troops, A.A. units, field regiments, R.A. and the like, and for these Medical Branch, British Increment had to devise improvised systems of medical cover. A field dressing station was set aside for this purpose and M.A.C. or A.F.S. cars were attached to the widely scattered R.M.Os.

THE ARMY MEDICAL SERVICES

Since these could each deal with 16 operations a day for a prolonged period on a mixed intake of Priorities they could deal with 528 (say 500) cases daily.

These teams would probably have to average 20 operations a day for the first three days. Minor wounds would be dealt with by the surgeons in the Riccione and Ancona group of hospitals.

*(e) Evacuation.**Ambulance Cars.*

The following ambulance car units were available in Army and Corps areas :

	<i>Cars</i>	<i>T.C.U.s.</i>
Three British M.A.Cs. . . .	243	12
One Polish M.A.C.. . . .	75	
One Pln. N.Z. M.A.C. . . .	25	
One Indian M.A.S.	25	
One sec. British M.A.C. . . .	25	
	<hr/>	<hr/>
	393	12

These would undertake evacuation from the divisional field ambulance to 5 B.G.H. at Pesaro.

Rearward of Pesaro D.D.M.S. 1 District would assume responsibility.

Ambulance Trains.

These would run six days weekly from Forli or Rimini to Ancona. Average load, 180 casualties.

Air Evacuation.

Only serious wounded would be evacuated by air and their number was estimated to be about 200 per day.

Estimate of Daily Evacuation out of Eighth Army area for the first ten days :

Total sick and wounded for first ten days	. 11,316
Total beds . . . . .	. 4,420
	<hr/>
	6,896

It was therefore expected that an average of 690 cases would need to be evacuated out of Eighth Army area daily during the first ten days. It was realised that this was a generous estimate since it did not take into account the slightly wounded and the minor sick who could remain in Army area. In the event the wounded estimate turned out to be correct but the estimate of the sick was wide of the mark ; they averaged 470 per day.

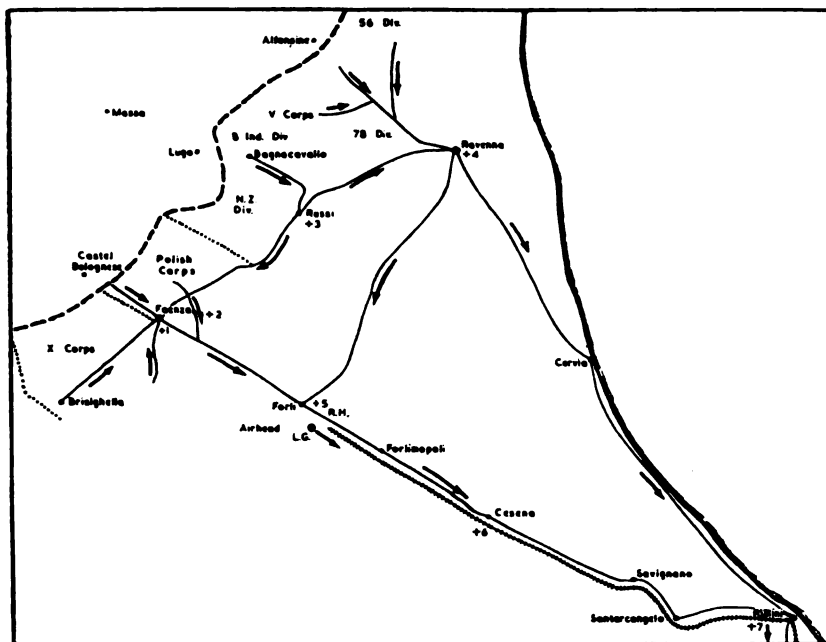


FIG. 119. Eighth Army. The Crossing of the Senio, April 9, 1945. The Surgical Plan and the Evacuation Routes.

- | | |
|--|--|
| 1. A.S.C. | 3 & 5 (Pol.) C.C.Ss. |
| 4 (Pol.) Fd. Amb. | 9 F.T.U. (Blood bank) |
| 2. A.S.C. | 4 C.C.S. at Air and Railhead |
| 3 (Pol.) Fd. Amb. | 6. 83 B.G.H. |
| 3. A.S.C. | 7. to |
| 57 F.D.S. | 66 B.G.H. Riccione (Specialist surgical teams) |
| 4. A.S.C. | 54 B.G.H. Miramare |
| 58 F.D.S. | 5 B.G.H. Pesaro |
| (Ind.) C.C.S. | 6 Pol.G.H. Riccione |
| 5. Evacuation Centre | 12 C.C.S. Riccione |
| 59 B.G.H. acting as A.S.C. for X Corps | 18 C.C.S. Cattolica |
| 5 C.C.S. 1 (N.Z.) C.C.S. | |

Evacuation. By rail from Forlì to Ancona for hospital ship.
By air from Forlì to Bari.
Army. Rearwards of Forlì and Ravenna.

EIGHTH ARMY MEDICAL ARRANGEMENTS

Forlì was the forward evacuation centre during the initial stage of the operation. In this town were established 59 B.G.H., 4 C.C.S., 5 C.C.S., 1 (N.Z.) C.C.S., 3 (Pol.) C.C.S. and 5 (Pol.) C.C.S. To Forlì

ambulance trains were called forward three times a week and up to 200 cases could be despatched to Bari by air each day. Evacuation by road was to 83 B.G.H. at Cesena and thence to the hospitals in the Rimini-Riccione-Pesaro area.

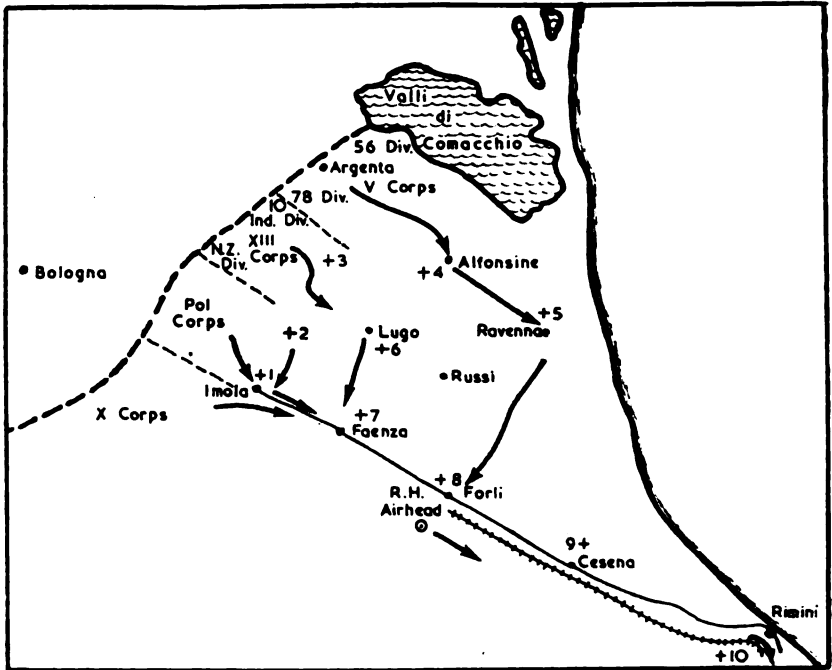


FIG. 120. Eighth Army. The Battle of the Argenta Gap. April 16-18. The Surgical Plan and Evacuation Routes.

- | | |
|------------------------------------|---|
| 1. A.S.C.
3 (Pol.) C.C.S. | 8. Evacuation Centre
59 B.G.H., 6 Pol.G.H.
5 C.C.S., 1 (N.Z.) C.C.S.
5 (Pol.) C.C.S. |
| 2. A.S.C.
5 (Pol.) Fd. Amb. | 9 F.T.U. (Blood bank)
4 C.C.S. at Air and Railhead |
| 3. A.S.C.
56 F.D.S. | 9. 83 B.G.H. |
| 4. A.S.C.
58 F.D.S.
1 C.C.S. | 10. to
66 B.G.H. Riccione
5 B.G.H. Pesaro
54 B.G.H. Miramare
18 C.C.S. Cattolica |
| 5. 9 (Ind.) C.C.S. | |
| 6. 3 (Ind.) C.C.S. | |
| 7. 4 (Pol.) Fd. Amb. | |

Evacuation. V Corps. Alfonsine-Ravenna-Forli
 XIII Corps. Lugo-Faenza-Forli
 Polish Corps. Imola-Faenza
 X Corps. Faenza-Forli
 Army. Rearwards of Forli.

Advanced surgical centres were established in the Polish Corps' sector at Barnaba by 3 (Pol.) Fd. Amb. with two F.S.U.s. and at Faenza by 4 (Pol.) Fd. Amb. with one F.S.U. All Polish casualties were evacuated to 3 or to 5 (Pol.) C.C.S. at Forli. British and Gurkha casualties from formations under command Polish Corps were evacuated to the British medical units at Forli, only Priority I and II cases being held in the Polish units.

All battle casualties from X Corps were evacuated to 59 B.G.H. in Forli.

When, on April 1/2, 2nd Cdo. Bde. (V Corps' sector) captured the Spit, the tongue of land projecting from the south-east borders of Lake Comacchio, casualties were at first evacuated by assault boat and later, when a bridge linking the Spit with the mainland had been constructed, by jeep ambulance and four-wheel-drive ambulances to the dressing station at Mandriole where a F.S.U. and a F.T.U. were functioning. 105 British and 66 P.o.W. wounded were thus evacuated.

Advanced surgical centres were established at Russi (57 F.D.S. with two F.S.U.s. and one F.T.U. attached) and at Ravenna (58 F.D.S. with two F.S.U.s. and one F.T.U.). These two units dealt with the bulk of the Priority I and II casualties. The rest were sent back to Forli to 59 B.G.H. or 5 C.C.S., Indian and Italian casualties to 9 (Ind.) C.C.S. at Ravenna and New Zealand casualties to 1 (N.Z.) C.C.S. at Forli. Light sick were sent to 67 F.D.S. at Cesenatico.

When the Senio was crossed 58 F.D.S. closed at Ravenna, leaving 50 seriously wounded to be taken over by 65 F.D.S. 58 F.D.S. together with 1 C.C.S. then moved to Lugo.

When V Corps' axis was changed to Argenta 58 F.D.S. and 1 C.C.S. moved to Alfonsine to deal with 56th and 78th Divisions' casualties. When the Argenta Gap was forced on April 18, 5 C.C.S. and 57 F.D.S. opened in Argenta.

When the final battle opened XIII Corps consisted of Indian 10th Division and the Folgore Gruppo. With Indian 10th Division was a detachment of 52 F.D.S. with two F.S.U.s. and a F.T.U. at Sassonero serving the troops on Monte Grande. Overflow cases from this F.D.S., as well as casualties from the Fontanelice sector behind Tossignano and Imola, were sent to 52 F.D.S. at Coniale. 3 (Ind.) C.C.S. was still in Borgo San Lorenzo and 8 C.C.S. was at Scarperia. Corps sick were treated at 56 F.D.S. at Borgo San Lorenzo. When a battalion of Lovat Scouts went into the line early in April in front of Casola Valsenio, an *ad hoc* A.D.S. was established by 55 F.D.S. in this town, the remainder of this F.D.S. forming an A.S.C. at Badia, half way between Casola Valsenio and Palazzuolo on the road to Marradi.

In preparation for the advance on Bologna 3 (Ind.) C.C.S. moved to Coniale and 52 F.D.S. closed and moved to Castel del Rio.

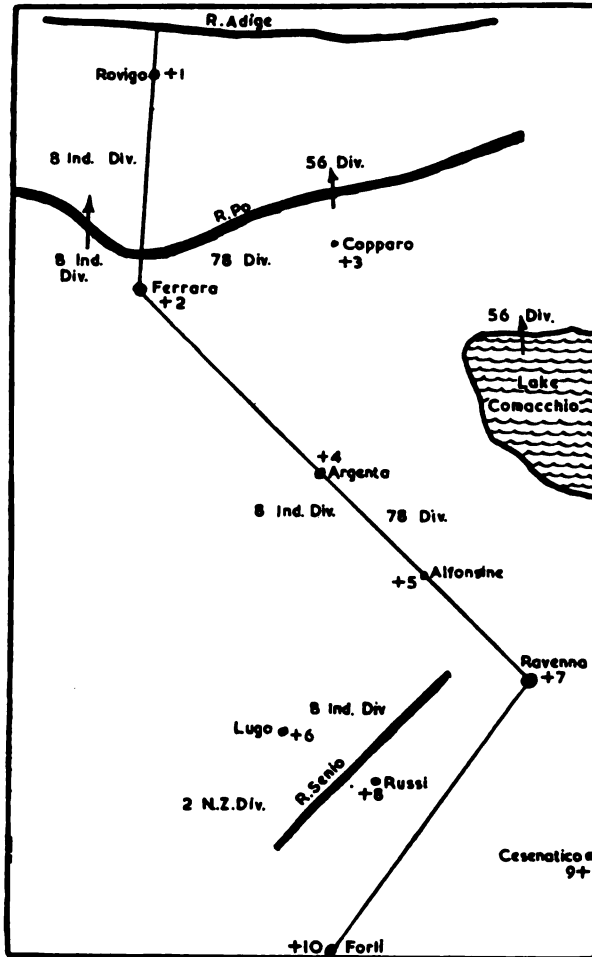


FIG. 121. V Corps. The Advance to the Adige. The Forward Movements of the Medical Units.

- | | |
|--------------------|---------------------|
| 1. 58 F.D.S. | 6. 58 F.D.S. |
| 4 C.C.S. | 1 C.C.S. |
| 2. 9 (Ind.) C.C.S. | 7. 9 (Ind.) C.C.S. |
| 65 F.D.S. | 65 F.D.S. |
| 3. 1 C.C.S. | 8. 57 F.D.S. |
| 57 F.D.S. | 9. 67 F.D.S. |
| 4. 5 C.C.S. | 10. 1 (N.Z.) C.C.S. |
| 5. 58 F.D.S. | 5 C.C.S. |
| 1 C.C.S. | |

On April 5, XIII Corps' rôle in the forthcoming battle was defined. It was to follow up behind the others. Main H.Q. XIII Corps moved to Belvedere. Indian 10th Division prepared to move to Eighth Army

along with the Folgore Group, leaving a few battalions on Monte Grande. 52 F.D.S. provided an *ad hoc* A.D.S. to serve these. A light section of 8 C.C.S. relieved 52 F.D.S. at Castel del Rio, which then moved forward to Sassonero. X Corps took over XIII Corps medical commitments and, on April 15, Main H.Q. XIII Corps moved to Lugo. D.D.M.S. V Corps accepted XIII Corps casualties for a period of twelve hours while D.D.M.S. XIII Corps accepted responsibility for V Corps immobles left behind. 56 F.D.S. opened in a school in Lugo with 3 (Ind.) C.C.S. nearby.

TABLE 32

Sick and Wounded admitted Eighth Army Medical Units

April 9-18

Wounded	.	4,303
Sick.	.	4,293
		<hr/>
		8,596

Evacuated out of Eighth Army Area

April 7-20

By Road	.	1,928
By Rail	.	1,234
By Air	.	1,687
		<hr/>
		4,849

It is evident, therefore, that the medical cover provided was adequate and that the evacuation arrangements were satisfactory.

For the operation for the crossing of the Po, April 18-May 2, V Corps established its A.S.C. (1 C.C.S. and 57 F.D.S.) at Copparo. Evacuation therefrom was *via* 5 C.C.S. at Argenta to the Forli hospital group. 9 (Ind.) C.C.S. moved into Ferrara on April 22.

XIII Corps now consisted of Indian 10th Division and New Zealand 2nd Division.

The advance was now fairly rapid, N.Z. 2nd Division moving up towards Bologna *via* Lugo-Medicina-Massa Lombarda, with Indian 10th Division on its right. Ind. 43rd Lorried Inf. Bde. was u/c N.Z. 2nd Division. Main H.Q. XIII Corps moved forward to Medicina on April 19, to Budrio on the 22nd, to S. Marco on the 23rd and to the vicinity of Ferrara on the 24th. 6th Armd. Division came u/c XIII Corps on the 23rd. 6th Armd. Division and N.Z. 2nd Division were now lining up along the Po. On the 28th, Main H.Q. again moved to south of the Adige and to Mestre on the 30th.

Since the medical services of N.Z. 2nd Division were almost independent, the Corps medical effort was concentrated upon Indian 10th Division. 55 F.D.S. took over from 56 F.D.S. at Lugo and 56 moved

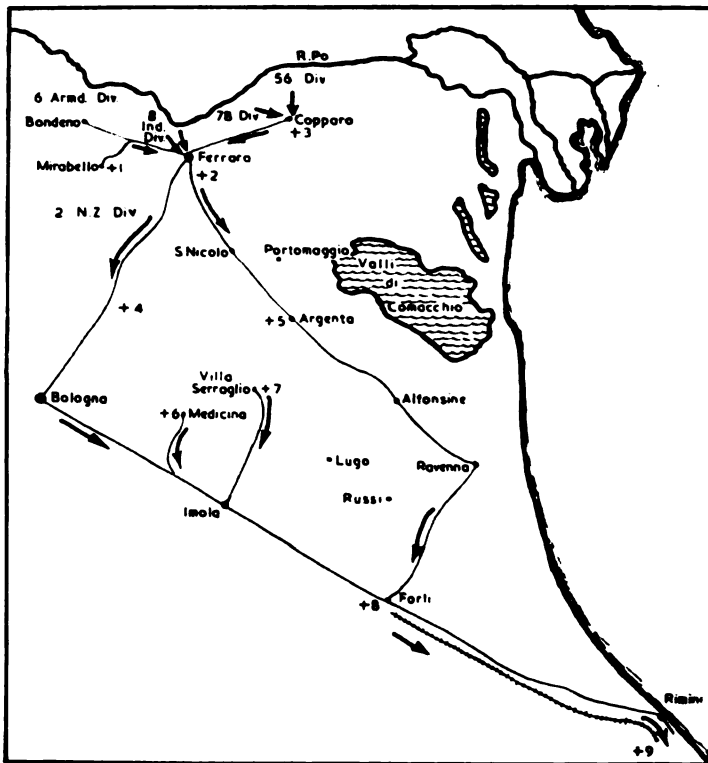


FIG. 122. Eighth Army. The Crossing of the Po, April 26-27. The Surgical Plan and the Evacuation Routes.

- | | |
|--------------------|--------------------|
| 1. A.S.C. | 5. 5 C.C.S. |
| 55 F.D.S. | 6. 19 C.C.S. |
| 2. A.S.C. | 7. 3 (Ind.) C.C.S. |
| 9 (Ind.) C.C.S. | 8. 59 B.G.H. |
| 3. A.S.C. | 9. to |
| 57 F.D.S. | 5 B.G.H. Pesaro |
| 1 C.C.S. | 54 B.G.H. Miramare |
| 4. 1 (N.Z.) C.C.S. | 66 B.G.H. Riccione |

Evacuation. V Corps. Ferrara-Argenta-Ravenna-Forlì
 XIII Corps. Ferrara-Bologna-Imola-Forlì or
 Medicina and Villa Serraglio-Forlì
 Army. Rearwards of Forlì

forward with Indian 10th Division to the vicinity of Serraglio, as did also 3 (Ind.) C.C.S., there to relieve 56 F.D.S. for forward work. 55 F.D.S. remained at Lugo to deal with the sick. 56 F.D.S. moved up to Selva alongside the battle M.D.S. of Indian 10th Division. On April 22, 3 (Ind.) C.C.S., 3 M.A.S. and 1 (Ind.) Mob. Surg. Unit were placed under command Indian 10th Division.

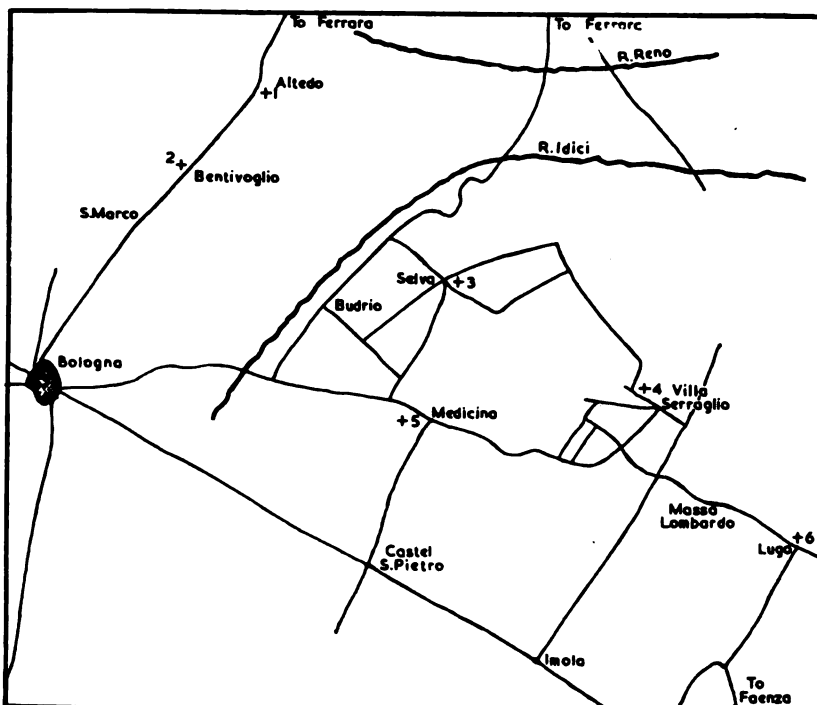


FIG. 123. XIII Corps. The Forward Movements of the Medical Units during the Final Battle (1).

- | | |
|---------------------------------------|-----------------------------------|
| 1. 56 F.D.S. April 25 | 5. 19 C.C.S. April 23 |
| 2. 3 (Ind.) C.C.S. April 28 | 6. 55 F.D.S., 56 F.D.S., 3 (Ind.) |
| 3. 56 F.D.S. April 21 | C.C.S. April 17 |
| 4. 56 F.D.S. 3 (Ind.) C.C.S. April 21 | |

For the crossing of the Po, 55 and 56 F.D.Ss. were brought up to the vicinity of Altedo and kept closed. On April 25, 55 F.D.S., with 10 and 28 F.S.Us. and 33 F.T.U., opened in Mirabello, taking over the school buildings from 14 Fd. Amb. of 6th Armd. Division. Then 19 C.C.S. opened a light section at Mirabello, relieving 55 F.D.S. which moved to Gaiba. Evacuation therefrom was to 56 F.D.S. at Mirabello. At this time, while the pursuit was on, the advance was rapid and many pockets of immobiles had to be looked after, a task that demanded much subdivision of the forward medical units.

For the operations leading up to and including the advance through Venezia Giulia, V Corps moved its A.S.C. to Padua (1 C.C.S., 57 and 58 F.D.Ss.). 4 C.C.S. passed under command V Corps and opened at Rovigo to stage casualties *en route* for Ferrara. Evacuation rearward of Ferrara became an Army responsibility.

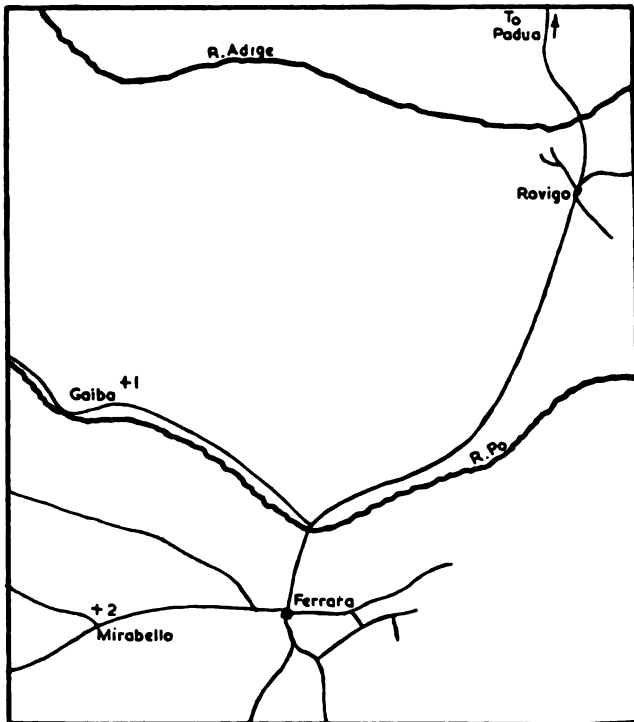


FIG. 124. XIII Corps. The Forward Movements of the Medical Units during the Final Battle (2).

- | | |
|-------------------------------|--------------------|
| 1. 55 F.D.S. detach. April 27 | 2. 55 F.D.S. |
| 19 C.C.S. April 28 | 56 F.D.S. April 24 |
| 52 F.D.S. May 2 | |

XIII Corps became the 'pursuit' corps. Its medical units became spread from south of the Po nearly to Trieste and for a long time D.D.M.S. Corps was out of touch with D.D.M.S. Army.

When the Adige was crossed there were :

(a) South of the Po :

Indian 10th Division
7th Armd. Bde.
N.Z. Armd. Bde.

3 (Ind.) C.C.S.
1 (Ind.) Mob. Surg. Unit
3 M.A.S.

all under the operational and administrative control of Indian 10th Division. To this area were allotted 56 F.D.S., 35 F.S.U. and 12 F.T.U. u/c Eighth Army.

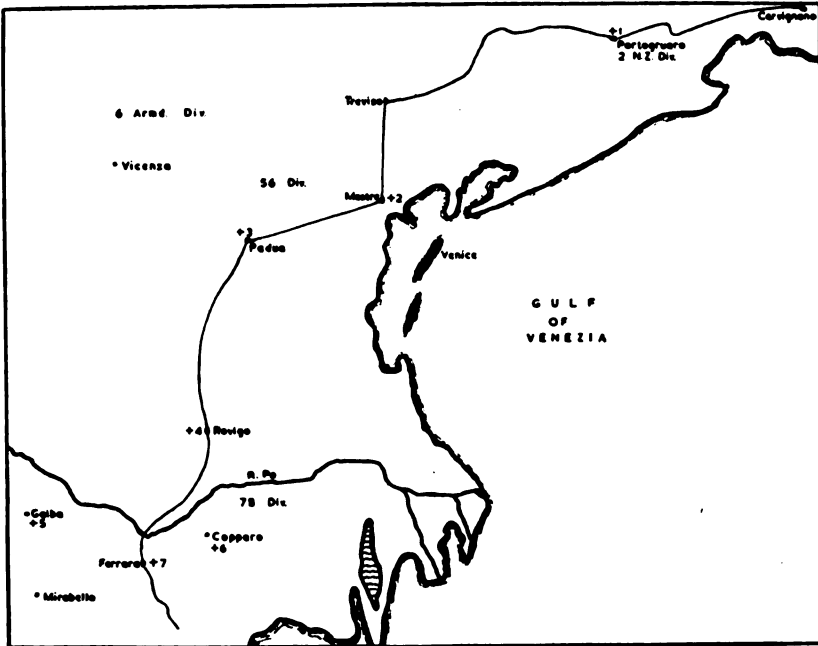


FIG. 125. Eighth Army. The Surgical Plan and Evacuation Chain as at May 2, 1945.

- | | |
|-----------------------|-------------------------------|
| 1. 55 F.D.S. | 4. 4 C.C.S. |
| 2. 67 F.D.S. | 58 F.D.S. |
| 12 C.C.S. | 5. 19 C.C.S. |
| 3. 19 C.C.S. Lt. Sec. | 6. 1 C.C.S., 57 F.D.S. |
| | 7. 54 B.G.H., 9 (Ind.) C.C.S. |

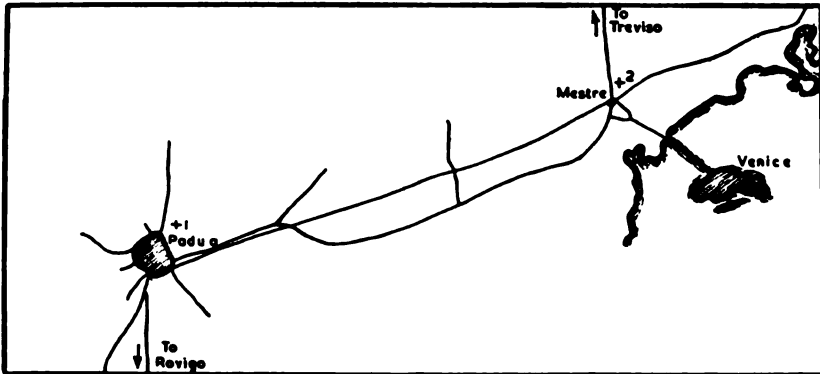


FIG. 126. XIII Corps. The Forward Movements of the Medical Units during the Final Battle (3).

- | | |
|-----------------------|--------------------------|
| 1. 55 F.D.S. April 30 | 2. 1 (N.Z.) C.C.S. May 4 |
| 19 C.C.S. May 2 | |

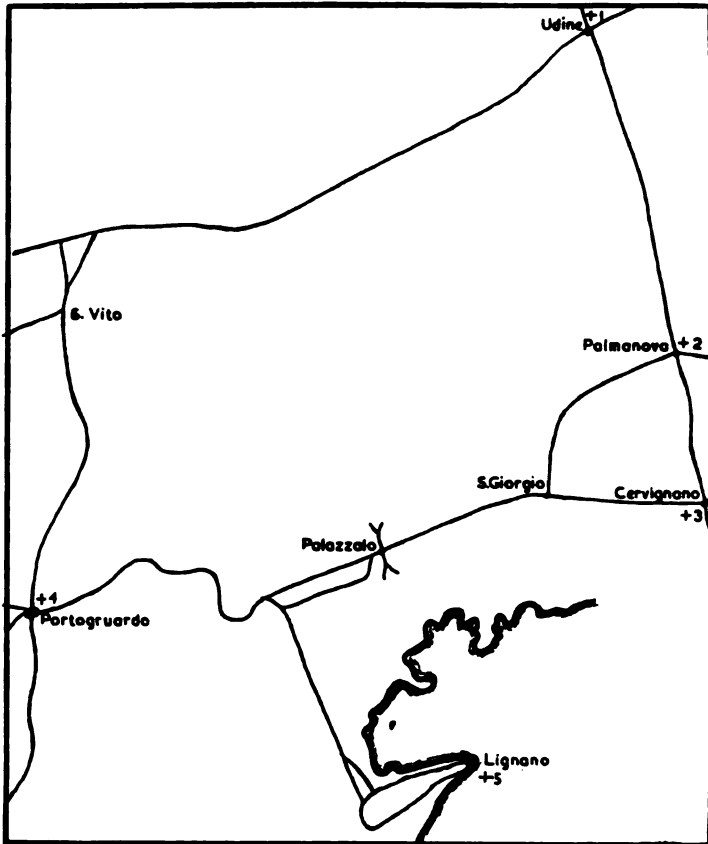


FIG. 127. XIII Corps. The Forward Movements of the Medical Units during the Final Battle (4).

- | | |
|----------------------------|---------------------|
| 1. 1 (N.Z.) C.C.S. | 4. 55 F.D.S. May 2 |
| 2. 3 (Ind.) C.C.S. June 11 | 52 F.D.S. May 4 |
| 19 C.C.S. June 4 | 64 F.D.S. May 20 |
| 3. 3 (Ind.) C.C.S. May 17 | 5. 52 F.D.S. May 18 |
| 55 F.D.S. May 4 | |
| 19 C.C.S. May 8 | |

(b) Between the Adige and the Po :

6th Armd. Division
Corps Tps.

52 F.D.S.
19 C.C.S.
29 F.S.U.
2 F.S.U.
11 F.T.U.

(c) North of the Adige :

New Zealand 2nd Division
Ind. 43rd Lorried Inf. Bde.

55 F.D.S.
10 F.S.U.
28 F.S.U.
33 F.T.U.
1 (N.Z.) C.C.S.

As the advance gained impetus the medical plan became that of providing F.D.Ss. with attached F.S.U.s. and F.T.U. at intervals of fifty miles. This was done until Trieste was reached.

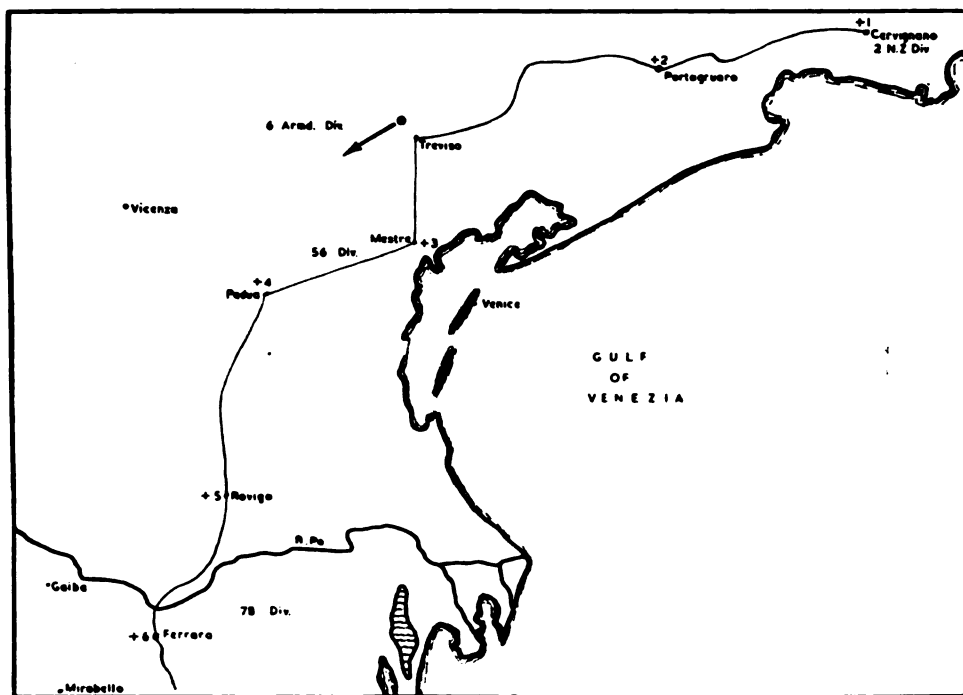


FIG. 128. Eighth Army. The Surgical Plan and Evacuation Chain as at May 5, 1945.

- | | |
|-----------------|-----------------|
| 1. 55 F.D.S. | 4. 1 C.C.S. |
| 19 C.C.S. | 57 & 58 F.D.Ss. |
| 2. 52 F.D.S. | 5. 4 C.C.S. |
| 3. 67 F.D.S. | 6. 54 B.G.H. |
| 12 C.C.S. | 9 (Ind.) C.C.S. |
| 1 (N.Z.) C.C.S. | 65 & 66 F.D.Ss. |

55 F.D.Ss., with 10 and 28 F.S.U.s. and 33 F.T.U., opened in Padua. It was relieved by a section of 19 C.C.S. on May 2 and moved on to

Portogruaro. There it was relieved by 52 F.D.S. and 55 moved on to Cervignano. Then 19 C.C.S. moved to Cervignano.

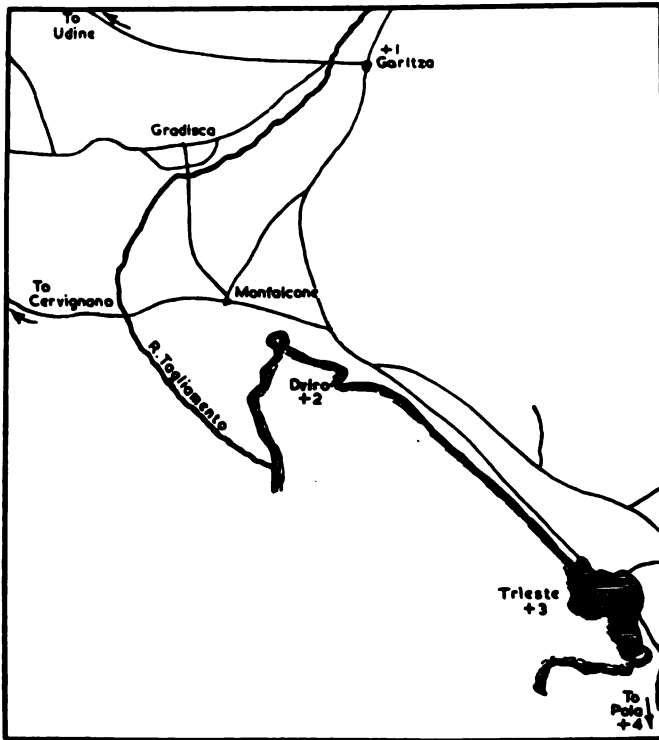


FIG. 129. XIII Corps. The Forward Movements of the Medical Units during the Final Battle (5).

1. Yugoslav Hospital
2. 29 F.S.U. May 24

3. 66 F.D.S. June 20
- 55 F.D.S. June 20

No sooner had hostilities ceased than difficulties were encountered in Gorizia, Udine, Monfalcone and other places. Yugoslav nationalistic demonstrations were staged and every building of any usefulness to the medical services was occupied. There were also some 15,000 Chetniks in the area. Medical installations which could not be withdrawn quickly were therefore kept west of the Isonzo.

Following the end of hostilities, V Corps with 6th Armd., 46th and 78th Divisions was established in the Austrian provinces of Styria and Carinthia. Evacuation was *via* Udine to 22 B.G.H. at Mestre.

XIII Corps with 56th, N.Z. 2nd and Indian 10th Divisions was given an internal security rôle in the Trieste area.

The port of Trieste was not yet available; the supply route by road was excessively long; so it was that as far as possible casualties were

held in Corps area. 52 F.D.S. opened in mid-May in a sanatorium in Lignano.

Around May 17 the general situation in the area began to deteriorate and it was decided to move Indian 10th Division forward. On May 24, 3 (Ind.) C.C.S. opened at Cervignano.

As the Yugoslav troops withdrew from Venezia Giulia and Austria, U.S. II Corps with U.S. 91st Division and XIII Corps with Indian 10th,

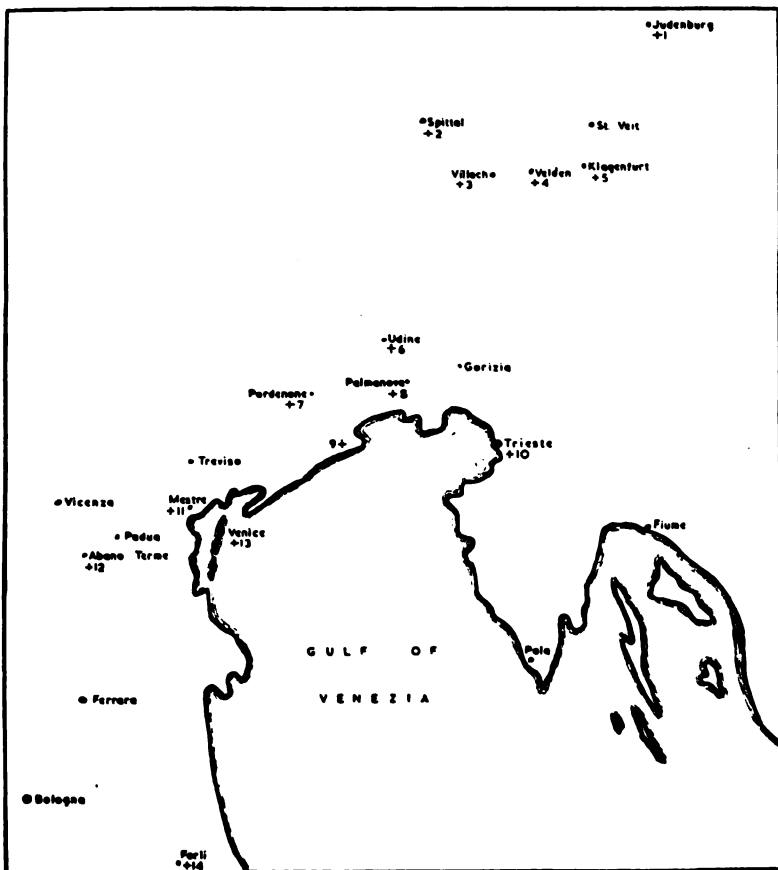


FIG. 130. Medical Units of Eighth Army as at June 30, 1945.

- | | |
|-------------------------|-------------------------------|
| 1. 70 F.D.S. | 8. 19 C.C.S., 3 (Ind.) C.C.S. |
| 2. 54 B.G.H. | 9. 52 F.D.S. |
| 3. 1 C.C.S., 57 F.D.S. | 10. 66 F.D.S. |
| 4. 4 & 5 C.C.Ss. | 11. 22 B.G.H., 12 C.C.S. |
| 5. 18 C.C.S., 58 F.D.S. | 67 F.D.S. |
| 6. 70 & 83 B.G.Hs. | 12. 65 F.D.S. |
| 1 (N.Z.) C.C.S. | 13. 56 F.D.S. |
| 64 F.D.S. | 14. 59 B.G.H. |
| 7. 866 F.D.S. | |

N.Z. 2nd and 56th Divisions, moved up to the Morgan Line. It then became possible to move XIII Corps medical units into Trieste, Palmanova and Pola. 19 and 3 (Ind.) C.C.Ss. were moved to Palmanova, 66 F.D.S. to Trieste and 55 F.D.S. to Pola. Evacuation therefrom was *via* Udine to Mestre.

Evacuation from Udine was by road to Mestre or by air direct to Rome. One aircraft each day was employed. Evacuation from Mestre was by road into 1 District hospitals.

MEDICAL COVER

6TH ARMD. DIVISION

On April 10 the division moved to a concentration area about Cesena. 1 Fd. Amb. established a 50-bed C.R.S. for light sick at Sant' Arcangelo, the other field ambulances remaining on wheels. Then between April 15-18 the division moved up to Bagnacavallo, 'A' Coy. opening a C.R.S. in the town. The division was organised into a number of regimental groups and to each group a section of 165 Lt. Fd. Amb. and a section of 14 Fd. Amb. were allocated. On April 18 the regimental groups moved forward to the area between Alfonsine and the Argenta Gap. On the 19th, 1st Gds. Bde. moved through the gap and 'B' Coy. 1 Fd. Amb. accompanied it. With 61st Inf. Bde. went a company of 14 Fd. Amb. A.D.S. leap-frogged over A.D.S. and M.D.S. over M.D.S. as the advance continued. For the crossing of the Po 1 Fd. Amb. jumped ahead to Lendinara. When the Adige was crossed 165 Lt. Fd. Amb. opened a M.D.S. in Treviso. This being taken over by 1 Fd. Amb., 165 Lt. Fd. Amb. moved on to Udine on May 1.

As German hospital after hospital was overrun a section of a field ambulance was put in charge and O.C. 165 Lt. Fd. Amb. was given charge of all P.o.W. hospitals in the divisional area. In each P.o.W. camp a small German medical staff was placed in medical charge.

On May 3, 1 Fd. Amb. established an A.D.S. in Cividale.

The division now passed under command V Corps and was concentrated around Udine. The control of the German hospitals formerly in the divisional area was taken over by A.D.M.S. 78th Division.

On May 7, 165 Lt. Fd. Amb. closed and moved up Route 13 to open a M.D.S. in Treviso. On the following day 1 Fd. Amb., moving with 1st Gds. Bde., opened a M.D.S. in Villach and 165 Lt. Fd. Amb. leap-frogged to Klagenfurt. 57 F.D.S. opened in Villach on the 9th and on the 10th, 165 Lt. Fd. Amb. moved to Wörther See to open a 60-bed C.R.S. 14 Fd. Amb. moved to Maria Wörth and 1 Fd. Amb. to Velden.

The area around Klagenfurt became the divisional area. Several A.D.Ss. were established and the M.D.S. of 165 Lt. Fd. Amb. became the divisional C.R.S. for light sick and 1 Fd. Amb. formed a divisional

convalescent depot. 14 Fd. Amb. opened an A.D.S. in Klagenfurt to serve as a central M.I. Room. The officer commanding 'A' Coy. 14 Fd. Amb. acted as the liaison officer between A.D.M.S. and the German medical staffs of the German hospitals in the divisional area.

Of these hospitals in the Klagenfurt area there were nineteen with 10,000 patients. Their staffs were ample but they were grossly overcrowded. The stores of food were sufficient for four to six weeks but they had had no drugs for two months. A medical service for surrendered personnel and prisoners-of-war was promptly organised. In charge of it a German medical general was placed by D.D.M.S. V Corps. He in turn appointed a German medical colonel as his representative in 6th Armd. Divisional area. Eighteen N.C.Os. provided by the divisional field ambulances acted as British military commandants, German military hospitals. The medical colonel was instructed :

- (a) to collect together an administrative staff;
- (b) to set up a H.Q. at Lendorf barracks;
- (c) to set up a depot and collect together all food, drugs, equipment and stores that could be found;
- (d) to maintain a system of supply from his stores to all the hospitals in his area;
- (e) to organise the medical transport in his area;
- (f) to be responsible for the discipline of all medical personnel in his area;
- (g) to conserve supplies;
- (h) to ensure proper feeding and treatment of all patients in the hospitals whatever their nationality;
- (i) to make such returns as should be called for from time to time.

The British military commandants were instructed :

- (a) to take up quarters in each hospital with due regard to the authority they represented and to demand an interpreter;
- (b) to render reports on staff, stores of food, drugs and equipment;
- (c) to report on layout of hospital and general behaviour of personnel and staff;
- (d) to report on all problems, irregularities and matters requiring further investigation and supervision;
- (e) to prevent exploitation of the hospital by unauthorised persons;
- (f) to make a daily bedstate return.

S.M.Os. brigades were instructed to ensure that the Germans organised the work of medical establishments in camps. The senior German medical officer with 6th Armd. Division gathered around himself the following staff :

Liaison officer
 Officer i/c administration
 camps
 personnel
 drugs and medical stores
 general supplies
 vehicles
 hygiene equipment
 food
 two consulting dermatologists
 one consulting physician
 one consulting surgeon

Since the British liaison officer (D.A.D.M.S. (S.P. & P.o.W.)) could not keep in sufficiently close touch with all the British military commandants, these were formed into cadres and R.A.M.C. officers appointed as Os.C. cadres to advise D.A.D.M.S. (S.P. & P.o.W.).

The hospitals at Velden, Pörschach and Krumpendorf were cleared by V Corps and that at Lendorf was expanded to 2,500 beds to become the centre of 6th Armd. Division's German hospitals, both administratively and clinically. All food over one month's requirements at each hospital was withdrawn to Lendorf, as was also all surplus equipment.

About 150 vehicles were found scattered throughout the area. These were taken over and a system of work tickets, vehicles permits, passes and petrol returns was arranged.

S.A. 6TH ARMoured DIVISION

During the first week in April the division moved from the rest area at Lucca in preparation for the attack on the Monte Sole ridge. Two C.C.Ps. were placed u/c of each brigade. 20 (S.A.) Fd. Amb. opened its A.D.S. at Ponte Locobello and its M.D.S. in Vaino. 19 (S.A.) Fd. Amb. had its A.D.S. and its M.D.S. in Castiglione. The A.S.C. remained in Castiglione and 8 (S.A.) C.C.S. moved to Prato. Each field ambulance was now organised into a M.D.S., an A.D.S. and five C.C.Ps. No difficulties in evacuation were encountered.

During the swift advance of the division through the Po valley and through the Adige line, the two A.D.Ss. were placed in support of the two brigades in action (leaving the reserve brigade without an A.D.S.). The two M.D.Ss. lay behind the brigades and were concerned with divisional sick rather than with battle casualties. The A.S.C. moved forward eight times, the C.C.S. thrice. No difficulties of any significance were encountered by the medical service of the division.

Following the armistice the division found itself loaded with unusual responsibilities in an area that extended from Milan to the French border. 19 (S.A.) Fd. Amb. was with 11th and 13th Bdes. in the Turin area and had its M.D.S. first in Oggiono and later in Saronno. 20 (S.A.)

Fd. Amb., responsible for S.A. 12th Bde. and divisional troops, had its A.D.S. in Aosta and its M.D.S. in Vercelli. 8 (S.A.) C.C.S. was sited in Piacenza. Evacuation therefrom was first to Bologna and later to Milan.

During the final offensive the average daily strength of the division was 20,950. Admissions to its medical units were as follows :

TABLE 33

S.A. 6th Armoured Division. Admissions

	Offrs.	U.D.F.		C.C.	U.K.		Indian	Totals
		O.Rs.			Offrs.	O.Rs.	O.Rs.	
Sick	102	2,898	301		1	23	90	3,415
Battle Casualties	-	417	19		-	-	57	493

As an outcome of the experience gained during this last phase it was considered that it was wasteful and tactically unwise to leave a C.C.P. under the command of a battalion, and that the best arrangement was to have them under the command of the medical liaison officer at brigade H.Q. It was recognised that an A.D.S. with full resuscitation and documentation facilities is an essential part of a brigade group in action. With but two field ambulances it was impossible to provide an adequate A.D.S. for each of the three brigades, and because a F.D.S. was available not more than one M.D.S. was necessary. It was thought that for a three brigade division one large field ambulance consisting of one M.D.S., three A.D.Ss. and ten to twelve C.C.Ps. would be the best organisation.

56TH DIVISION

On April 6 at 2115 hours, 167th Inf. Bde. crossed the Reno and commenced to secure the wedge of land between the lake and the Reno. The construction of a bridge over the Reno north of S. Alberto was delayed by strong enemy resistance until approximately 0700 hours on April 7. The country across the Reno on which the division was to fight was the strip of land between Lake Comacchio and the extensive marshes to the west which narrowed at the Argenta Gap to some six kilometres in width. The retaining bunds of Lake Comacchio had been blown in many places so that the actual beach north-west from S. Alberto was formed by the Strada Giuliana to Menate and from thence by the Strada della Pioppa. The flooded countryside was in parts under six feet of water with stretches of raised roads and bunds rising above the flood level. South-west of this beach there were large areas of flooded land on which the roads 'floated', becoming gradually squeezed into the marsh by the heavy traffic like dough under a roller.

On the night of April 10/11, 169th Inf. Bde., with 40th R.M. Cdo.

under command, made a right hook to Menate. The Commando went on foot along the bund between Lake Comacchio and the flooded area while 169th Inf. Bde. embarked in 'Fantails' and landed on the beach formed by the Strada Giuliana opposite Menate to surprise and overwhelm the Germans. During the night of April 12/13, 24th Gds. Bde. commenced a second amphibious operation with 9th Cdo. under command. 1st Buffs and 9th Cdo. embarked in 'Fantails' with the object of capturing two bridges. 2nd Coldstream Gds. and 1st Scots Gds. passed through 169th Inf. Bde. on the Strada della Pioppa to link up with 1st Buffs and 9th Cdo. This attack was not successful.

On the 13th, however, 167th Bde. captured Filo and by the 21st the division was in Gambulaga. 'Popski's Private Army' now came under command. Resistance began to crumble and the division advanced to enter Formignana and Copparo. By April 25 the south bank of the Po was reached near Alberone and two bridgeheads were secured. On the 26th, 169th Bde. crossed the river in 'Fantails' to enter Rovigo. 2/7th Queens entered Venice on the 29th.

For the attack on the Spit 6 Lt. Fd. Amb. (attached to an armoured brigade supporting 56th Division) established an A.D.S. to which a F.S.U. and a F.T.U. were attached. Evacuation therefrom was to Ravenna. 137 Fd. Amb. opened A.D.Ss. in support of 24th Gds. Bde. 214 Fd. Amb. established its A.D.S. at Cantoniera to deal with casualties from 'Checkforce' (built around 6th Cheshires and 44th Recce. Regt. and holding the line from S. Alberto to the divisional boundary). On April 2 this A.D.S. became the divisional dressing station. Then 167 Fd. Amb. opened its A.D.S. in S. Alberto to deal with casualties from 167th Bde. and 'Checkforce' when crossing the Reno. A 'medical' crossing was selected and a rope ferry with assault boats was constructed by 167 Fd. Amb.

For the capture of the islands in the centre of Lake Comacchio speedboats were used. These were used also for the evacuation of the few casualties. Evacuation was to 6 Lt. Fd. Amb. at Mandriole.

For the capture of Menate and Longastrino 9th Armd. Bde. was in charge of the 'Fantails', which were driven by R.A.S.C. and U.S. personnel and organised into flotillas under the direction of the Royal Navy. 166 Lt. Fd. Amb. underwent special training on Lake Trasimene for this operation. 169th Inf. Bde. and 214 Fd. Amb. took part. 214 Fd. Amb. set up a beach dressing station at Menate to which casualties were brought in returning 'Fantails'. 166 Lt. Fd. Amb. provided the medical orderlies for these 'Fantails' and a loading party at Menate and established a C.P. on the shore where an unloading party was stationed. Evacuation was by ambulance car to 167 Fd. Amb. in S. Alberto.

In the first flight there were two detachments of 214 Fd. Amb., each consisting of one officer and eleven O.Rs. with pack equipment. In the

second flight went an A.D.S. of thirty officers and men with two jeeps and one 'Weasel' transported in four 'Fantails'. The A.D.S. landed at H-hour + 5½ and dealt with some 40 casualties.

During the advance to Copparo the divisional dressing station was opened in succession in Chiesa del Bando (April 19), Portomaggiore (April 21), Sabbioncello (April 23) and Copparo on the 24th. On this date 58 F.D.S. and 1 C.C.S. arrived at Copparo which then became a medical centre.

For the crossing of the Po 214 Fd. Amb. was made responsible for the collection of casualties and for their evacuation to the north bank. Thence they were transported across the river by returning 'Fantails'.

The organisation of the field ambulances adopted in this division at this time was as follows. There were two companies, each with three medical officers, including the officer commanding the company, and one non-medical officer. Each company had a company H.Q. and could provide an A.D.S. and S.Bs. It was not divided into rigid sections. Headquarters had two medical officers, including the officer commanding, and all the administrative personnel of the unit. It could set up a M.I. Room. From the H.Q. the C.O. took what he required for his tactical headquarters. The divisional dressing station was formed by H.Q. plus one company.

During the course of these amphibious operations the following arrangements were found to be of considerable value :

- (a) Each field ambulance had a tactical headquarters. This was sited at or near the functioning A.D.S. and Bde. H.Q. It was provided with a wireless set. A.D.M.S. was at main divisional H.Q. and had a control set and also a wireless in his jeep. To A.D.M.S. a copy of 'G' Ops. log was always sent.
- (b) The large administrative part of each field ambulance H.Q. was considered as a 'B' echelon. This included the Q.M's. branch, the dental centre and the M.T. workshop. It included also a medical officer who was responsible for the medical arrangements of the brigade 'B' echelon.
- (c) A dressing station on a divisional level formed the pivot of all the medical services' work. In a moving battle the A.D.Ss. moved quickly. It was difficult therefore for the M.A.C. to keep in touch with them. A firm base which moves less frequently and was well known to all field ambulances and to the M.A.C. greatly lessened this difficulty. The A.D.Ss. were sited as far forward as possible, usually under fire to begin with.
- (d) Each brigade was supported by the field ambulance with which it was best acquainted.
- (e) When a water obstacle was involved in an evacuation system one

and the same unit was made responsible for getting the casualties to the far bank, from this to the near bank and for their reception and accommodation on the near bank.

NEW ZEALAND 2ND DIVISION

At the beginning of April the division moved up to the line again to come under command V Corps on April 2. It took over a sector north of Faenza with 78th Division on its right and 3rd Carpathian and 5th Kresowa Divisions on its left.

On April 9, after the enemy positions had been battered for over five hours by the Allied air forces and artillery, the division took part in the general attack. By nightfall the New Zealanders, Indians and Poles were across the Senio and had linked up. By midday on the 10th the division was up to the Lugo Canal and by the end of the day had reached the Santerno.

6 (N.Z.) Fd. Amb. established its M.D.S. on the road five hundred yards from the Lamone and 1 (N.Z.) C.C.S. in Forli opened. 5 (N.Z.) Fd. Amb. was open in Forli for the reception of the divisional sick. A theatre team of 4 (N.Z.) Fd. Amb. joined the M.D.S. of 6 (N.Z.) Fd. Amb. On April 11 this M.D.S. closed and this surgical team rejoined 4 (N.Z.) Fd. Amb. at Granarolo, a thousand yards from the Senio. Then a surgical team from 6 (N.Z.) Fd. Amb. joined this M.D.S. of 4 (N.Z.) Fd. Amb.

Crossing the Santerno with N.Z. 9th Inf. Bde. on the morning of April 13, 4 (N.Z.) Fd. Amb. opened an A.D.S. As N.Z. 9th and 6th Inf. Bdes. advanced towards the Sillaro the functions of the M.D.S. of 4 (N.Z.) Fd. Amb. were taken over by that of 6 (N.Z.) Fd. Amb. which opened two miles to the rear of Massa Lombarda, being assisted by the surgical team of 4 (N.Z.) Fd. Amb.

On April 15 the Sillaro was crossed, the Poles on the left and Indian 10th Division on the right keeping abreast of N.Z. 2nd Division which moved along the Medicina-Budrio railway to reach the Gaiana, there to meet strenuous opposition. On the night of April 18/19 the division stormed the Gaiana Canal line and swept across the Quaderna.

The M.D.S. of 5 (N.Z.) Fd. Amb. moved up to Ganzanigo near Medicina on April 17 and was there reinforced by 3 (N.Z.) F.S.U. and 2 (N.Z.) F.T.U.

By April 20 the New Zealanders had cleared Budrio and had reached the banks of the Idice. On the following day this river was crossed. The A.D.Ss. of 5 and 6 (N.Z.) Fd. Amb. moved across the river in the afternoon and the M.D.S. of 4 (N.Z.) Fd. Amb. moved up to Medicina.

The division now swung across Route 64 to by-pass San Giorgio, to link up with elements of U.S. Fifth Army, to cross the Reno and to reach the Po just to the south of Bondeno by April 23. The M.D.S. of

three days. All the divisional medical units were open and stretched over a line of communication of a hundred miles.

On April 26/27 the fast-flowing and wide Adige was crossed and quickly bridged. N.Z. 5th and 6th Bdes. were now grounded and N.Z. 9th and Ind. 43rd Lorried Inf. Bdes. passed through north of Badia. The A.D.S. of 4 (N.Z.) Fd. Amb. accompanied N.Z. 9th Bde. through San Margherita, Este and Monselice on Route 16 to Padua. Evacuation of the very few casualties was to the M.D.S. of 6 (N.Z.) Fd. Amb. at Trecenta.

On the 28th the M.D.S. of 4 (N.Z.) Fd. Amb. moved up to the vicinity of Bondeno, south of the Po, in order to act as a staging post for all battle casualties and seriously sick on their route from the M.D.S. of 6 (N.Z.) Fd. Amb. to 1 (N.Z.) C.C.S. The light sick were held in the forward area; the rest were sent back through Ferrara and along Route 64.

On April 29 the division captured Mestre and thereafter swept into Venice, there to be joined by 56th Division and 'Popski's Private Army'. Without pause the division moved on towards Trieste to meet Yugoslav units at Monfalcone. On April 29 the M.D.S. of 6 (N.Z.) Fd. Amb. moved to Padua, taking with it 3 (N.Z.) F.S.U. and 2 (N.Z.) F.T.U. On April 30 Lt. Sec. 1 (N.Z.) C.C.S. moved to Mestre. The M.D.S. of 5 (N.Z.) Fd. Amb. joined the A.D.S. of this unit at Trepalade, near Monfalcone, on April 30.

The division entered Trieste on the afternoon of May 2. In twenty-three days it had moved from the Senio some 225 miles through the wreckage of German armies; it had destroyed three German divisions and had taken over 40,000 prisoners.

On May 1 the M.D.S. of 4 (N.Z.) Fd. Amb. moved from Bondeno to Villa Vicentina on the western side of the Isonzo. Evacuation was to 1 (N.Z.) C.C.S. by the N.Z. M.A.C. To the C.C.S. a 100-bed detachment from 2 N.Z.G.H. was attached. The M.D.S. of 5 (N.Z.) Fd. Amb. was located at Mirano, near Venice, and established a rest camp. Toward the end of May an air evacuation centre was opened at Udine, whither 1 (N.Z.) C.C.S. moved in early June.

On June 21 the M.D.S. of 6 (N.Z.) Fd. Amb. opened at Villa Opicina.

During April, 1,090 New Zealand battle casualties were admitted to the divisional medical units, most of them occurring in the early stages of the final offensive. As the advance continued large numbers of German wounded were captured. For their care A.D.M.S. N.Z. 2nd Division obtained the release of German P.o.W. medical personnel and established German P.o.W. hospitals, which later became a Corps responsibility.

The A.D.Ss. accompanying the brigades functioned within an hour's run from the R.A.Ps. The M.D.S. was often as much as some forty miles

behind. The A.D.Ss. were on the move continuously, that of 5 (N.Z.) Fd. Amb., for example, moving fifteen times in twenty-one days.

Each M.D.S. provided an operating team, which was attached either to the active M.D.S. or else to the C.C.S. In May the C.C.S. was nearly a hundred miles behind the M.D.Ss. so that much surgery had to be undertaken at the active M.D.S. In June, after the C.C.S. had moved up to Udine, the M.D.Ss. reverted to their more undramatic rôle of caring for the light sick. During April the C.C.S. admitted 1,004 battle casualties and 454 sick. Below is an analysis of these wounds by missile :

Wounds by Missile

G.S.W.	.	.	227
Shell	.	.	294
Bomb	.	.	122
Mine	.	.	34
Mortar	.	.	292
Others	.	.	35

1,004

During May there were admitted to the C.C.S. 57 battle casualties and 498 sick, the medical cases being tended by the detachment from 2 N.Z.G.H. From the C.C.S., while at Forli, a high proportion of the casualties, including fractured femur cases, was flown to 3 N.Z.G.H. at Bari. From Forli to Senigallia evacuation was by road and by rail. When the C.C.S. moved to San Marino the detachment from 2 N.Z.G.H. remained at Forli to stage casualties. When the C.C.S. opened in Mestre evacuation was by road to San Marino and Forli. During May road evacuation was to 54 B.G.H. at Ferrara and to 1 N.Z.G.H. at Senigallia, long, slow and uncomfortable journeys both.

2 N.Z.G.H. at Caserta, awaiting a call to move to the Po valley, which never came, continued to admit British patients.

During April 584 battle casualties reached 1 N.Z.G.H. at Senigallia; in May 450, including 84 German P.o.W. To 3 N.Z.G.H. at Bari 495 battle casualties and 526 sick were admitted during April—173 by land, 477 by sea and 371 by air. The N.Z. convalescent depot continued to function in two parts—at Senigallia and at San Spirito.

The record of the N.Z.E.F. in the campaigns in Libya, Greece, Crete, Tunisia and Italy is truly remarkable. So also is that of the N.Z.M.C. To a very large extent the New Zealand Medical Services constituted an independent entity. Consisting as they did of but a few medical units and serving a relatively small force, it was possible for them to achieve a very high degree of integration and to develop an efficiency that was outstanding both as regards the tactical employment of units and the application of medical knowledge and skill to the

conditions and circumstances of war. From their performance there is much to be learnt by the student of military medicine.*

78TH DIVISION

On April 9, 78th Division was in the line between N.Z. 2nd and Indian 8th Divisions. These two divisions crossed the Senio and, at 1630 hours on April 12, 38th Bde. with 2nd Armd. Bde. of 1st Armd. Division under command passed through Indian 8th Division's bridge-head across the Santerno and advanced on Conselice. A battalion of 36th Bde. acted as a mobile left flank. The advance was rapid and during the 13th and 14th of April the whole of the area south of the Sillaro was cleared. In the afternoon of April 14, 11th Bde. passed round *via* Alfonsine into 56th Division's sector and relieved 169th Bde. in the area north of the Reno. The brigade then moved on Argenta. 38th Bde. got across the Reno on the night of April 16/17, while, on the 17th, 11th Bde. by-passed Argenta. Then 38th Bde. passed through 11th Bde. to cut Route 16 at Boccaleone. Meanwhile 36th Bde. was being concentrated north of the Reno.

On April 18, 36th Bde. passed through and advanced between S. Nicolo Ferrarese and Porto Rotta. On the 19th Portomaggiore was entered. Resistance now stiffened and it was not until the 21st that 2nd Armd. Bde. broke through to disorganise the enemy forces. Within 36 hours the line of the Po had been reached. 11th and 38th Bdes. were engaged in mopping up operations while 36th Bde. was held in reserve. The division was then grounded just south of the Po.

For the crossing of the Senio the A.D.S. of 11 Fd. Amb. was busily engaged on the right of the divisional sector in evacuating casualties of Indian 8th Division.

During the advance from Lugo to the Po four field ambulances were at the disposal of the division, 1 Lt. Fd. Amb. having joined with 2nd Armd. Bde. The A.D.Ss. were brigaded and sections of 1 Lt. Fd. Amb. accompanied 2nd Armd. Bde. The four field ambulances leap-frogged over each other to open the battle M.D.S.

While the division was grounded south of the Po, all the field ambulances opened to hold minor sick. 47 Fd. Hyg. Sec. cleared the area.

On May 4 the division moved to Lorenzago and S. Stefano and then eastward towards Tolmezzo. 38th Bde. took over the Udine area from 6th Armd. Division. On the 8th the division, less 38th Bde., moved to the area Köttschach, Oberdrauburg, Lienz and Villach. The field ambulances established C.R.Ss., each of 50 beds, on the Millstatter-See, the Faaker-See and at Mauthen.

By May 24 there were no less than thirty-one German military

* See New Zealand Official Medical History—*New Zealand Medical Services in Middle East and Italy.*

hospitals of from 300-700 beds in the divisional area. Later the German wounded were concentrated in Spittal (2,000 beds), Lienz (2,000), Hermagor (700 orthopaedic beds), Amlach (300 infectious diseases beds) and Iselburg (150 maxillo-facial beds). For Hungarian surrendered personnel a 300-bed hospital was opened in Fernitz.

In Spittal there was an Allied P.o.W. hospital. An officer of the S.A.A.M.C. and another of the A.A.M.C. were in charge of it and had taken it over several days before 78th Division arrived. The R.A.F. had dropped supplies of penicillin a few days before the end of hostilities. The patients were in excellent condition. French patients were repatriated under V Corps arrangements; so also were 786 Russians.

In the divisional area were some 30,000 Russian P.o.W. These were evacuated to Russia, with the exception of those who took refuge in the neighbouring mountains, by July 9. One medical officer and 4 N.Os. R.A.M.C. accompanied each train.

During the rest of the year 78th Division's medical services were concerned with the care of seven Displaced Persons (military administration) Camps, 9 D.P. Camps later handed over to U.N.N.R.A., 4 P.o.W. Cages and 7 S.E.P. Camps.

INDIAN 8TH DIVISION

At the beginning of April, Indian 8th Division was facing the German defensive position along the Senio between Fusignano and the Lugo-Bagnacavallo railway with Ind. 19th Inf. Bde. on the right and Ind. 21st Inf. Bde. on the left. Ind. 17th Inf. Bde. was in reserve in the Godo area. The division was assigned the task of establishing a bridgehead across the Santerno.

At 1920 hours on April 9, following an intense aerial and artillery bombardment of the whole of the front, Ind. 19th and 21st Inf. Bdes. attacked the defensive line of the Senio. This was indeed formidable. The river, five to ten feet in width and about four feet deep, was confined between massive flood banks which rose about thirty-five feet above the level of the surrounding country. In these banks elaborate shafts and tunnels had been constructed to form machine-gun emplacements and shelters. On either side of the river the ground was quite flat and consisted of a network of fields and vineyards.

Flame throwers preceded the infantry to scorch these flood banks, The infantry, following closely, scrambled up their steep sides and quickly overwhelmed all resistance. A second wave then waded across the river and by sheer aggressiveness drove the Germans back. Two hours after the launching of the attack Ind. 19th Bde. had reached the lateral road a thousand yards to the west of the Senio. Ind. 21st Bde., on the left, encountered rather stiffer resistance on the western bank and made somewhat slower progress. By 0100 hours on the 10th, Ind. 19th Bde. had reached the Canale di Lugo and during this day Ind. 21st Bde.

occupied the town of Lugo and, by the evening, both brigades were close to the Scolo Tratturo. During the night of April 10/11, both brigades pressed hard upon the retreating Germans and by the early morning were close up to the River Santerno.

Ind. 17th Inf. Bde., which had moved up to Bizzuno, then passed through the positions held by Ind. 19th and 21st Bdes. After a heavy artillery bombardment, and preceded by flame throwers, the brigade launched its attack on the Santerno river line in the Canale di Lugo area. By first light on the 12th a bridgehead had been secured. In the course of the morning the Germans counter-attacked but were repulsed. In the afternoon elements of 78th Division passed through this bridgehead and swung northwards towards the Argenta Gap. On the 13th, Indian 8th Division was pulled out of the line and for the next seven days rested in the area between the Senio and the Santerno.

For the attack on the Senio line one company of 31 (Ind.) Fd. Amb. provided cover for Ind. 19th Inf. Bde. and a company of 29 (Ind.) Fd. Amb. for Ind. 21st Bde. The battle M.D.S., provided by 31 (Ind.) Fd. Amb., was at Bagnacavallo, four miles from the river line. No A.D.S. was established on the near side of the river. Each battalion of the assaulting brigades was provided with six stretcher squads, one jeep and one ambulance car. A divisional ambulance and jeep exchange post was established about two and a half miles to the north-west of the M.D.S. In the initial stages of the attack evacuation was from R.A.P. through the car post to the M.D.S. 29 (Ind.) Fd. Amb. remained in reserve in Bagnacavallo and 33 (Ind.) Fd. Amb. was about two miles to the north of Fusignano. All priority cases were evacuated from the M.D.S. to 57 F.D.S. at Russi, to which a small detachment of Indian medical personnel was attached to deal with post-operative Indian cases. All other casualties and sick, except minor injuries which were treated in the unit, were evacuated to 9 (Ind.) C.C.S. at Ravenna.

During the first twelve hours of the action 248 casualties were admitted to the F.D.S. To ease the pressure upon the three surgical teams at this F.D.S. a number of priority cases were deflected to 5 C.C.S. at Forli.

By dawn on April 10, the two companies supporting the assaulting brigades were able to establish A.D.Ss. beyond the Senio. During the first 24 hours 428 casualties were admitted to the M.D.S. In Indian 8th Division, 67 casualties were caused by Allied aircraft supporting the infantry in the river crossing.

On April 11, a company of 31 (Ind.) Fd. Amb. moved from Bagnacavallo to open an A.D.S. to serve Ind. 17th Inf. Bde. in its assault upon the Santerno line. From this priority cases were evacuated to 58 F.D.S. in Lugo. The rest were sent through the M.D.S. in Bagnacavallo to 9 (Ind.) C.C.S. at Ravenna.

These medical arrangements remained unchanged until the division was brought forward for the capture of Ferrara and the crossing of the Po.

On April 21, Indian 8th Division, under command V Corps, was directed to advance along Route 16, to capture Ferrara and to secure bridgeheads across the Po. Ind. 19th and 21st Bdes. were ordered to move northwards, the former on the east of Po morto di Primaro, the latter on the west of it. Ind. 19th Bde., advancing through the Argenta Gap on April 21, reached the southern outskirts of Ferrara by the evening of the 22nd. On the 22nd, Ind. 21st Bde. followed and secured the Ferrara airfield. On April 24 Ferrara fell to Ind. 19th Inf. Bde. and both of these brigades reached the line of the River Po. On the 25th, New Zealand 2nd Division crossed this river against negligible opposition. On the night of April 25/26, Ind. 17th Bde., which had come up on the left of Ind. 21st Bde., joined this latter brigade in an assault upon the river line and established a firm bridgehead between Occhiobello and Santa Maria Maddalena. At dawn on the 26th, Ind. 17th Bde. began its advance to the River Adige. The advance was slow for the roads were greatly congested and the situation south of the Adige very confused, for there were large numbers of German troops in this area though but few of them displayed any inclination to fight. The river line was reached on the evening of the 27th. On the following morning the Adige was crossed without opposition and the brigade reached Vescovana that evening.

On the 28th, Ind. 19th Inf. Bde. crossed the Po and concentrated south of the Adige with the intention of moving on to Venice on the following day. However, this was not to be for the congestion on the roads was too great and Indian 8th Division was grounded. On April 29, Indian 8th Division reverted to the command of Eighth Army and was not given any operational commitment. On May 16, Indian 8th Division moved back to Perugia and thence, on June 10, to Taranto for embarkation to India; 2,789 of its dead lay buried in Italy.

When Ind. 19th Inf. Bde. began its advance astride Route 16, 33 (Ind.) Fd. Amb. opened a light M.D.S. about ten miles to the north-west of Argenta on the main highway. Casualties were few. Priority cases were evacuated from the M.D.S. to Lt. Sec. 5 C.C.S. which had moved up to a point about six miles to the north-west of Argenta on Route 16. The others were sent to 9 (Ind.) C.C.S. in Ravenna. On April 22, 29 (Ind.) Fd. Amb., following Ind. 21st Bde., established a M.D.S. about half a mile to the north of the location of Lt. Sec. 9 (Ind.) C.C.S. The light M.D.S. of 33 (Ind.) Fd. Amb. then closed.

With the capture of Ferrara 33 (Ind.) Fd. Amb. moved in to establish a M.D.S. in the Scuola Mizzana about a mile to the west of Ferrara. The field ambulance companies accompanying Ind. 21st and 17th Bdes.

crossed the Po and established A.D.Ss. Evacuation across the river was by 'Fantail' to a debussing point on the south bank, whence casualties were taken to the M.D.S. of 33 (Ind.) Fd. Amb. Further evacuation was to Lt. Sec. 9 (Ind.) C.C.S. which had moved into Ferrara. On the 26th, 31 (Ind.) Fd. Amb. crossed the Po and established a M.D.S. in the Occhiobello bridgehead and Hy. Sec. 9 (Ind.) C.C.S. joined its light section in Ferrara. From this C.C.S. further evacuation was to 31 I.G.H. at Numana under Army arrangements.

These arrangements remained unchanged until Indian 8th Division reverted to Eighth Army, save that 31 (Ind.) Fd. Amb. opened a M.D.S. in Arquà Polesine to stage casualties until May 5, when 29 (Ind.) Fd. Amb. opened a light M.D.S. in Rovigo itself to cater for the divisional sick.

INDIAN 10TH DIVISION

For the final battle Indian 10th Division assumed command of XIII Corps' left sector on April 16. Ind. 10th Bde. crossed the Sillaro and cleared the western bank while Ind. 43rd Lorried Inf. Bde., operating on the right of the Polish Corps, captured Medicina. This brigade was placed u/c XIII Corps and passed under the orders of the New Zealand Division. On April 17, Ind. 10th Bde. moved forward towards the Quaderna Canal while the New Zealanders and Ind. 43rd Lorried Inf. Bde. advanced as far as the Gaiana Canal. On the 18th the New Zealanders and 43rd Lorried Bde. stormed the Gaiana Canal and reached the next water obstacle, the Scolo Acquarola. But Ind. 10th Bde. failed to get across the Quaderna Canal and so the flank of the New Zealanders became dangerously exposed.

On the night of April 19/20, Ind. 20th Bde. came up behind Ind. 10th Bde., passed through and got across the Quaderna Canal. By the morning of the 20th the advance to the Adige was gaining momentum. While the New Zealanders crossed the Adige unopposed Ind. 20th Bde. met with considerable opposition. The Germans withdrew during the night, however, and on the morning of the 21st the crossing was made. As the New Zealanders advanced Ind. 20th Bde. was checked along the Scolo Fiumicello. But the Germans disengaged during the night and the brigade crossed the canal and occupied San Martino and San Giovanni. Ind. 25th Bde. then began its advance on Minerbio and thence northwards along Route 64 to the Reno.

Indian 10th Division then concentrated around Minerbio while 6th Armd. and N.Z. 2nd Divisions continued the pursuit. It was later called forward to the sector between Gorizia and the sea when, following the armistice, political difficulties developed in Trieste. The division remained here until September when it moved to Milan. In December, 1945, the division moved to Taranto and embarked for India.

When Indian 10th Division moved to its new sector on April 14, one company of 14, 21 and 30 (Ind.) Fd. Ambs. was attached to each of the three brigades—25th, 20th and 10th—to provide A.D.Ss. On April 15, H.Q. 30 (Ind.) Fd. Amb. moved to Lugo to open the divisional M.D.S. 14 and 21 (Ind.) Fd. Ambs. reached Lugo on the following day and remained in reserve. With the advance of Ind. 10th Bde. 14 (Ind.) Fd. Amb. moved forward from reserve on April 17 and opened a M.D.S. at C. Gardi about eight miles north-west of Lugo for the acceptance of battle casualties. 30 (Ind.) Fd. Amb. in Lugo then closed and passed into reserve. 21 (Ind.) Fd. Amb. moved to Massa Lombarda on the same day and opened a M.D.S. for the divisional sick.

With the crossing of the Idice, 30 (Ind.) Fd. Amb. moved forward from reserve and opened a M.D.S. near Selva, six miles due north of Medicina. For the rapid advance to the Reno, 21 (Ind.) Fd. Amb. moved to Vedrana and there established a battle M.D.S. to cover Ind. 25th Bde. During these events casualties were few and the field ambulances were never extended.

1ST ARMD. DIVISION

This division took no part in the final battle. It remained in G.H.Q. reserve. It included 2nd Armd. and 61st Inf. Bdes. and with it there were 13 Lt. and 14 Fd. Ambs. and 86 Fd. Hyg. Sec. The division was concentrated first in the area of Vicenza and Verona, next around Padua and, after June 14, in the area of Udine.

13 Lt. Fd. Amb. ran a 50-bed C.R.S. in Caldogno, 14 Fd. Amb., less one company, a C.R.S. and convalescent camp at Cola and 'B' Coy. 14 Fd. Amb. a 10-bed C.R.S. and a central M.I. room at Verona. After the move to Udine 13 Lt. Fd. Amb. ran a 10-bed C.R.S. at Ruda, 14 Fd. Amb. harboured at Villanova di Farra and 86 Fd. Hyg. Sec. was attached to H.Q. 6th Armd. Division in Udine.

APPENDIX XXII

EIGHTH ARMY. ORDER OF BATTLE, APRIL 9, 1945 (abbreviated)

V Corps Adriatic to south of Lugo
 56th Division
 78th Division
 N.Z. 2nd Division
 Indian 8th Division
 2nd Armd. Bde.
 9th Armd. Bde.
 21st Tk. Bde.
 2nd Cdo. Bde.
 Cremona Combat Gp.

- X Corps* excluding Route 9 to south of Imola
 Jewish Bde. Gp.
 Friuli Combat Gp.
- XIII Corps* south of Imola to Monte Grande
 Indian 10th Division
 Folgore Combat Gp.
- Polish II Corps* Astride the Via Emilia
 3rd Carpathian Division
 5th Kresowa Division
 Polish 2nd Armd. Bde.
 7th Armd. Bde. (less 8th R.Tk.R.)
 Ind. 43rd Lorried Inf. Bde.
- Army Reserve*
 6th Armoured Division
 2nd Para. Bde.
- 86 (*Army*) Area
 3 *Beach Gp.*

APPENDIX XXIII

EIGHTH ARMY. ARMY MEDICAL UNITS. APRIL 1945

B.G.Hs.	. . . . .	54, 59, 66, 83
Pol.G.Hs.	. . . . .	6, 7
C.C.Ss.	. . . . .	1, 1 (N.Z.), 3 (Pol.), 5, 5 (Pol.), 9 (Ind.), 12, 18, 19
Fd. Ambts.	. . . . .	31 (Pol.), 151 Lt.
F.D.Ss.	. . . . .	57, 58, 64, 65, 66, 67, 865, 866
F.S.Us.	. . . . .	1, 3 (Ind.), 5, 7, 21, 23, 24, 25, 26, 29, 32, 36, 45 (Pol.), 46 (Pol.), 47 (Pol.), 48 (Pol.)
F.T.Us.	. . . . .	2 (N.Z.), 3, 9, 10, 15, 25, 26, 34, 49 (Pol.), 50 (Pol.)
M.D.Us.	. . . . .	130, 132, 133, 137, 138, 140, 150, 158, 161, 163, 167, 173, 177, 178, 179, 181, 182, 183, 184, 'E' (Ind.) Dent. Surg. Unit
Fd. Dent. Labs.	. . . . .	41, 42
Adv. Depots Med.		
Stores	. . . . .	7, 344 (Pol.)
Mob. Bact. Labs.	. . . . .	1, 2, (Pol.)
Mob. Hyg. Lab.	. . . . .	3
Mal. Fd. Lab.	. . . . .	8
Traumatic Shock		
Team	. . . . .	1
Fd. Hyg. Secs.	. . . . .	8, 11, 19, 52
Ophthal. Secs.	. . . . .	58 and 83 B.G.Hs., 14 N.Z. Optician Unit
Max. Fac. Surg.		
Unit	. . . . .	1 (detach.)

Mob. Neurosurg.	
Unit . . .	4
V.D.T.T. . . .	7 (Ind.), 12, 14
C.P.T. . . .	11, 12
I.S.S. . . .	18, 39
Con. Depot . . .	8
Entomological Fd.	
Unit . . .	3
Mob. Med. Units	1, 2

Italian Medical Units

Fd. Hosps. . . .	82, 84, 230, 232, 291, 292, 333, 429, 519, 960
Med. Coy. . . .	290
Med. Secs. . . .	26, 54
Surg. Units . . .	44, 130
X-ray Units . . .	29, 133
Mob. Dent. Unit	113
Adv. Depot Med.	
Stores . . .	'S'

CHAPTER 6

THE CAMPAIGN IN ITALY

E. Medical Aspects

(i)

The Health of the Troops

SAMPLE STATISTICS*

TABLE 34

Principal Causes of Admission to all Medical Units, B.N.A.F. and C.M.F. 1943, 1944 and 1945

(Ratios per 1,000 and Percentage of Total Sick)

Causes of Admission	Annual ratio per 1,000			Per cent of Sick Admissions		
	1943	1944	1945	1943	1944	1945
Malaria	107·65	73·53	19·49	18·73	14·34	4·42
Alimentary Tract ¹	106·18	62·25	38·89	18·47	12·14	8·82
Skin and I.A.T. (exclud. Scabies)	82·00	69·66	58·88	14·27	13·59	13·35
Infective Hepatitis	49·07	25·08	13·70	8·54	4·89	3·11
Respiratory Tract	36·33	31·24	36·35	6·32	6·09	8·24
Venereal Disease	31·29	49·86	68·81	5·44	9·73	15·60
Dysentery	26·56	11·51	4·39	4·62	2·25	1·00
Scabies	19·54	18·89	56·02	3·56	3·69	12·70
Psychoneurosis (exclud. Exhaustion)	8·86	19·78	6·30	1·54	3·86	1·43
Totals²	447·94	342·91	246·81	77·93	66·89	55·97
Total of other Sick Admissions .	126·89	169·76	194·17	22·07	33·11	44·03
Total Admissions on account of Sickness	574·83	512·67	440·98	100	100	100
Battle Injuries	63·86	89·60	9·81	9·08	13·86	1·94
Other Injuries	65·06	44·41	53·28	9·24	6·86	10·56
Total Admissions on account of Injuries	128·92	134·01	63·09	18·32	20·72	12·50
Total Admissions All Causes .	703·75	646·68	504·07	100	100	100

¹ Alimentary excludes dysentery and was largely due to tonsillitis and pharyngitis.
² Does not include scabies figures as some cases were treated outside medical units.

* Tables 34-40 inclusive are from the *Statistical Report on the Health of the Army, 1942-45, H.M.S.O.*

Table 34 shows the progressive fall in the total sick admission rate; the fall in the incidence of the epidemic diseases, malaria, dysentery and infective hepatitis and the progressive rise of the incidence of venereal diseases and scabies. It also shows that dermatitis of various kinds, impetigo, epidermophytosis and boils maintained a high morbidity rate throughout the campaign, and that disease, compared with battle and other injury, accounted for more than three-quarters of all admissions.

Table 35 shows that in Italy in 1944 disease, as opposed to battle injuries and to injuries due to accident, accounted for more than three-quarters of all admissions to hospital; that malaria, venereal diseases, psychiatric disorders, dysentery and diarrhoea, infective hepatitis and cellulitis and I.A.T. made up half of the admissions on account of disease; that the rate of infective hepatitis among officers was nearly thrice that among other ranks and that whereas officers were more prone than O.Rs. to dyspepsia and gastritis and to sinusitis, other ranks were more prone than officers to hernia, otitis media and externa and to skin diseases.

Malaria and venereal disease together accounted for more than a quarter of all hospital admissions on account of disease. Psychiatric disorders, dysentery and diarrhoea, infective hepatitis and cellulitis and I.A.T. between them accounted for a further quarter.

From Table 36 it is learnt that over 85 per cent. of the cases of malaria were recorded as benign tertian. If the 10 per cent. of the cases designated clinical were mostly benign tertian then this type accounted for about 95 per cent. of all malaria cases.

It is to be noted that more than two-fifths of the skin complaints were boils, carbuncles and impetigo and that anxiety neurosis was more than four times as common as hysteria, the second in the list of psychiatric disorders. Among the dysentery and diarrhoea cases 30 per cent. were of the bacillary type and 5 per cent. protozoal. Diarrhoea alone accounted for 25 per cent. of cases in this group.

Table 37 shows that malaria, venereal diseases, infective hepatitis, dysentery and diarrhoea, cellulitis and I.A.T. and diphtheria accounted for half of the man-day wastage due to disease. Disease was responsible for two-thirds of the total wastage, battle casualties for a quarter and accidental injuries for rather less than one-tenth. Skin diseases and cellulitis between them were responsible for nearly 10 per cent. of the wastage, a contribution greater than that made by accidental injuries.

Table 38 shows that the mean duration of stay in hospital and convalescent depot was slightly less than three and a half weeks for disease, four weeks for accidental injuries and nearly seven weeks for battle casualties.

TABLE 35

Relative Morbidity and Casualty Rates: Eighth Army, Italy, 1944

	Other Ranks	Officers	Totals		Other Ranks	Officers	Totals
Malaria (All Types)	16.4	10.1	16.1	Diseases of Ear, Nose and Throat	5.8	5.4	5.8
Venereal Disease	11.0	2.4	10.5				
Psychiatric Disorders	6.3	5.0	6.2	Diseases of the Skin	5.7	3.8	5.6
Dysentery and Diarrhoea	5.9	7.7	6.0				
Infective Hepatitis	5.9	15.9	6.4	Psychiatric Disorders	4.9	3.6	4.8
Cellulitis and I.A.T.	5.2	3.5	5.1				
Tonsillitis and Pharyngitis	4.3	4.3	4.3	Cellulitis and I.A.T.	4.0	2.5	4.0
P.U.O.	3.2	4.0	3.3				
Otitis Media and Externa	2.0	1.2	2.0	Genito-Urinary Disorders	2.1	2.3	2.1
Bronchitis	2.0	1.8	2.0				
Pneumonia	1.9	1.8	1.9	Diseases of the Eye	1.1	0.4	1.0
Dermatitis	1.9	1.0	1.8				
Boils and Carbuncles	1.7	1.9	1.7	Diseases of Mouth, Teeth and Gums	0.4	1.1	0.4
Rheumatic Conditions	1.6	1.9	1.6				
Common Cold	1.5	1.8	1.5	Other Diseases	53.5	54.2	53.6
Impetigo	1.4	0.7	1.4				
Dyspepsia and Gastritis	1.2	3.0	1.3	All Diseases	77.5	73.2	77.2
Sandfly Fever	1.2	2.5	1.3				
Haemorrhoids	1.2	1.2	1.2	All Accidents	8.6	26.8	22.8
Diphtheria	1.1	0.9	1.1				
Hernia	0.9	0.3	0.9	All Battle Casualties	13.8		
Appendicitis	0.7	1.1	0.7				
Synovitis and Arthritis	0.7	0.5	0.7	Other Diseases	15.6	21.0	15.9
Conjunctivitis	0.7	0.2	0.7				
Scabies	0.7	0.3	0.6	All Cases	100.0	100.0	100.0
I.D.K.	0.6	0.7	0.6				
Balanitis and Posthitis	0.6	0.2	0.5	All Diseases	77.5	73.2	77.2
Varicose Veins	0.5	0.4	0.5				
Epidermophytosis	0.5	0.3	0.5	All Accidents	8.6	26.8	22.8
Sinusitis	0.4	1.0	0.4				
Cystitis and Pyelitis	0.4	0.4	0.4	All Battle Casualties	13.8		
Keratitis	0.4	0.2	0.3				
Vincent's Angina and Gingivitis	0.2	0.4	0.2	Other Diseases	15.6	21.0	15.9
T.B. (All Types)	0.2	0.3	0.2				
Peptic Ulcer	0.1	0.4	0.1	All Cases	100.0	100.0	100.0
Other Diseases	15.6	21.0	15.9				
All Diseases	100.0 (31,429)	100.0 (1,654)	100.0 (33,083)	All Cases	100.0 (40,575)	100.0 (2,259)	100.0 (42,834)

Relative morbidity rate (R.M.R.) is the percentage of cases with a given diagnosis among total sick (diseased as opposed to injured) cases during a given period.

Relative casualty rate (R.C.R.) is the percentage of casualties of a given specification among all cases in a given period, including injuries in addition to sick.

TABLE 36

Detailed Breakdown of Certain Diseases and Disease Groups shown in Table 35; Other Ranks

Malaria		Psychiatric Disorders	
B.T.	86.5	Psychooses	4.2
M.T.	3.3	Anxiety Neurosis	72.0
Q.	0.2	Hysteria	17.4
Clinical	10.0	Psychopathic Personality	4.0
	100.0 (16.4)	Mental Deficiency	1.3
		Others	1.1
			100.0 (6.3)
Veneral Disease		Jaundice	
Gonorrhoea	59.4	Infective Hepatitis	94.3
Gonorrhoea Uncertain	6.4	Weil's Disease	0.2
Syphilis	9.1	Post Arspenamine	
Chancroid	22.0	Jaundice	5.5
Others	3.1		100.0 (6.2)
	100.0 (11.0)	Dysentery and Diarrhoea	
Diseases of Ear, Nose and Throat		Dysentery-Protozoal (including Amoebic)	4.7
Tonsillitis and Pharyngitis	56.8	Dysentery-Bacillary—	
Otitis Media	17.5	Flexner	1.0
Otitis Externa	9.5	Sonne	0.2
Sinusitis	5.5	Shiga	0.1
Others	10.7	Unspecified	28.2
	100.0 (7.5)	Dysentery-Unspecified	8.1
		Enteritis and Gastro-	
		Enteritis	33.2
		Diarrhoea	24.5
			100.0 (5.9)
Skin Conditions		Pneumonia	
Boils and Carbuncles	23.4	Lobar	32.2
Impetigo	18.9	Primary Atypical	48.6
Epidermophytosis—		Secondary (inc. Influenzal)	9.9
Groin	0.8	Others and Unspecified	9.3
Feet	3.7		100.0 (1.9)
Other	2.3	Eye Diseases	
Dermatitis	25.7	Conjunctivitis	49.9
Others	25.2	Keratitis	25.6
	100.0 (7.3)	Others	24.5
			100.0 (1.4)
		Diphtheria	
		Faucial, Laryngeal and	
		Nasal	62.4
		Cutaneous	10.3
		Others and Unspecified	27.3
			100.0 (1.1)

Figures in brackets are Relative Morbidity Rates.

TABLE 37

Relative Wastage and Morbidity Rates and Overall Mean Duration of Stay: Eighth Army: Other Ranks: Italy, 1944

	R.W.R.	R.M.R.	M.D.S. Overall	Ranks		R.W.R.	R.C.R.	M.D.S. Overall	Ranks	
				Wastage	Morbidity				Wastage	Morbidity
Malaria (All Types)	15.4	16.4	22.2	1	1	6.0	5.7	28.7	1	2
Veneral Disease	10.7	11.0	23.2	2	2					
Infective Hepatitis	8.2	5.9	32.9	3	5					
Dysentery and Diarrhoea	5.9	5.9	23.8	4	4	4.0	4.0	2.71	2	4
Cellulitis and I.A.T.	5.9	5.2	27.1	5	6					
Diphtheria	3.4	1.1	71.4	6	20					
Pneumonia	3.3	1.9	40.8	7	11					
Tonsillitis and Pharyngitis	3.0	4.3	16.8	8	7	3.8	5.8	18.0	3	1
Psychiatric Disorders Dermatitis	2.9	6.3	10.8	9	3					
	2.4	1.9	30.5	10	12					
P.U.O.	2.2	3.2	16.3	11	8					
Hernia	2.1	0.9	56.0	12	21					
Boils and Carbuncles Bronchitis	2.1	1.7	28.3	13	13	1.4	2.1	17.9	5	5
	2.0	2.0	24.3	14	10					
Rheumatic Conditions Rheumatic Conditions	1.9	1.6	27.7	15	14	0.9	1.1	22.4	6	6

Otitis Media and Externa	1.6	19.1	16	9					
Impetigo	1.6	27.7	17	16					7
Haemorrhoids	1.5	28.3	18	19				0.4	10.2
Appendicitis	1.3	44.2	19	22				53.5	25.1
Dyspepsia and Gastritis	1.0	18.7	20	17					
Synovitis and Arthritis	0.9								
Varicose Veins	0.8	30.0	21	23					
Common Cold	0.8	39.1	22	28					
I.D.K.	0.6	13.0	23	15					
Epidermophytosis	0.6	26.3	24	26					
Sandy Fever	0.5	28.9	25	29				67.3	23.7
Conjunctivitis	0.5	8.9	26	18					
Scabies	0.5	18.7	27	24					
Keratitis	0.5	18.4	28	25				8.7	27.8
Sinusitis	0.5	30.1	29	32					
Cystitis and Pyelitis	0.4	21.8	30	30				13.8	46.9
Balanitis and Posthitis	0.4	26.0	31	31					
Other Diseases	0.2	9.5	32	27					
All Diseases	16.9	25.1						100.0	27.3
	100.0	23.7						100.0	(40,575)
		(31,429)							

R.W.R.=Relative wastage rate, the proportionate contribution each type of casualty makes to total days spent in medical units specified by casualties of all kinds or by casualties of a particular class.
M.D.S.=Mean duration of stay.

TABLE 38

Wastage and Duration of Stay in Hospital and Convalescent Depot separately: Eighth Army: Other Ranks: Italy, 1944

	Hospital only		Convalescent Depot only			
	M.D.S. (days)	R.W.R.	Proportion sent to Con. Depot	M.D.S.* (days)	R.W.R.	Con. Depot Wastage = Total Wastage (%)
Malaria (All Types)	15.9	14.4	36.2	17.4	18.1	28.4
Venereal Disease	22.9	13.9	1.3	22.9	0.6	1.3
Infective Hepatitis	20.2	6.6	66.2	19.2	13.1	38.6
Dysentery and Diarrhoea	17.7	5.8	27.1	22.4	6.3	25.6
Cellulitis and I.A.T.	19.1	5.5	31.4	25.5	7.3	29.5
Diphtheria	46.5	3.0	76.3	32.7	5.0	34.9
Pneumonia	26.2	2.8	63.2	23.1	4.8	35.8
Tonsillitis and Pharyngitis	13.1	3.1	21.9	16.8	2.8	22.0
Psychiatric Disorders	9.6	3.4	5.4	22.6	1.3	11.1
Dermatitis	26.6	2.8	20.2	19.2	1.3	12.8
P.U.O.	13.0	1.3	15.9	20.5	1.9	20.3
Hernia	34.1	1.7	77.4	28.3	3.5	39.1
Boils and Carbuncles	21.4	2.0	26.4	26.3	2.1	24.4
Bronchitis	17.4	1.9	32.4	21.2	2.4	28.4
Rheumatic Conditions	18.5	1.6	35.5	26.0	2.6	33.2
Otitis Media and Externa	15.9	1.8	16.1	20.1	1.1	16.8
Impetigo	24.2	1.9	20.0	17.5	0.9	12.6
Appendicitis	21.4	0.9	80.6	28.3	2.9	51.6
Haemorrhoids	20.8	1.1	29.0	25.9	1.3	26.5
Dyspepsia and Gastritis	15.3	1.0	17.1	19.8	0.7	18.2
Synovitis and Arthritis	21.1	0.8	40.0	22.2	1.1	29.7
Varicose Veins	21.6	0.6	40.0	43.8	1.5	44.8
Common Cold	10.9	0.9	8.1	26.1	0.6	16.2
Sandfly Fever	8.9	0.7	—	—	—	—
I.D.K.	13.9	0.4	54.2	22.8	1.2	47.2
Epidermophytosis	25.6	0.7	12.5	26.0	0.2	11.4
Conjunctivitis	15.1	0.6	18.2	19.8	0.4	19.3
Scabies	16.6	0.6	5.7	32.7	0.2	9.8
Keratitis	24.7	0.5	20.7	26.3	0.3	17.9
Sinusitis	17.5	0.4	25.0	17.3	0.3	19.7
Cystitis and Pyelitis	22.5	0.4	26.3	13.2	0.2	13.5
Balanitis and Posthitis	8.9	0.3	2.1	26.0	0.7	6.3
Other Diseases	15.7	16.2	20.0	20.0	13.2	—
All Diseases	18.0	100.0	26.1	21.7	100.0	24.1
Diseases of the Skin	24.4	7.3	19.8	21.6	1.1	15.0
Cellulitis and I.A.T.	19.1	4.0	31.4	25.5	1.5	29.5
Diseases of Ear, Nose and Throat	14.3	4.4	20.6	18.2	1.0	20.6
Psychiatric Disorders	9.6	2.4	5.4	22.6	0.3	11.1
Genito-Urinary Disorders	14.9	1.6	14.4	21.1	0.3	16.8
Diseases of the Eye	18.3	1.0	18.3	22.2	0.2	18.3
Diseases of Mouth, Teeth and Gums	10.2	0.2	—	—	—	—
Other Diseases	18.6	52.6	30.3	21.3	48.9	16.1
All Diseases	18.0	73.5	26.1	21.7	53.3	24.1
All Accidents	16.6	7.6	37.0	30.5	11.9	40.5
All Battle Casualties	26.6	18.9	68.4	30.6	34.8	44.6
All Cases	19.0	100.0	32.2	25.1	100.0	30.4

* M.D.S. of cases actually sent to Con. Depot.

Table 39 shows that malaria and infective hepatitis had seasonal movements which were largely compensatory and Table 40 that malaria, venereal diseases, infective hepatitis and dysentery together were responsible for approximately one-third of the total hospital admissions in each quarter.

TABLE 39

Seasonal Variations with Respect to Certain Diseases: Relative Monthly Rates: Eighth Army: Other Ranks: Italy, 1944

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Coef. of Variation
Diphtheria	{ a 10.7 b 16.7	16.0 15.6	16.0 14.0	7.8 8.9	7.0 5.3	0.8 3.1	4.5 4.3	4.5 3.5	4.1 3.3	7.0 7.4	12.7 9.9	9.0 8.0	100 100	57.0 56.6
Dysentery	{ a 5.3 b 3.7	4.1 3.3	4.0 2.7	3.2 2.2	5.7 3.5	17.4 12.7	22.3 23.4	10.5 13.9	11.3 11.0	8.5 12.9	4.5 7.3	3.1 3.3	100 100	70.8 76.0
Infective Hepatitis	{ a 18.6 b 16.4	10.6 11.2	6.7 5.9	5.9 4.8	3.1 3.5	2.9 3.0	4.7 3.9	6.3 5.3	8.8 9.5	13.0 13.9	13.7 13.2	5.8 9.4	100 100	57.0 53.2
Malaria	{ a 4.4 b 3.1	6.1 5.0	12.8 9.1	15.9 13.8	10.6 12.2	8.6 10.0	10.9 11.6	8.9 12.3	8.5 7.9	5.9 6.7	4.9 5.0	2.4 3.2	100 100	43.7 43.8
V.D.	{ a 8.4 b 10.1	11.5 9.6	8.5 9.2	7.8 9.2	6.6 7.9	9.2 7.9	8.3 8.3	7.0 8.0	4.8 6.3	8.7 6.8	11.2 8.6	7.9 8.2	100 100	22.4 16.1
Bronchitis	a 11.2	12.1	12.0	8.5	4.3	5.2	7.8	7.9	6.1	8.4	8.2	8.2	100	26.2
All Diseases	{ a 9.2 b 8.6	9.6 8.3	9.9 8.2	9.0 8.5	8.2 8.1	7.8 8.8	9.1 11.0	7.9 9.1	8.1 7.5	7.4 7.4	7.7 7.9	6.2 6.6	100 100	16.1 15.4
All Accidents	a 8.1	7.3	8.2	7.6	8.5	10.1	10.0	10.1	7.5	6.3	7.7	8.6	100	16.4
Battle Casualties	a 12.0	16.9	8.7	5.7	12.1	8.3	8.0	3.6	12.4	5.5	3.1	3.8	100	

(a) Cases treated in hospital.

(b) Cases treated in all medical units.

TABLE 40

Seasonal Fluctuation of Hospital Cases: Quarterly Relative Morbidity Rates with respect to certain Diseases: Eighth Army: Other Ranks: Italy, 1944

	January-March	April-June	July-September	October-December
Diphtheria . . .	1.1	0.4	0.4	1.0
Dysentery . . .	2.4	5.5	8.8	3.8
Infective Hepatitis . . .	7.3	2.7	4.5	8.5
Malaria . . .	12.0	20.6	16.8	9.0
V.D. . . .	10.3	10.1	8.4	13.8
Bronchitis . . .	2.4	1.3	1.7	2.3
All Diseases . . .	100.0	100.0	100.0	100.0

TABLE 41
Eighth Army. Ratio of Sick by Formations (per 1000/diem)
Weekly, October–November 1943

Formation	October				November			
	9	16	23	30	6	13	20	27
78 Div.	3.62	3.29	3.61	3.32	2.86	2.82	2.35	2.82
Cdn. Div.	5.64	5.24	4.33	5.33	4.06	3.58	3.10	3.80
5 Div.	2.08	2.40	2.31	1.96	2.45	2.16	3.05	2.41
Ind. 8th Div.	—	—	0.92	0.40	1.19	0.84	1.10	1.16
N.Z. 2nd Div.	—	—	—	—	—	—	—	1.01
Cdn. Tk. Bde.	4.84	2.81	1.94	1.81	2.33	2.96	2.22	1.21
4th Arm'd. Bde.	3.16	5.34	2.30	1.34	2.08	—	3.37	2.05
V Corps Tps.	—	3.36	2.81	2.36	5.36	5.24	4.62	4.65
XIII " "	3.62	1.18	0.72	0.89	0.71	1.23	1.72	1.83

TABLE 42
Eighth Army. Ratio of Sick (per 1,000/diem)

<i>Week ending</i>		<i>Week ending</i>	
December 4, 1943	1.59	January 6, 1945	1.47
11	1.92	13	1.31
January 15, 1944	1.73	20	1.51
February 5	1.80	27	1.51
March 3	1.74	February 3	1.48
		10	1.40 Average
July 8	2.19	17	1.35 1.46
15	2.06	24	1.52
22	2.18	March 3	1.53
29	2.21	10	1.42
August 5	2.02 Average	17	1.53
12	2.14 1.93	24	1.52
19	1.86	31	1.49
26	1.70		
September 2	2.14	April 7	1.53
9	1.63	14	1.41
16	1.83	21	1.17
23	1.64	28	1.21
30	1.52	May 5	1.09
		12	1.43 Average
October 7	1.84	19	1.63 1.36
14	1.58	26	1.30
21	1.83	June 2	1.33
28	1.49	9	1.41
November 4	1.50	16	1.29
11	1.53 Average	23	1.50
18	1.70 1.59	30	1.42
25	1.71		
December 2	1.64		
9	1.59		
16	1.52		
23	1.28		
30	1.43		

TABLE 43

*Sick admitted to Eighth Army Medical Units
September–November 1943*

September	. 10,950	985/1,000/annum
October	. 10,247	767/1,000/annum
November	. 7,357	609/1,000/annum

TABLE 44

*Ratio of Battle Casualties to Sick
September–November 1943*

Eighth Army	1:6
Canadians	1:7.5
New Zealanders	1:1
Indians	1:0.8

TABLE 45

*Eighth Army. Numbers and Ratio of Battle Casualties by Formation
October–November 1943*

Formation	October				November			
	9	16	23	30	6	13	20	27
78 Div.	770 5'24	50 0'34	65 0'43	156 1'11	245 1'67	43 0'29	33 0'22	106 1'37
Cdn. Div.	107 0'79	98 0'73	68 0'50	120 0'84	21 0'17	4 0'03	1 0'008	70 0'56
Cdn. Tk. Bde..	1 0'05	—	—	1 0'04	—	—	—	—
4th Armd. Bde.	—	4 0'12	—	—	25 1'38	—	3 0'16	7 0'39
5th Div.	2 0'01	70 0'53	22 0'17	3 0'02	114 0'83	15 1'11	4 0'03	60 0'43
Ind. 8th Div.	—	—	6 0'04	18 0'13	339 2'43	52 0'37	24 0'18	10 0'07
N.Z. Div.	—	—	—	—	—	—	—	201 1'36
V Corps Tps.	—	—	5 0'21	1 0'02	52 0'86	28 0'36	6 0'08	27 0'34
XIII „ „	30 0'45	1 0'01	3 0'04	7 0'09	5 0'06	—	3 0'04	13 0'17

THE ARMY MEDICAL SERVICES

TABLE 46

Eighth Army. Battle Casualties during the Assault Landings and the Initial Advance

<i>Strength</i>	<i>Week ending</i>	<i>Casualties</i>	
September 135,000	September 4	148	
		11	493
		18	142
		25	125
October 160,000	October 2	62	
		9	192
		16	312
		23	187
		30	372
			1,125
November 145,000	November 6	816	
		13	149
		20	83
		27	533
			1,581
	Totals		3,614

TABLE 47

Eighth Army. Battle Casualties

<i>Period</i>	<i>Numbers</i>	<i>Ratio per 1,000/diem</i>
September–November 1943	3,614	0·31
December 1943–March 1944	8,422	0·43
April–June 1944	—	0·63
July–September 1944	19,975	0·73
October–December 1944	10,995	0·40
January–March 1945	3,679	0·14
April–May 1945	6,210	0·39
Total.	52,895	

TABLE 48

XIII Corps. Admissions to Divisional Medical Units September 3–December 31, 1943

<i>Formation</i>	<i>Period u/c XIII Corps</i>	<i>Battle Casualties</i>	<i>Sick</i>
5th Div.	Sept. 3–30	792	5,877
	Oct. 11–Dec. 31		
78th Div.	Sept. 27–Oct. 11	885	775
	Sept. 3–Dec. 2		
Cdn. Div.	Sept. 3–Dec. 2	933	6,594
	Dec. 15–31		
N.Z. Div.	Dec. 15–31	1,323	1,214
	Sept. 3–Nov. 15		
Cdn. Tk. Bde.	Sept. 3–Nov. 15	2	523
	Totals	3,935	14,983

TABLE 49
*XIII Corps. Admissions on account of Certain Diseases
September 3–December 31*

Formation	Infective Hepatitis	Fever N.Y.D.	Malaria Clinical	Malaria Diagnosed	Scabies	Veneral All forms
5th Div. . . .	505	1,632	707	303	85	174
78th Div. . . .	72	319	19	1	14	1
Cdn. Div. . . .	1,319	1,173	537	125	109	219
N.Z. Div. . . .	67	50	—	—	2	—
Cdn. Tk. Bde. . .	89	27	20	2	38	17
Totals	2,052	3,201	1,283	431	248	411

Average Sick rate for the period : 3·23/1,000/diem

TABLE 50
*XIII Corps. Battle Casualties and Sick
January–March 1944*

Formation	Period u/c XIII Corps	Battle Casualties	Sick
5th Div. . . .	Jan. 1–8	6	199
78th Div. . . .	Jan. 1–Feb. 17		
	March 26–31	93	1,746
N.Z. Div. . . .	Jan. 21–Feb. 1		
	March 26–31	232	640
Ind. 4th Div. . .	Jan. 20–31	130	180
Ind. 8th Div. . .	Feb. 8–March 2	143	753
Cdn. 5th Armd. Bde.	Jan. 21–Feb. 1	52	164
Cdn. 1st Armd. Bde.	Feb. 5–26	—	141
2nd Para. Bde. . .	Feb. 8–March 2	21	60
XIII Corps Tps. . .	Jan. 1–March 31	29	499
	Totals	706	4,382

Average Sick rate. December 1943–March 1944 2·03/1,000/diem

TABLE 51
*XIII Corps. Battle Casualties and Sick
April–June 1944*

Formation	Battle Casualties	Sick
6th Armd. Div. . . .	260	1,452
4th Div.	3,002	3,558
78th Div.	2,261	4,802
S.A. 6th Armd. Div. . .	682	656
N.Z. 2nd Div.	104	196
Ind. 8th Div.	1,453	619
Cdn. 1st Armd. Bde. . .	575	7
XIII Corps Tps. . . .	464	3,803
Totals	8,801	15,093

Average Sick rate. April–June 1944 3·87/1,000/diem

TABLE 52

*XIII. Corps. Battle Casualties**May II-July I, 1944*

Killed . . .	146 Officers	1,316 O.Rs.
Wounded . . .	463	6,527
Missing . . .	26	682
<hr/>		
Totals . . .	635	8,525

TABLE 53

XIII Corps. Psychiatric Casualties as a percentage of Total Battle Casualties

Formation	October	November	December
	1944	1944	1944
78th Div. . . .	22.0	37.0	23.0
1st Div.	7.9	9.0	7.0
6th Armd. Div. . .	21.0	9.0	4.2 (Infantry units only)
Ind. 8th Div. . . .	16.1	44.0	—

TABLE 54

XIII Corps. Distribution of Wounds by Anatomical Region

	Aug.-Sept.	Oct.-Dec.	Jan.-March
	1944	1944	1945
Head, Face, Neck . . .	10.5	16.1	15.4
Chest	8.5	5.1	7.2
Upper Arm	5.7	6.4	8.5
Forearm and Hand . . .	30.5	26.8	27.6
Abdomen	3.8	3.0	3.7
Back	2.8	2.2	3.1
Buttocks	4.7	5.0	3.2
Thigh	12.4	17.1	13.5
Leg and Foot	20.9	17.8	18.5
Genitalia	0.9	0.5	0.3

TABLE 55

*V Corps. Principal Diseases.**July-September 1944. Number of Cases*

Principal Diseases	Veneral Diseases
Alimentary	Gonorrhoea
I.A.T.	Urethritis
Exhaustion	N.Y.D. V.S.
Malaria	Syphilis
Fever (N.Y.D.)	Other forms
Dysentery	
Scabies	
Pediculosis	

Total sick

July 1–August 25 3,466
 August 26–September 30. 5,803

Average Weekly Sick Rate . 10·4/1,000/week = 1·5/1,000/diem
 Battle Casualties 7,228

October–December 1944

Principal Diseases

Alimentary . . . 1,573
 I.A.T. 1,490
 Exhaustion . . . 1,059
 Malaria 577
 Fever N.Y.D. . . . 553
 Dysentery 236
 Scabies 393
 Pediculosis 311
 Infective Hepatitis . . 968
 Diphtheria 59

Venereal Disease

Gonorrhoea . . . 198
 Urethritis 95
 N.Y.D. V.S. 70
 Syphilis 23
 Other forms 154

Total Sick 12,568
 „ Injured (non-battle) 1,366

Average Weekly Sick Rate . 10·25/1,000/week = 1·4/1,000/diem
 Battle Casualties 5,548

October–December 1944

Weekly Incidence of Sick, Battle Casualties and the more prevalent Infectious Diseases (expressed as Rate per 1,000 per Week)

Week ending	Sick	B.C.	Malaria	Infective Hepatitis	V.D.	Excremental Diseases
Oct. 7 .	11·22	3·34	0·10	0·61	0·19	1·00
14 .	9·56	7·65	0·52	0·76	0·20	0·59
21 .	10·91	4·00	0·63	0·67	0·45	0·44
28 .	9·91	4·25	0·56	0·82	0·26	0·76
Nov. 4 .	10·03	1·94	0·66	0·66	0·23	0·47
11 .	9·58	3·36	0·57	0·67	0·31	0·18
18 .	11·13	3·27	0·38	0·70	0·30	0·18
25 .	10·13	6·07	0·41	1·33	0·64	0·25
Dec. 2 .	10·59	3·76	0·19	1·27	0·56	0·13
9 .	9·54	6·51	0·14	1·05	0·58	0·30
16 .	10·08	6·02	0·18	0·88	0·49	0·18
23 .	10·16	4·90	0·17	0·71	0·78	0·07
30 .	10·33	3·23	0·08	0·61	0·80	0·07
Average Incidence	10·25	4·48	0·35	0·83	0·45	0·36

January-March 1945

Principal Diseases		Venereal Disease	
Alimentary	993	Gonorrhoea	394
I.A.T.	1,341	Urethritis	204
Exhaustion	601	N.Y.D. V.S.	139
Malaria	800	Syphilis	69
Fever N.Y.D.	762	Other forms	65
Dysentery	62		
Scabies	1,106		
Pediculosis	425		
Infective Hepatitis	392		
Diphtheria	91		
Total Sick	12,510		
„ Injured (non-battle)	1,780		
Average Weekly Sick Rate	9.75/1,000/week = 1.39/1,000/diem		
Battle Casualties	2,109		

April-June 1945

Principal Diseases		Venereal Disease	
Alimentary	723	Gonorrhoea	423
I.A.T.	902	Urethritis	75
Exhaustion	425	Syphilis	57
Malaria	653	Chancroid	56
Fever N.Y.D.	537	Venereal Sore	58
Dysentery	47	Balanitis	13
Scabies	639	Other forms	12
Pediculosis	376		
Infective Hepatitis	153		
Diphtheria	14		
Total Sick	7,476		
„ Injured	1,844		

At the end of March the sick rate stood at 9.0/1,000/week.

From then until mid-May it gradually dropped to 3.8/1,000/week.

After this it gradually rose to 7.0/1,000/week.

Battle Casualties 3,106

TABLE 56
V Corps. Casualties passing through Medical Units
April 9-May 2, 1945

Medical Unit	B.Cs.	Battle Accidents	Sick	P.o.W.		
				B.Cs.	Battle Accidents	Sick
5 C.C.S.	2,050	160	1,418	8	—	23
1 C.C.S.	1,043	76	113	—	—	2
9 (Ind.) C.C.S.	1,282	—	884	—	—	3
57 F.D.S.	315	21	35			
58 F.D.S.	311	—	6			
Totals	5,001	257	2,456	8	—	28

Types of Wound

Medical Units	Shell	Mortar	M.G.	S.A.	Bomb	Mine	Burn	Misc.	Gas gan- grene	Gren- ade
5 C.C.S. .	998	220	178	158	116	99	41	240	3	—
1 C.C.S. .	379	110	157	55	36	81	29	116	—	34
9 (Ind.) C.C.S.	440	61	323	—	137	—	30	291	1	—
57 F.D.S. .	149	17	55	25	35	18	1	—	4	15
58 F.D.S. .	154	—	—	—	—	39	4	103	5	—

Also 1 C.C.S. 18 injuries due to blast, 4 to immersion in water and 5 to crushes by debris.

TABLE 57

X Corps. Admissions to Medical Units. Casualties

October 1943–March 1944

Admissions to Medical Units

October–November 1943

October . . .	8,489	(Battle Casualties 2,035
November . . .	6,643	Sick 13,097)
	<u>15,132</u>	

Ratio of Battle Casualties to Sick, 1:6.5

Average daily strength of X Corps, 74,032

Classification of Battle Casualties

Type	Number
Head and Neck . . .	251
Shoulder	113
Chest	149
Abdomen	112
Limbs	914
Multiple	321
Blast Effects	83
Unclassified	92
Total	<u>2,035</u>

Sick

Diseases of the Alimentary System	1,689
" Respiratory " 	648
" Nervous " 	72
" Skin	607
Psychosis	4
Psychoneurosis	392
I.A.T.	1,810
Injuries, accidental	102
" self-inflicted	15
" burns	159
" others	750
Other Diseases	<u>6,849</u>
Total	13,097

Infectious Diseases

Diphtheria	168	Pneumonia, pneumococcal	6
Dermophytosis	137	Pediculosis, capitis	8
Dysentery, amoebic	3	" corporis	38
" bacillary	16	" pubis	85
" clinical	179	Scabies	141
Enteric Gp., clinical	1	Sandfly	1
Food poisoning	1	V.D. Gonorrhoea	290
Influenza	4	Syphilis	33
Infective Hepatitis	1,071	Chancroid	39
Jaundice, other causes	23	Other forms	475
Malaria		Erysipelas	2
Primary, B.T.	385	Varicella	1
" M.T.	185	Scarlatina	1
" Q.	1	Black Water Fever	1
" clinical	298	Rubella	1
Relapse, B.T.	37	Parotitis	1
" M.T.	17	Post Diphtheria Neuritis	1
" Q.	2	Polio Encephalitis	1
" clinical	39	Anterior Poliomyelitis	5
Meningitis, meningococcal		Chickenpox	2
Pneumonia, other causes	8		

*X Corps. Casualties**December 1943–March 1944*

<i>Average Strength</i>	<i>Total Admissions all causes</i>	<i>British and Commonwealth</i>
4th Div. 21,882	December	5,836
46th Div. 20,263	January	11,420
56th Div. 18,748	February	5,911
Corps Tps. 26,362	March	2,773
	Total	<hr/> 25,940

Classification of Battle Casualties

<i>Type</i>	<i>British and Commonwealth</i>
Head and Neck	949
Trunk	862
Limbs	2,541
Miscellaneous	1,241
Total	<hr/> 5,593

Classification of Sick

	<i>British and Commonwealth</i>
Diseases of the Alimentary System .	2,516
" " Respiratory " .	1,609
" " Nervous " .	148
" " Skin " .	1,689
Psychosis	5
Psychoneurosis (Exhaustion)	1,316
I.A.T.	2,090
Injuries, accidental	237
" self-inflicted	17
" burns	223
" others	1,358
Trench Foot	181
Other Diseases	8,969
	<hr/>
Total.	20,358

Infectious Diseases

	<i>British and Common- wealth</i>		<i>British and Common- wealth</i>
Diphtheria	239	Helminthic Diseases	5
Dermophytosis	55	Pneumonia, pneumococcal	2
Dysentery, amoebic	1	" other causes	52
" protozoal	4	Pediculosis, capitis	12
" bacillary	34	" corporis	525
" clinical	184	" pubis	180
Enteric Group	1	Scabies	596
" " Typhoid	2	V.D. Gonorrhoea	398
Influenza	10	Syphilis	29
Infective Hepatitis	1,469	Chancroid	4
Jaundice, Arsenical	5	Other Forms	1,127
" other causes	6	Erysipelas	1
Malaria, Primary B.T.	271	Varicella	1
" " M.T.	27	Rubella	1
" " Q.	6	Parotitis	4
" " clinical	4,011	Polio Encephalitis	1
" Relapse B.T.	281	Anterior Poliomyelitis	5
" " M.T.	42	Anthrax	1
" " Q.	2	Scarlet Fever	2
" " clinical	125	Tuberculosis, Pulmonary	1
Meningitis, meningococcal	1	Whooping cough	1
" other causes	1		
Gas Gangrene	13		

THE ARMY MEDICAL SERVICES

TABLE 58

*New Zealand 2nd Division. Casualties**November 1943–November 1944*

Battle Casualties (including killed and P.o.W.)	6,094
Sick	14,583
Evacuated for Medical Boards	288
Returned to Units from M.D.S.	3,740
Temporarily lost to the Division	17,225

The number of casualties passing through the medical units during the course of the year equalled the strength of the Division.

*New Zealand 2nd Expeditionary Force. (Italy and Egypt.)**Daily Hospital Admission Rate per 1,000 Strength**January–May 1945*

	Offrs.	O.Rs.	Total Cases	Total with B.Cs. excluded
January	1·89	2·19	2,143	2,040
February	1·7	2·0	1,984	1,893
March	1·7	2·1	2,095	2,074
April	2·07	3·25	2,769	1,679
May	1·5	2·35	2,141	2,074
			11,132	9,760

*New Zealand 2nd Expeditionary Force
Patients in Hospital (Percentage of Force)**January–May 1945*

	Italy	Excluding B.Cs.	Middle East	Total Patients
January 1	9·75	6·98	3·4	2,720
„ 31	7·36	5·91	3·28	2,104
February 28	5·77	4·67	2·70	1,775
March 31	5·78	5·00	4·2	1,523
April 30	9·18	4·77	5·1	2,399
May 31	4·69	3·43	5·3	1,410

*New Zealand 2nd Division**Battle Casualties and Accidental Injuries**January–May 1945*

	<i>Battle Casualties</i>	<i>Accidental Injuries</i>
January	103	234
February	91	196
March	21	376
April	1,090	251
May	64	303
	<u>1,369</u>	<u>1,360</u>

PRINCIPAL DISEASES AFFECTING THE TROOPS,
EIGHTH ARMY

MALARIA *

Between September 4 and November 27, 1943, 9,263 cases of malaria (5,410 clinical; 3,556 diagnosed microscopically; 297 relapses) were admitted to medical units of Eighth Army, while during the same time 6,454 N.Y.D. Fever cases were treated in field ambulances and C.C.Ss. It was assumed that the great majority of N.Y.D. cases were malarial, so that the grand total of cases for this disease probably amounted to some 15,000 (Sicily 10,395), giving an average of over 1,200 admissions per week for the period.

The peak incidence was reached during the last week in September, when no less than 1,477 cases were admitted. The peak incidence during the Sicilian campaign was reached during the second week in August with a total of 1,819 cases.

It was difficult to decide when fresh infections occurred in Italy, but the vast majority of admissions (save those from 1st Airborne Division) during the first three weeks had probably been infected in Sicily. The marked fall in incidence after the third week in September, when the troops were in the Foggia region, supported this conclusion, more particularly as the incidence in Canadian 1st Division rose to 268 during the week ending September 25 and the Canadians were practically the only Eighth Army troops in highly malarious areas during this period, having passed through Catanzaro and the Taranto plain.

The sudden fall in incidence between September 25 and October 2 was taken to indicate that the infection rate in Italy was relatively low. Nevertheless, large numbers of 5th Division and XIII Corps troops did become infected in the advance from Reggio to Foggia and in the valleys drained by the Rivers Petraco, Messina and Angitola.

Fresh infections in Canadian 1st Division began to manifest themselves towards the end of the third week of the invasion. On September 18, this division had reached Crotona and had traversed the highly malarious areas of Delianova, Loiri and Catanzaro. Later the division passed through Potenza and Treblacre and was operating in and forward of the Foggia plain by October 1.

The relative weekly incidence in 5th Division and Canadian 1st Division for the period September 4 to October 2 was 195 to 154. The fact that 5th Division had over 200 more cases during this period was possibly due to the relatively higher number of relapses in this division, which had been heavily infected in Sicily. On the other hand, the fact that 422 cases were admitted during the week ending September 25 would seem to point to a high infection rate in Italy when fighting was taking place between Vibo Valentia, Sapri and Potenza.

* See *Medicine and Pathology* volume, Chapter 7, and *R.A.F. Vol. III, Campaigns*, Chapter 8, page 416, in this Series.

Malaria in V Corps showed itself first in 1st Airborne Division. These troops were infected in the Taranto area and later in the Foggia plain, from which they were withdrawn about October 9.

A total of some 1,790 fevers N.Y.D. and malaria cases were admitted between September 24 and October 30, the great majority being from 78th Division, 4th Armd. Bde. and Corps troops.

As was expected, the incidence of M.T. to B.T. malaria rose relatively during September and October and towards the end of November was approximately fifty-fifty. During the period there were nine deaths from B.T. and three from M.T.

In N.Z. 2nd Division the incidence was very low. The taking of mepacrine tablets six days in the week during the malaria season was made compulsory. In suspected areas mosquito nets and repellents were used. The field hygiene section and the malaria control units carried out a systematic campaign against the mosquito.

Generally speaking, the standard of malaria precautions taken was higher in Italy than it had been in Sicily, owing no doubt to the experience gained in the latter campaign and to the fact that most of the troops were better informed concerning the hazards. Furthermore, mepacrine was taken more regularly by a higher percentage of troops towards the end of the campaign. The remarkably low death rate is worthy of note.

Invaluable work was carried out by 8 Malaria Fd. Lab. during the malaria season. A detachment landed on D-day+1 at Reggio with XIII Corps and the remainder of the unit followed on D-day+7. Surveys were carried out immediately behind the advancing troops and information passed back by means of sketch maps and reports so that up-to-date information regarding the malarious nature of the country in which troops were operating was available at the earliest possible moment. Close contact was kept with hygiene and specialist malaria officers in divisions and corps and malaria survey maps were supplied. As regards control measures, emphasis was laid on adult destruction, experience in Sicily having shown that larval control and other control measures were of little value during a rapid advance. The unit eventually reached Foggia, where it remained until the end of the malaria season, when it moved to Bari to set up a teaching centre for the winter months.

At the end of the period courses of instruction were being held in Bari for R.M.Os., to be followed by classes for specialist malaria, hygiene and malaria control unit officers.

Malaria was not an outstanding problem during the period December 1943-March 1944. Fresh cases gradually diminished in number, but relapses continued to occur. The total number averaged about 60 each week.

The period was chiefly utilised for training purposes. All A.M.C.U.

personnel, and as many medical officers as could be spared, attended special courses in training at Bari run by 8 Malaria Fd. Lab. These courses were very successful. In addition, twelve medical officers attended the special malaria course at the University, Algiers. Considerable difficulty was experienced in filling the vacancies allotted on these courses owing to the long absence from units involved. Though air passage out was obtainable, many had difficulty in obtaining a seat on returning planes.

It was decided that the presence in each field medical unit of at least two intelligent orderlies trained in elementary laboratory technique and in the diagnosis of malaria blood films would be invaluable during the coming malaria season. In consequence, 10-day courses of instruction for specially selected personnel, two from each F.D.S., field ambulance and C.C.S., were arranged at 1 Mob. Bact. Lab. At first each course was restricted to four candidates, but this number was later raised to eight.

The majority of malaria cases occurred in the last four weeks of the period. It is unlikely that many of the cases diagnosed as fresh infections had recently contracted the infection; it is probable that they had done so during the malaria season in North Africa, Sicily or Italy. The criterion adopted for the classification of 'fresh' was the non-occurrence of any previously recorded infection. Suppressive mepacrine treatment had not been stopped until November 15, 1943. It would therefore seem possible that in many of these cases the infection had remained latent and had been brought to the surface by the extremely inclement conditions under which the troops were living.

The incidence of this disease was not alarming during the period April-June 1944, the average of admissions for the three months April, May and June being 95 per 1,000 per week of primary cases and 58 relapses. The incidence was higher before May 20—i.e. before active transmissions began. This rise was due to infections from the previous season, with a few fresh cases infected by hibernating mosquitoes. The subsequent drop corresponded with the rising blood level of mepacrine. The taking of this drug was commenced on April 25.

During the building-up period before the battle, the Army was in potentially highly malarious territory. Although malaria had been absent in epidemic proportion from the Volturno valley for several years it was endemic among the local population. Suppressive medication was common, but not universal, among them. The common type of anophelid found, *maculipennis* var. *typicus*, was breeding in profuse numbers in the irrigation and drainage channels that had been blocked by war damage. The cattle had been dispersed by the enemy or taken into hiding in the hills by the local inhabitants. Furthermore, over 50 per cent. of the troops were actual or potential malaria carriers. Hence it was considered that the potential malaria threat was grave, since the

increased mosquito population had a decreased cattle population on which to feed and were of a type that would readily turn to the human subject.

These conditions obtained in all valleys which the Army traversed. It was considered that, since the beginning of the season, the Army was at all times in an area where malaria transmission was always possible.

A complete malaria control organisation was set up on the basis of the M.C.U., employing military and civilian Italian labour and using power sprayers with D.D.T. spray solution. Dusting by aircraft in certain areas through the M.A.A.F. was also carried out.

The evacuation organisation, obtaining early diagnosis and a minimum of travel for all malaria cases (as well as their retention within the Army area), worked well but was severely taxed during the rapid advance. The existence of a section of a convalescent depot in the Army area was of the utmost assistance in keeping hospital beds free of minor cases and was of great value to the short-term patients who, by passing through the convalescent depot, avoided going straight from hospital to duty.

The incidence gradually declined from the beginning of August onwards. In the last week of July it was 1·34/1,000/week; by the end of September it had sunk to 0·36/1,000/week. As Eighth Army was operating throughout the quarter in only mildly malarious or non-malarious territory, there is nothing remarkable in the fact that the incidence was low.

An extensive outbreak in 5th Division, due to infection during movement by rail before joining Eighth Army, showed what might have happened in other formations had they been suddenly exposed to dangerous mosquito-ridden conditions, e.g. had the hoped for breakthrough into the Po valley taken place. It is understandable that a certain degree of complacency had crept into the Army, partly attributable to excessive propaganda at times when the country occupied was merely potentially and not actually 'highly malarious'. (For example, the area on the southern shores of Lake Trasimene was designated 'red' because of the presence of numerous anophelens, although it was known that malaria had not existed for a considerable time among the civil population.) Troops who occupied such an area for a few weeks and were slack in their precautions, but nevertheless suffered few cases of malaria, were apt to conclude that warnings about highly malarious conditions ahead were exaggerated; the same attitude was noticed even among medical officers. To help counteract this tendency two important directives were issued, one through medical channels on July 27 and another on the order of the Army Commander on August 23. A noticeable improvement in the standard of personal precautions followed upon the issue of each of these instructions.

A comprehensive scheme organised for the implementing of M.C.U.s. on an Army basis worked admirably. In its final application it took the following form :

- (a) Fourteen flysol power spraying teams, each consisting of one driver and two operators, equipped with a power sprayer mounted on a vehicle, operated in forward areas. They were allocated on a divisional basis and covered the entire front. A N.C.O. of the divisional field hygiene section supervised their work locally, but their operations were co-ordinated by a M.C.U. officer who visited all areas at regular intervals and maintained close liaison with A.Ds.H. Corps and officers commanding field hygiene sections.
- (b) D.D.T.-spraying M.C.U.s. were distributed across the whole front on a basis of two per divisional axis. They followed up the work of the flysol spraying teams, covering an area extending to three kms. on either side of the axis. Most of these M.C.U.s. were supplied direct from the Malaria Control Depot, an arrangement which made them independent of other units, which were liable to move frequently, and enabled Army H.Q. to keep in almost daily touch with their activities. Their work was closely supervised by the officers commanding the malaria field laboratories who paid frequent visits to all M.C.U.s. to check up on their work and ensure that all divisional territories were covered. Malaria field laboratories kept corps informed of the situation in their sectors by personal liaison with A.Ds.H. Corps and by forwarding copies of their reports direct to D.Ds.M.S. Corps. If they decided during their visits that any Army M.C.U. should change its location or sphere of activity they were authorised to arrange this on the spot, informing A.D.H. Eighth Army afterwards. The entire scheme was notable in practice for its flexibility and effectiveness.
- (c) Dusting with Paris green by aeroplane was carried out weekly, first in the Trasimene area and over the canal systems near Perugia and Arezzo, later on the Esino and Cesano Rivers. The preventive effects on breeding were excellent.

The incidence of fresh cases during October–December 1944 showed a steady decline from 0·4/1,000/week at the beginning of the quarter to 0·08/1,000/week at the end. The average incidence for the season was 0·77/1,000/week.

The final meeting for the year of the Malaria Committee was held on November 22. The principal lessons of the 1944 season were summarised as follows :

‘D.D.T. has revolutionised malaria control under mobile conditions, concentrating attention on the adult mosquito and relegating larval control to the more static establishment which followed the advance.

‘It is exceedingly difficult to achieve a really satisfactory standard of personal precautions, particularly regarding clothing, and from this

point of view it would be an advantage if the use of shorts could be abolished.

'It is difficult to ensure that unit squads work properly or effectively; they are much too inclined to neglect flysol spraying in favour of anti-larval measures.

'The system of Army control of M.C.Us. was an unqualified success, but would be greatly facilitated by the formation of a malaria control company.

'It is essential that power sprayers for use in forward areas be mounted on jeeps; heavier vehicles cannot be operated far enough forward.'

M.C.Us., which had been placed under command Army for the season, were re-allocated to formations during November on a basis of two per field hygiene section. They were given instruction in typhus control and were employed on disinfestation duties, supervision of labour for scavenging duties, etc. It was the intention to give refresher courses on malaria before the end of the winter, officers and sergeants at the malaria field laboratory and other ranks at field hygiene sections.

It was probably fortunate that the advance into the Ravenna region was delayed until the close of the malaria season. Enormous tracts of country were under water and extensive aeroplane dusting and D.D.T. spraying would have been required before the next season. It is of interest to note, however, that, if any reliance can be placed on the testimony of a German medical officer questioned in the P.o.W. cage who had been in the Po valley throughout the season, the enemy did not suffer any very large numbers of casualties from malaria. This, if true, appears to have been due to efficient personal precautions. It is possible that enemy discipline in this matter was better than that of the Allies. The prisoner detailed the precautions taken but seemed surprised when asked about measures to enforce them.

The incidence of fresh cases fluctuated between 0·02 and 0·16/1,000/week during January–March 1945. All the Italian Gruppi under command were known to be fairly heavily infected, the Cremona Gruppo being the worst. Incidence of relapse was expected to be high in April and May.

Eighth Army was now situated in what was probably one of the most dangerous localities for malaria in Europe. The risk was greatest in the belt which included Ravenna and stretched outwards from Lake Comacchio for a distance of about fifteen miles, as it was here that *A. sacharovi* (*elutus*) bred in the saline marshes; further north this variety was expected to be encountered in large numbers at any place within fifteen miles of the sea. The other vectors in the Po valley (the principal one being *A. maculipennis* var. *stroparvus*) were of less importance. There was a possibility, however, that, should the enemy

flood any considerable part of the lower Po valley, in the subsequent drying out *A. sacharovi* might spread westwards with disastrous results. Planning for the coming season was based upon a recognition of these facts.

The first meeting of the Malaria Committee in 1945 was held on February 20. Medical and 'A' representatives from all formations attended and the Adviser in Malariology, A.F.H.Q., was present. General lines of policy and action were decided.

8 Mob. Mal. Lab. held training courses for medical officers, for officers and N.C.Os. of malaria control units, for Polish A.M.C.Us., for Italian medical officers and malaria officers, and for D.A.As.G. (Malaria). Courses for malaria diagnosis assistants were held at 1 and 2 Mob. Bact. Labs. The Italian malariologist attached to 8 Mob. Mal. Lab. visited all three of the Italian Gruppi and 228th Division, lectured to hygiene personnel and regimental officers and arranged for lectures to be given to all officers by the formation malaria officers who had received special training for this purpose at the laboratory. Unit anti-mosquito squads and unit malaria officers were trained by field hygiene sections or, where this was not possible, by R.M.Os. 11 and 19 Fd. Hyg. Secs. held special courses for Italian squads. So far as formal training was concerned, it was considered that by the end of April the position should be completely satisfactory.

Destruction of hibernating mosquitoes by D.D.T. spraying of buildings began shortly after the middle of March. All malaria control units were placed under command Army for this purpose and the scheme of operation which worked so successfully towards the end of the previous season was put into commission. The Army malaria control company was now authorised, the effective date being April 1, 1945. This would make little difference to the method of operation but would finally put Eighth Army scheme on a firm basis.

1 per cent. D.D.T. solution was applied by hand-sprayers and preparations were well advanced for aircraft control of breeding. In January it was estimated that an area of about 12,000 acres might require treatment in the territory then occupied. This area had been considerably diminished by pumping and natural drainage, but the amount of shallow water and marshy land lying ahead was so enormous that planning was based on an empirical figure of 30,000 acres, of which half might be treated with D.D.T. and half with Paris green. This would necessitate a supply of about 10,000 gallons of 5 per cent. D.D.T. and 20 tons of 25 per cent. Paris green weekly. The airfield at Rimini was selected as the most suitable place to use as a base and a storage and loading depot was established. It was arranged that three large tanks with a total capacity of 8,000 gallons should be connected by means of a pipe-line to a pump and feed pipe; two smaller tanks to be

used for mixing purposes. A mixing plant for Paris green and cement was established at a factory in Cesena.

From the medical point of view one of the most satisfactory results of the final battle was that it saved Eighth Army from danger of an extensive outbreak of malaria in the coming season. On May 24 it was possible to publish an A.R.O. permitting all routine anti-malaria precautions to be discontinued to the north and east of the following boundary:—north of Codroipo, Route 13 to Udine—Route 56 to Gorizia; east of the River Tagliamento. From the end of the battle onwards the only really dangerous areas occupied by Eighth Army troops were those around Monfalcone and Cervignano, and the belt between Route 14 and the sea, especially near the mouth of the River Isonzo. After the settlement of the Trieste dispute it became possible to move nearly all troops out of the really dangerous areas and give thorough cover to those who remained. It is hardly surprising, therefore, that the malaria incidence was low. The highest weekly rate for primary cases was 0·36 per 1,000 in the week ending June 9. In XIII Corps alone, which was the formation most exposed to infection, the highest combined rate for fresh plus relapse cases in June was 0·66/1,000/week; that was at the beginning of June and the rate fell to only 0·13 per 1,000 in the last week of the month, a remarkable figure for a 'highly malarious' zone at the end of June. For this there were several reasons; site selection, vigorous extra-regimental control, and a high standard of personal protection, of which the first was probably the most important factor. Moreover, the most dangerous months in this region are August and September.

Although one result of the success of the final battle was that the elaborate organisation, previously described, for dealing with malaria was never put to a really severe test, it must be conceded that it worked most admirably. There was not a single serious hitch in the arrangements. Detachments of the malaria control company, under the direction of two officers of the malaria field laboratory, achieved very rapid cover of the worst areas by flysol-spraying with power plants mounted on jeeps and 30-cwt. vehicles. This was followed by a systematic spraying of buildings with D.D.T. in kerosene, using hand-sprayers. At first 1 per cent. D.D.T. was used; later the strength was increased to 30 per cent. observations having shown that 1 per cent. D.D.T. as then applied gave only about four weeks' protection. Every building treated was clearly marked with the letters 'D.D.T.', the number of the detachment and the date. With the end of the fighting it became possible to concentrate on the worst areas in which there were aggregations of troops, and about the end of May the programme was completed and all detachments were switched to larval control.

Aircraft spraying and dusting began in the middle of May. The Paris green mixing plant at Cesena and the improvised D.D.T. mixing and

loading arrangements at Rimini were unqualified successes. The American pilots were extremely keen and did excellent work. In the second half of the quarter a total of about thirty tons of Paris green—cement mixture—and the equivalent in diluted concentrate of about ten tons of crude D.D.T. (some 50,000 gallons) were distributed from the air. 8 Mob. Mal. Fd. Lab. carried out continuous surveys, including a check on the Klagenfurt area in Austria, and generally supervised all extra-regimental work in Eighth Army.

The pamphlet 'Don't Get Malaria Now' was distributed to all ranks as a personal issue.

INFECTIVE HEPATITIS *

After the landing on September 4 the incidence of infective hepatitis rose steadily until the figure 412 was reached on October 9. Weekly admissions averaged 253 and a total of 3,298 cases were admitted to hospital during September–November 1943.

The relatively high incidence among officers was again apparent, approximately four to one. All medical officers were asked to pay particular attention to possible aetiological factors and investigations were continued.

During the rest of the year this disease was the chief single cause of sick wastage. During December 1943 there were 1,435 cases as compared with 1,487 in November. The weekly number remained remarkably constant up to the end of December, no peak period being evident. From then onwards the incidence began to fall. For the weeks ending January 8, 15, 22 and 29, the numbers of cases were 259, 224, 164, 130 respectively. During February there was a total of 484 cases, the numbers for each week being 128, 140, 137 and 104 respectively—about 40 per cent. of the number for January. During March there were 284 cases, an average of about 57 cases per week.

The curve of incidence of this disease was remarkably smooth and symmetrical throughout 1944, descending gradually from its initial level of 1.55/1,000/week in the first week of January, passing the bottom of its swing (0.17/1,000/week) towards the end of May, and rising regularly throughout July–September to reach 1.67/1,000/week at the end of September. Figures for 1943 showed no similar regularity of incidence, no doubt because of the rapid transitions of environment through which the Army passed.

An interesting feature was the much higher incidence in Canadian and New Zealand troops than in others. During the period July–September the rate for Canadian troops was 2.05/1,000/week, as against 0.79/1,000/week for the whole Army. One Canadian division (5th Armd.) suffered much more severely than the others, weekly

* See Medicine and Pathology volume, Chapter 9, in this Series.

notifications climbing steadily throughout the quarter from less than 20 cases per week to 148 cases in the last week in September. The following is quoted from the Quarterly Report of D.D.M.S. Canadian I Corps:

'The increased incidence was first noted in Canadian 5th Armd. Division, in which for the first six weeks of the quarter 190 cases occurred as compared with only 114 cases for the rest of the Corps. In the middle of August there began a gradual rise in Canadian 1st Division, reaching the peak of 54 cases in the week ending September 16. But this has at no time kept pace with the incidence in Canadian 5th Armd. Division. Numerous investigations have been carried out in an attempt to ascertain some common factor in these cases which would explain its epidemiology, but nothing significant has been learned. The incidence has at all times been widespread throughout the divisions, cases occurring in at least thirty-five different units each week. While certain units showed higher rates than others during brief periods, these were more or less equalised in subsequent weeks. It was not possible to prove secondary cases as a result of contact. Neither has there been any satisfactory explanation for the fact that the incidence among Corps troops has not been appreciably higher than the average for the year. Proportionate rates among officers have been slightly higher than that for other ranks.'

During the three weeks in September in which New Zealand 2nd Division was under command the average weekly incidence was 117 cases—a rate of 6 per 1,000.

The incidence continued with little change until the last week in November, after which there was a rapid fall. The heaviest incidence occurred among Canadian and New Zealand troops.

TABLE 59
New Zealand 2nd Division
Infective Hepatitis

	1941	1942	1943	1944
January .	20	52	85	163
February .	15	16	37	147
March .	—	3	23	89
April .	4	6	14	70
May .	19	17	18	41
June .	45	8	30	54
July .	84	13	36	141
August .	56	47	35	279
September .	33	374	52	623
October .	55	952	40	587
November .	48	695	62	474
December .	38	341	144	206
Totals .	417	2,524	576	2,874

An operational research unit from the Directorate of Medical Research was now with Eighth Army investigating the cause and mode of spread of this disease.

A comparison between the two first quarters, 1944 and 1945, was as encouraging in respect of infective hepatitis as in respect of venereal disease it was depressing. 1944 opened with an incidence of 1.55/1,000/week which fell gradually to 0.3/1,000/week at the end of the first quarter. In 1945 the incidence began at 0.45/1,000/week and fell to 0.19.

The gradual decline in incidence which occurred during January–March 1945 continued until it reached the low level of 0.06 per 1,000 for the week ending May 5.

VENEREAL DISEASE *

On September 18 it became apparent that the incidence of venereal disease was rising in Eighth Army. Many men in 5th Division became infected in Francavilla and 161 cases were reported during the week ending October 9. Later, when Canadian 1st Division and V Corps troops had passed through Taranto and Bari, the weekly figure reached its peak of 226 cases on October 23. A total of 953 cases were admitted during this period, an average of 73 per week. The ratio of syphilis to the rest was approximately 1:9.

Until the arrival of 5 V.D.T.C. in Italy at the end of September, the treatment of venereal disease, and particularly of syphilis, was unsatisfactory, chiefly because facilities for diagnosis did not exist in the forward areas.

H.Q., V.D.T.C. was set up in Bari, and a section consisting of one graded specialist, one sergeant S.T.O. and four other ranks, opened an advanced treatment centre at Foggia. On the arrival of the remainder of the V.D.T.C. from Sicily accommodation at Foggia was increased to 150 stretchers and a trainee officer of 14 Fd. Amb. was attached. Additional equipment and microscopes were acquired and eventually the centre at Foggia was capable of dealing with up to 200 cases. The average stay in the centre for fresh gonorrhoea cases was gradually reduced to a period of from six to eight days. The short concentrated treatment was giving good results, but it was not yet known what the effect on the relapse rate would be. At one time considerable numbers of sulpha-resistant cases were encountered owing to previous incomplete treatment in the forward area. Difficulties experienced by medical officers attempting to carry out treatment in units, or even in field ambulances, were sometimes great owing to constant movement of units and formations and to the necessity for keeping medical units

* See Medicine and Pathology volume, Chapter 5, in this Series.

empty for the reception of battle casualties. Instructions were therefore issued that cases would not be held and treated in forward areas unless there was a reasonable hope of retaining the patient until the treatment was completed.

Syphilis cases were evacuated direct to the V.D.T.C. where they were retained until no longer infectious. The average stay in the centre for syphilis cases was twenty days.

At the end of November a consulting venereologist was appointed to C.M.F.

	<i>Rate per 1,000 per annum</i>			
	<i>Eighth Army</i>	<i>X Corps</i>	<i>1 District</i>	<i>2 District</i>
September	7.5	18.1	—	—
October	49.9	59.8	58.0	42.2
November	28.5	98.9	96.8	133.8

In December a conference was held by D.M.S. A.F.H.Q. with the D.D.H. and the advisers in venereology A.F.H.Q., and the following recommendations were made for the prevention of V.D. in C.M.F. :

1. The recommendations, which are unanimous, should be accepted as guiding principles.
2. The Medical Services act as advisers on matters affecting the health of the troops, but the Adjutant-General issues and enforces appropriate orders. A high incidence of V.D. indicates that clear instructions have not been given or orders have not been obeyed. A high rate of V.D. in any formation or unit indicates failure on the part of command in taking effective action to protect the health of the troops.
3. Training. A high rate indicates faulty training in military hygiene. It is recommended that :
 - (a) The attention of the Director of Military Training and the Director of Hygiene be drawn to the ignorance of all ranks on the prevalence of V.D.
 - (b) Training facilities to be provided by lectures and film displays.
4. Leadership. Clear orders must be obeyed and enforced; local variations must not be allowed. It should clearly be understood by every man that it is a disgraceful act to endanger his health while on active service by consorting with a loose woman. A high code of personal morality must be followed and all men must be taught that abstinence from sexual intercourse is not detrimental to health or vigour. Association with public prostitutes is conduct unbecoming to an officer and a gentleman.
5. Discipline. An army of occupation is judged by its troops' conduct, and we have noted with regret that discipline is lax; slovenly dress, failure to salute officers, brawling, excessive drinking and often an insulting attitude to respectable women. Troops with bad discipline are more prone to expose themselves to V.D. and ignore all advice and precautions.

6. Brothels. To be placed out-of-bounds (off-limits). This is the accepted policy of the Army Council and the Government of the U.S.A. This policy is based on experience and has the fullest backing of the Army Medical Services. Wherever this has been applied energetically there has been a diminution in V.D.
7. Suppression of clandestine prostitutes and 'pimping'. This may be carried out by assistance from the military police and the local civil administration. In occupied territories A.M.G.O.T. must ensure the co-operation of police and medical services. Offenders must if necessary be severely punished. Troops must be educated to withstand the overtures of all forms of soliciting and to co-operate with the authorities in its suppression. Throughout Italy this is a matter of the greatest urgency.
8. Enforcement of efficient treatment of women. These measures must be enforced by A.M.G.O.T. There is such a vast number of infected women that no rapid improvement can be expected.
9. Prophylaxis of V.D. This must be organised as an essential service for an army overseas. We recommend it be organised on the basis of (a) area and (b) unit responsibility. (a) provision of an adequate number of prophylactic centres, properly sited, staffed and equipped and open day and night. (Note: in Algiers over 17,000 prophylactic treatments have been given with only 11 known cases of V.D. There were two main centres, each treating 400 cases a day, and the rate dropped from about 40 to 23/1,000/annum.) (b) an E.T. (early treatment) room should always be provided when men are likely to have access to women, with arrangements to issue E.T. packets and condoms. Health inspections of all men must be carried out effectively and conducted until the unit is free from V.D., lice or scabies. Concealment of V.D. must be punished (K.R. 555).
10. Education. We strongly advise an intensive educational campaign against V.D. We are impressed by the almost universal ignorance of the elementary facts of personal and sex hygiene and strongly advocate education by experts, using posters, films and articles in the press. Training should begin in the Home depots. Lectures should be by experts; talks by inexperienced and ill-informed officers are likely to be harmful.
11. Welfare. The provision of welfare services and good amenities are valuable aids to the preservation of health and morals. These should be produced quickly and on a generous scale. The situation of rest centres should be as remote as possible from unhygienic areas and leave to such towns as Naples should be restricted if not discontinued.
12. Influence of Religious Organisations. It is suggested that valuable support may be rendered by leaders of religious organisations, by guidance on standards of conduct. We suggest that the Chaplain General should give his chaplains a clear lead regarding their approach to V.D. It is considered that medical details should be left to the province of the medical officer.

13. **Social and Economic Conditions.** The rapid amelioration of social and economic conditions, with relief of starvation and hardship, in occupied countries is important. At present (1943) many women in Italy are driven to prostitution in order to support themselves and their families. This problem is not peculiar to the present areas but will be met with in every enemy country occupied, with a resultant increase in V.D. Adequate preparations must be made in advance.

Official notice was taken of these recommendations and in December 1943 a memorandum was sent out to each major command in the theatre drawing attention to the serious increase in the incidence of venereal disease.

The following are sample extracts from the memorandum: 'This rate is beyond all reasonable expectation, exceeding battle casualty rates and equalling the sick rate.' 'This rate is too high in every major command and must be reduced.' 'Positive action must be taken towards this end; full support must be given to the efforts of the Red Cross and Special Service Division and E.N.S.A. In addition, commanders must sponsor similar activities to forestall the boredom and low morale, evidenced by mounting V.D. rates.' This was sent out by command of General Eisenhower.

The following paragraphs appeared in D.M.S. A.F.H.Q. Health Notes:

'Venereal Disease. Since the occupation of Sicily and Italy the venereal rate has rocketed more than twenty times the rate in the U.K. In the month of December 1943 nearly 4,000 cases were admitted to hospital with V.D. The average time spent in hospital was twenty days, and therefore in this case equivalent to the loss of four infantry battalions for three weeks. In Italy the rate of sickness from V.D. is greater than the battle casualty rate. . . . Syphilis and soft sore may leave permanent effects, damaging not only the health of the soldier but also that of his wife and children. What happens to the individual is well illustrated in the film "Sex Hygiene".'

'In Italy, owing to the economic situation (now being improved), prostitutes abound. Nearly all these women are suffering from a very virulent form of infection. The risk of infection to men who have one of these women is 80 per cent.

'Uncured syphilis means insanity, heart disease, palsy, blindness, defective children, infected wives, and results in inability to earn a living and enjoy life. Many cases die young. Uncured gonorrhoea leads to damage and deformity of sex organs and sterility.

'Prevention. Knowing these facts, only fools take the risk. Continence is a duty to oneself, to one's family and one's comrades. A man can keep fit without a woman. A wise man may become a fool after drink. If you decide to be a fool, then:

- (1) Use a condom and E.T. packet.

- (2) Go immediately to a P.A. centre after intercourse.
 - (3) Report sick at once if you develop symptoms. Concealment of the disease is a crime and chargeable under A.A. Sec. 11. It is a crime because concealment delays treatment, means a longer time spent in hospital, possibly prevents a complete cure and is a waste of manpower and hospital space.
 - (4) Continue treatment until the M.O. says you are cured.
 - (5) By being a fool you will also have to pay hospital stoppages, lose your war-time and special proficiency pay, your acting rank if you are a N.C.O., and you may lose your trade rating if a tradesman. A further effect of the above is that your family or dependents will get a lower allotment from your pay.
- V.D. is a disease which is 100 per cent. preventable. Don't get it!

In December 1943 there were 331 reported cases as compared with 321 in November. During January 1944 there were 63, 59, 72 and 79 cases respectively for the successive weeks. In February the weekly cases numbered 49, 11, 38 and 52; in March 67, 23, 70, 46 and 86. 1,046 cases were admitted during the seventeen and a half weeks of this period, an average of 61·5 per week.

The ratio of syphilis to the rest was 1:9. The policy of treating uncomplicated cases in forward medical units was continued, the others being evacuated to 5 V.D.T.C. in Corps Areas. 48 I.S.S. was attached to 5 V.D.T.C. for the accommodation of Indian personnel. Officers and West Africans were evacuated to Bari.

During April-June, 1944, the incidence of V.D. was higher than at any previous time in the history of Eighth Army. Total cases were 3,183, giving an average per thousand per week of 0·97.

The main sources of infection were Naples and Salerno, Bari and Campobasso. The first three were leave centres and the last a transit and staging area.

A complete C.C.S., with an Indian staging section, was set aside as a V.D. diagnosis and treatment centre to cope with this problem. This worked admirably, as of the 2,181 cases admitted only 306 were evacuated out of the Army area. Many of these evacuations were Mauritian and Cypriots, among whom the incidence of V.D. was notoriously high.

During mobile phases the C.C.S. functioned in two parts. One, forward, received, diagnosed and treated patients, while the rearward section ceased admissions and in a few days was prepared to leap-frog the forward section. In this way V.D. cases were all treated as far forward as possible; evacuation of some cases was actually forward.

Experimental quantities of penicillin were obtained and were used by the venereologist in collaboration with the Consulting Venereologist A.F.H.Q. 216 cases were treated. These were all cases of selected key

personnel who were not clearing up with sulphonamides. Only 8 failures of treatment were reported.

The policy of treating cases in unit lines was discontinued as hospitalisation of patients was possible in the forward area. Standardisation of diagnosis and treatment was thus obtained and close scientific and disciplinary control of cases was possible.

Indian patients were treated in the Indian staging section attached to the V.D.T.C. Canadian, New Zealand and Polish patients were treated according to arrangements made by their own formations.

A system was introduced whereby a 'vice squad' of the C.M.P. detained all known prostitutes and those accused by patients.

The incidence of this disease reached a peak in the week ending July 1 (1·49/1,000/week), from which it declined to a ratio of 0·48/1,000/week early in September, after which it showed a rising tendency. The average ratio for the quarter was 0·78 per 1,000 per week as compared with 0·97 for the previous quarter.

12 C.C.S., the main V.D. diagnosis and treatment centre for Eighth Army, moved from Rome (Hy. Sec.) and Orvieto (Lt. Sec.) to Castiglione del Lago towards the end of July, and at the end of August it moved across to the east coast when the grouping for the Gothic Line assault was effected. While at Castiglione del Lago a Canadian V.D.T.T. was temporarily attached. At the end of August the formation of three V.D. treatment teams was commenced, 13 and 14 at 12 C.C.S. and 12 under V Corps. Formations had been practically completed by the end of September.

Treatment with penicillin was now standard, and adequate supplies were forthcoming. O.C. 12 C.C.S. makes the following comments:

'Treatment of syphilis and gonorrhoea with penicillin commenced in earnest at the beginning of September and a most dramatic change has come over the whole picture. Bedstates have fallen and sore cases predominate. The amounts of penicillin used are enormous, and when considering its previous scarcity, almost shocking. But the results achieved in restoring man-power are immense. So far there have been no relapses in gonorrhoea cases treated with 100,000 units. The treatment of syphilis is revolutionary.'

From its first peak at the end of June, the incidence of venereal disease in Eighth Army declined during July and August but rose steadily during the last four months of the year. The average number of notifications weekly was:

September (5 weeks)	.	.	190
October (4 weeks)	.	.	245
November (4 weeks)	.	.	281
December (5 weeks)	.	.	303

Most cases were infected while on leave, notably in Rome.

Canadian I Corps instituted an interesting experiment in an attempt to improve their V.D. figures. Specially selected medical officers were appointed as 'V.D. Control Officers', and N.C.O. volunteers from field ambulances were given courses of training to assist them. Their duty was to visit all units in the formation, paying particular attention to units showing a high incidence of V.D., to inspect E.T. rooms and P.A.Cs. and to give talks to small groups of officers and other ranks. During November, while the Canadian Corps was out of the line, a V.D. propaganda week was organised. D.D.M.S. Canadian I Corps reports :

'A central building was taken over, and in the main room were displayed specially prepared charts, posters and diagrams showing the comparative incidence in various groups; a question booth, well supplied with pamphlets, was set up; educational films were shown in another room several times a day. A model early treatment centre was demonstrated and a clinic, in charge of a medical officer, was operated where volunteer blood samples could be taken. Although attendance was voluntary the general interest created brought in over 900 all ranks each day and more than 200 volunteered for blood samples daily.'

With regard to treatment, the following figures given by O.C. 12 V.D.T.C. may be of interest :

Average Number of Days in Hospital (Gonorrhoea—fresh)	
During the quarter April—June 1944	19.1
During month of June (penicillin used for sulpharesistant cases only)	13.22
During the quarter October—December (penicillin used for all cases of gonorrhoea—fresh)	3.48

The average rate per thousand per week during the period October—December was 0.93.

P.A.Cs. were in operation in all towns. The number of treatments given was very small indeed compared with the number of condoms and E.T. packets issued, but there was little evidence that any considerable proportion of infections were acquired in the Army area. As already mentioned, the majority dated from leave, especially at Rome. It would appear from reports of interrogation of patients that the treatment given at P.A.Cs. in Rome may not have been very reliable.

D.D.M.S. Eighth Army records that :

'The solution of the V.D. problem in this theatre will not be found in the provision of better P.A. Centres, in propaganda or education, or by suppressing or controlling prostitution. During the quarter under review 3,580 cases were notified among troops in Eighth Army, equivalent to an annual ratio of 48 per 1,000. " The British Army in France had, in 1914—18, 26.2 cases per 1,000 per annum and, in 1939—40,

28·2 per 1,000 per annum" (quoted from Harrison, *British Journal of V.D.*, 1941, quoted in the *Bulletin of Hygiene*, March 1942). The only measure likely to produce any substantial lowering of V.D. rate in an expeditionary force is leave to the U.K. at reasonable intervals.

'The majority of cases of V.D., and the majority of men making use of P.A. Centres, are individuals who have served overseas for two years or more. The well known relationship between distance from home and V.D. incidence (which certainly obtains in the case of U.K. troops) is perhaps reflected in the higher incidence among Canadian troops, but the chief factor is individual length of service abroad. The newcomer to any formation which has been serving overseas for a considerable length of time observes a subtle peculiarity of psychology which is difficult to define, but which is reflected in the case of officers in a narrowing of intellectual activity and in the type of conversation and humour which finds favour. Among other ranks, with their more limited resources for sublimation through social and intellectual interests, the effect of long continued service overseas is seen in an increase in the V.D. rate and, perhaps, in the type of commerce from which infection results. The sense of guilt lessens and the proportion of cases resulting from the more sordid forms of prostitution seems to increase.

'If it were possible to arrange for home leave during the third year of overseas service, the V.D. problem could be reduced by at least a third. It is of interest to note that the incidence of V.D. in the Desert Air Force personnel in this area during the fourth quarter of 1944 was appreciably lower than that for Eighth Army, i.e. equivalent to 35 per 1,000 per annum as against 48 per 1,000 for Eighth Army (figures supplied by P.M.O., D.A.F.). When the fact is taken into account that throughout this period a large proportion of Eighth Army was in the line where the opportunities for infection are practically nil, the difference assumes a larger significance.'

During January–March 1945, V.D. was the largest cause of sick wastage. A comparison between the curves of incidence for this quarter and for the first quarter of 1944 is interesting. The incidence fluctuated between 0·06/1,000/week and 0·65/1,000/week for the former, while for the latter the lowest incidence was 0·8 and the highest 1·38. No quarter in 1944 showed so bad a record as this first quarter of 1945. In only thirteen weeks in the whole of 1944, but in eleven out of the first thirteen weeks of 1945, was the incidence higher than 1/1,000/week.

Battle casualties in the first quarter of 1944 were low, so the difference cannot be attributed to greater activity at that time and the opportunities for infection were certainly not less. The most significant difference is the fact that another year had been added to the length of time overseas.

From the beginning of the year a comparative weekly health state of formations was circulated, though it was recognised that the figures given were not strictly comparable. Figures for V.D. showed that Canadians and Poles had the highest incidence but that among United Kingdom formations whichever was out of the line had the largest number of cases, as one would expect. Most infections were contracted while on leave. In this connexion D.D.M.S. X Corps records that :

'The analysis of the sources of infection of all cases which pass through Corps medical units invariably tells the same tale; 80-95 per cent. of all cases were infected in Rome. A Corps Order was published enforcing the use of a P.A. Centre after each exposure to infection. A man who contracted V.D. subsequent to exposure in Rome and who failed to produce evidence that he had attended a P.A. Centre was punishable under the Army Act. While these and other methods—e.g. propaganda, films, lectures—may have produced some decrease, it was only when the rest centre, which was located in one of the main streets of Rome, closed that the number of cases started to decrease. Eighth Army Rest Centre, to which X Corps now send personnel for leave, is located very much further out of Rome and is not producing cases to the same degree. The cases contracted in the Corps area are negligible and the infecting women are invariably apprehended and submitted for treatment.'

The propaganda campaign carried out by the Canadian Corps was not followed by an improvement in their figures while this formation remained with Eighth Army.

Venereal disease was the only infectious condition which gave rise to any serious concern during the period May-June 1945, and its depredations were largely confined to a single formation.

The rate fell during the battle, as might have been expected, reaching the low figure of 0.47/1,000/week during the first week of May. It very quickly swung back to about 1/1,000/week, where it continued to the end of June.

The contribution of New Zealand 2nd Division to this figure was out of all proportion to its numbers. The week ending June 9 shows this best; in that week N.Z. 2nd Division, representing about 6.5 per cent. of the whole of the total Army strength, produced no less than 48 per cent. out of a total of 215 cases. This represented a rate of 5.09/1,000/week among the New Zealanders, the rate for the remainder of Eighth Army being 0.59/1,000/week.

A.D.H. Eighth Army makes the following comments :

'The causes of this abnormal incidence among New Zealanders are interesting. While the New Zealand figures were soaring the incidence in U.K. formations was tending to diminish, so the increase cannot be

attributed solely to the end of hostilities. Practically all infections were acquired in Trieste, which was jointly occupied by Marshal Tito's troops and the New Zealanders. Fear of the Yugoslavs on the part of the women of Trieste may have prompted them to seek the company of the New Zealand troops for protection, if for no other reason; it was reported that families of all classes were prepared to offer every kind of inducement in order to get a 'British' soldier to sleep in the house and protect them from looters. Moreover, the civil control of prostitution had been disrupted and this may have been a minor factor in producing a high incidence. The chief cause, however, may be adduced from the fact that in practically every case V.D. patients among the New Zealanders admitted that they had taken no precautions of any kind. It is reasonable to infer from this attitude to prophylaxis that there was probably a general increase in promiscuity as well.

'A.D.M.S. N.Z. 2nd Division was convinced that this disquieting state of affairs was due in large measure to ill-considered propoganda in the popular press about penicillin. He believed that many soldiers had concluded from what they had heard and read that the cure for V.D. by means of penicillin was so simple that they need no longer have any fear of the consequences of promiscuity. It is interesting to speculate on the reasons why the same cause has not, apparently, led to a similar effect in the case of U.K. troops.'

TABLE 60

*New Zealand 2nd Division. 102 V.D.T.C.
January-June 1945*

	January	February	March	April	May	June	Totals
Syphilis .	7	2	3	—	—	2	14
Gonorrhoea .	21	32	22	28	131	183	417
Soft Sore .	8	4	5	16	49	61	143
Urethritis .	16	11	26	29	50	77	209
Penile Sore .	5	6	6	2	6	7	32
Balanitis .	7	2	3	1	3	6	22
Prostatitis .	2	—	3	4	1	1	11
Others .	2	4	3	—	4	4	17
Totals .	68	61	71	80	244	341	865

In Trieste there were 14 licensed brothels and 200 licensed street walkers.

Although the attendance at P.A.Cs. in Venice was relatively large, little V.D. appears to have been acquired there. Despite the ban on fraternisation in Austria, the V.D. rate during June was higher among British troops there than among British troops elsewhere—0·57/1,000/week as compared with 0·41-0·55/1,000/week outside Austria.

ENTERIC *

The entire absence of enteric in the initial stages of the invasion was notable, and this in spite of the prevalence of this disease in the civilian population.

A total of 32 cases of enteric fever was notified during December 1943–March 1944. The majority of cases occurred in January, when 14 were notified, of which 5 were probably infected in the Sangro valley. One patient died. According to records available, none of these cases was a hundred per cent. protected with T.A.B. Investigations failed to reveal any definite cause for these cases, but the absence of an epidemic and their scattered nature suggested that the source was probably unauthorised food supplies. All medical officers were informed and instructions given through both staff and medical channels to strengthen the preventive measures in respect of water and food supplies, inoculation states and general sanitation.

Enteric, though frequently sporadic among the civilian population, was of no importance in the Army during the rest of the campaign.

DYSENTERY †

During April–June 1944 the ratio per 1,000 per annum was 8·84. 607 cases were admitted to hospital.

Its incidence rose to 0·67/1,000/week during the week ending July 22, after which time it declined throughout the rest of the year.

Compared with that for 1944, or for any other year in the history of Eighth Army, the incidence during 1945 was very satisfactory. There was an abrupt increase in the second week in May, but the rate then recorded (0·29/1,000/week) was largely due to Polish II Corps (59 out of a total of 64 cases). The Poles left Eighth Army in May and the incidence immediately fell to less than 0·1/1,000/week and remained at a low level afterwards.

This satisfactory state of affairs was due to the remarkable paucity of flies, which in turn may be attributed to the nature of the area with its widely scattered prosperous farms, good general sanitation and clean-living people. Efficient unit sanitation and, to a minor degree, the use of D.D.T. must also have played a part.

SANDFLY FEVER ‡

There was a brisk outbreak in troops of XIII Corps after the occupation of Pola, due to extensive breeding in the rubble of bombed buildings which would have taken a long time to clear away. The rubble was sprayed with D.D.T. with good effect. The disease was mild and the

* See Medicine and Pathology volume, Chapter 1, in this Series.

† See Medicine and Pathology volume, Chapters 1 and 7, in this Series.

‡ See Medicine and Pathology volume, Chapter 7, in this Series.

incidence fell rapidly. During the week ending June 23 there were 7 cases among R.N. personnel. The following week 102 cases were reported, 44 of them among R.N. personnel, the remainder among British troops.

SCABIES *

Scabies first began to increase in the last week of September 1944 (from the low level of 0.03/1,000/week in the week ending September 23) and rose steadily thereafter. In the last week of the year the incidence was 0.61 per 1,000 per annum. The rising incidence noted towards the end of 1944 continued to the end of January 1945—1.29/1,000/week—when it dropped again, the quarter ending with a rate of 0.63 per 1,000 per annum.

Canadian, Italian, Polish and British units all produced unusual numbers at one time or another during the period and there appears to have been a general increase in this disease. During the final offensive and the occupation, while fluctuating slightly, the incidence of scabies showed a tendency to fall.

DIPHTHERIA †

Sporadic cases were constantly being notified in the early months of 1944 but no local epidemic occurred. In December 1943 there were 40 cases notified—the unit with the highest number being the 6th R.W.K. which had 8 cases, making a total of 12 in this battalion since November 15. In January 75 cases occurred, in February 66 and in March 37.

The policy of immunising all medical and nursing personnel liable to come into close contact with diphtheria could not be implemented owing to the shortage of T.A.F. The small amount held in 7 Adv. Depot Med. Stores was evenly distributed to all medical units. This amount was sufficient to immunise 33 persons in each C.C.S. and field ambulance and 25 in each F.D.S.

428 cases of diphtheria were notified during the period October–December 1944, of which nearly 40 per cent. occurred among the Canadians. In the Canadian Corps the disease produced 170 cases between the middle of October and the end of the year, scattered through seventy different units and in no unit assuming epidemic proportions. An immunisation programme was begun, using formol toxoid from Canadian sources.

TYPHUS AND ANTI-TYPHUS MEASURES ‡

The principal steps taken to guard against typhus were :

* See *Medicine and Pathology* volume, Chapter 16, in this Series.
 † See *Medicine and Pathology* volume, Chapter 20, in this Series.
 ‡ See *Medicine and Pathology* volume, Chapter 8, in this Series.

- (a) Typhus inoculation of all ranks; this approached the 100 per cent. mark.
- (b) Training of malaria control units as anti-typhus teams. All teams received adequate training and were employed as disinfection and bathing teams.
- (c) Full instructions regarding the measures to be adopted in units by special teams and by hygiene sections were published in A.R.Os. and circulated to administrative medical officers.
- (d) Propaganda in the form of posters, notice board and articles in '*Eighth Army News*'.

Typhus was prevalent in Naples, where as many as twenty fresh cases were reported daily. The city was placed out of bounds to all ranks except those on duty or in recognised leave parties.

Hygiene sections and anti-typhus teams had not yet received complete anti-typhus equipment. O.S. were doing all they could to procure this equipment, including additional disinfestors. In the meantime field hygiene section workshops were making as many M.E.S.H. type disinfestors as possible and these were being distributed to transit camps, P.o.W. camps, refugee camps and units.

Typhus of the louse-borne variety was not reported in Eighth Army and the incidence of pediculosis was low. No confirmed cases of typhus fever among either the civilian population or military personnel was reported in Army area during the winter months of 1943-44.

Almost all troops were inoculated against typhus and many had a 'booster' dose. Owing to the constant changing of units and personnel it was not possible to give an accurate figure for the inoculation state; it was, however, over 85 per cent. Bathing facilities were ample, mobile bath units being supplemented by A.M.C.U.s. working as bath units. Each A.M.C.U. was trained and equipped to scale for anti-typhus measures and each was supplied with a S.J. Bath Set especially constructed and provided by the R.Es. In addition, most units improvised their own showers, assisted by the nearest field hygiene section. Five captured Italian bath sets were called forward from North Africa but had not been delivered by the end of the period. Medical units were issued with field portable disinfestors and, in addition, improvised Serbian barrels and M.E.S.H. disinfestors were provided by units and field hygiene sections. Sets of anti-typhus clothing were issued to the following scale :

C.C.S.	. . . . .	12 sets
Field Ambulance	. . . . .	6
Field Hygiene Section	. . . . .	12
A.M.C.U.	. . . . .	9
M.B.U.	. . . . .	20

As the control of typhus is essentially dependent upon preventive measures being put into effect before the occurrence of an outbreak, the following general measures were taken or intensified as far as possible :

- (a) Avoidance of overcrowding, the aim being to provide each soldier with 45 square feet of floor space. This was possible in a few cases only owing to the extreme shortage of suitable accommodation.
- (b) Adequate ventilation of quarters and tents. This was universally satisfactory, thanks to broken windows and other damage.
- (c) Weekly skin and clothing inspections under unit arrangements.
- (d) Medical inspection monthly and on individual moves.
- (e) A hot bath weekly. Bath register kept.
- (f) Underclothes changed and washed at least once a week.
- (g) Hygiene supervision of laundries and barbers' shops.
- (h) Non-communal use of blankets, towels, etc.
- (i) Education of the troops by posters, lectures, films and *Eighth Army News* publications on :
 - The louse and its habits.
 - Methods of combating lousiness.
 - Individual methods of delousing.
- (j) General use of A.L. 63.
- (k) Disinfestation of refugees, their clothing and blankets at refugee camps.
- (l) Inoculation of P.o.W. and civilian labour gangs with Durand and Giraud vaccine.
- (m) Issue of pamphlet '*Control of Epidemic Typhus. 1942*' to medical officers.
- (n) Liaison with A.M.G. health authorities, who were :
 - (i) educating the civilian population by means of posters, etc. ;
 - (ii) providing public baths ;
 - (iii) circulating Italian medical officers with instructions to be on the alert for signs of infestation and typhus cases ;
 - (iv) arranging inoculation of Italian medical and nursing personnel with anti-typhus vaccine.

X CORPS. SEPTEMBER 1943-MARCH 1944

During the period October-November 1943 the most prevalent diseases encountered were venereal, infective hepatitis, malaria, diphtheria and immersion foot.

The incidence of venereal disease in the Corps during the months of October and November 1943 reached alarming proportions, rising from 0.4 per 1,000 for the week ending October 2 to a maximum of 2.1 per 1,000 for the week ending November 6, with a gradual decline to 1.57 per 1,000 for the week ending November 27. Every precaution was taken by 'M' Branch. Ample supplies of condoms and E.T. packages were made available in readily accessible places, P.A. Centres were

established in towns and unit lines and propaganda and lectures were dispensed. Ideal conditions for the dissemination of venereal disease existed, however. Outside the large towns amenities and relaxations were few or non-existent; there was hardly any beer and no non-alcoholic drinks at all; reading material was very restricted and hard to obtain.

Simple gonorrhoea was treated in unit lines or in advanced medical formations. All other forms were admitted to the nearest V.D.T.C. or V.D. wing of a general hospital. The number of cases of V.D. from October 3 to November 27 was 837.

From October 3 to November 27, 1943, 1,071 cases of infective hepatitis were notified. These were of varying severity and occurred in widely spread units and formations on the Corps axis. No common aetiological findings were apparent. The highest incidence was returned by 46th Division. This might be explained by the fact that most of 56th Division and Corps troops had been mounted from the Middle East where this disease had been prevalent during the previous four years. It would seem to be possible that through constant association with these conditions 56th Division and Corps troops had been 'salted' by previous minor infections.

385 cases of B.T., 185 of M.T., 1,298 of clinical malaria, one of Q. and 95 relapses of all types were reported for the period October 3–November 27 inclusive. A decline in the ratio per 1,000 from 14 for the week ending October 2 to 0.95 for the week ending November 27 occurred. The area in which X Corps was called upon to operate was designated as being highly malarious. Only restricted anti-malaria measures could be taken because of the limited resources that were available. In the early stages of the Salerno landing malaria cases had to be evacuated to the general hospitals in Southern Italy, Sicily and North Africa.

Cases of diphtheria were continually being notified but no local epidemic occurred. There was a remarkable difference in the incidence of this disease in the American troops of U.S. Fifth Army and in the British troops of the British Increment. Between October 9 and November 27 whereas there were only 10 cases among the Americans there were 168 among the British.

In November about 30 cases of immersion foot were reported among forward troops. The medical history was that the men had spent three to six days in an exposed position on the mountain side under enemy observation, unable to light a fire or to take off their boots and all the time subjected to torrential rain. All the cases were mild, requiring hospitalisation for about six weeks.

During the period December 1943–March 1944 the most prevalent diseases in X Corps were venereal disease, infective hepatitis, malaria and trench or immersion foot.

The figures of notified cases of venereal disease were :

	Average Strength	Gonorrhoea	Syphilis	Chancroid	Other Forms
December . . .	64,703	177	15	1	367
January . . .	78,696	133	8	1	386
February . . .	75,507	58	5	1	293
March . . .	57,230	30	1	1	81

Notifications of cases of the other prevalent diseases during this period were as follows :

	Infective Hepatitis	Trench Foot	Malaria
December . . .	576	50	—
January . . .	550	22	85
February . . .	263	48	106
March . . .	86	61	150

The majority of the malaria cases were relapses following the cessation of the administration of mepacrine.

Most of the trench foot cases were mild. The cause was exposure in the mountains for from two to eight days in continuous rain and with no opportunity for foot care. The provision of extra socks and the enforcement of rigid 'foot' discipline held the disease in check.

(ii)

Conditions Affecting the Health of the Troops

SANITARY CONDITIONS

EIGHTH ARMY

On the whole the standard of sanitation was good, though naturally it varied from unit to unit and with nationality and strict supervision was necessary especially of refuse disposal. Refuse in camps was burnt or buried. Excellent work was done by the hygiene sections in dealing with the appalling conditions encountered in bombed towns and villages.

Except in these little difficulty was experienced. Hygiene section personnel were well trained and a complete drill was laid down for dealing with drainage and scavenging problems as they arose. Water points were tested and marked and refuse disposal arranged. Street

cleaning was organised with civilian labour and supervised by field hygiene section personnel.

Whenever possible deep trench latrines were used, especially for static or semi-static units in the field and even for divisional unit 'B' echelons, but some static units preferred buckets and the Otway pit disposal system. Mobile formations and units used deep bores or shallow trench latrines thus obviating the necessity, where transportation was limited, for carrying large numbers of 4 and 6 seater super-structures at every move. Troops in F.D.Ls. used shallow trenches or the 'cat' method. Supplies of latrine tops, urinals, disinfectants and the like were carried by hygiene sections and were put into use immediately around docks, billets, etc.

Bars, cafés and barbers' shops were inspected and notices erected placing them either in or out of bounds.

Contact was made with municipal officials and civilian hospitals were inspected in conjunction with an A.M.G. representative.

Very few units encountered a piped water supply. Most formations were supplied by water-trucks and trailers, either issued or improvised. Thus, with only limited supplies available, very little water was wasted and disposal of sullage water offered little or no problem. Swill and cookhouse leavings were appreciated by the local inhabitants.

During April-June 1944 a general improvement in civilian sanitary arrangements was noted the further north the Army proceeded.

Disposal of refuse and anti-fly measures generally showed an improvement as the summer advanced and the fly menace never became formidable. In September, during periods of heavy fighting, decomposed corpses which could not be buried for several days presented a problem which was temporarily solved by spraying with tar oil, a duty which was undertaken by field hygiene section personnel who also supervised burial parties as soon as these could be obtained.

Each town, as it was entered in the course of the advance during October-December 1944, required a considerable general clean-up, but owing to the absence of the majority of the inhabitants, conditions were not usually bad from the sanitary point of view.

Flies continued to be troublesome in some areas until the end of October.

Sewage disposal systems existed in all the small towns but were very primitive, crude sewage being discharged into any convenient stream or canal. In some places the water supply was so poor that a special sluice was used to flush out the sewers from time to time. As would be expected in flat country, a high proportion of houses were on the cesspit system.

In peace-time the towns and villages of this part of Italy must have presented a standard of sanitation which would have compared very

favourably with that of places of a similar size in England. The public buildings were imposing and soundly built; dwelling houses were generally of a high standard and contained such amenities as water closets, baths, central heating and electric light, and in the newer suburbs the streets were wide and every house had its own garden.

As the Army remained static throughout the period January–March 1945 it was possible to achieve a high standard of cleanliness in occupied towns and villages.

Two Italian Gruppi, the Cremona and the Friuli, were under command during the greater part of the quarter and another, the Folgore, for a shorter period. Sanitary conditions among these troops were appalling. When they first came under command, no unit used latrines and billeting areas were indiscriminately fouled. R.E. structures, when provided, were misused and broken to pieces. The officers showed as little appreciation of the elements of sanitation as the men. The medical section of each group included a 'disinfection and anti-malaria platoon', some of the members of which had attended courses on hygiene; but as effective units they might as well not have existed. When they were employed at all it was on duties which had no relation to hygiene. Furthermore, in the Italian Army, rank counts for so much that it was difficult to see how an Italian hygiene officer, and much less a N.C.O., could function as a sanitary adviser, as it was not possible for him to advise a unit commander of higher rank than himself about difficulties in sanitation. The approach of the fly and mosquito season was, therefore, viewed with gloomy foreboding, especially as it was known that these Gruppi included a high proportion of gametocyte carriers as a legacy from Sardinia.

Intensive training and efforts at supervision provided some improvement. At the end of the quarter all hygiene personnel had received special courses of training and courses had been held for unit sanitary personnel. Most units had latrines of a satisfactory pattern, but the popularity for use of these structures was not as great as their interest as a novelty, and indiscriminate fouling was still a problem which had not been solved.

In Austria both the people and their dwellings looked much cleaner than they did in Italy. The public services of all towns and villages in Carinthia were excellent.

The countryside was fairly thinly populated and villas and farms were soundly built and usually had modern plumbing and sanitation. The discharge of sewage into the lakes was prohibited and most lakeside dwellings had cesspits which were cleared at regular intervals, the contents being disposed of on the land. Despite the enormous number of homeless people wandering in droves over the countryside in May, there was little obvious fouling, and fly breeding was conspicuous by

its absence; but the prevalence of bug infestation in camps and buildings in Austria was remarkable.

Venice, with its extensive waterways, was full of unusual sanitary problems. On the whole, the canals were surprisingly clean, there being more tidal current than would have been expected in the Adriatic, which helped to clear them. Refuse was collected by barge and dumped at sea. Towards the end of June refuse in the numerous side alleys was beginning to produce flies and the smaller canals were becoming odoriferous in the summer heat. The presence of enormous numbers of rats offered a very difficult problem, especially on the Lido. Before the war there had been very large numbers of cats in Venice, as individual owners had been made responsible for keeping their property free from rats after a plague scare some years before, but during the war the cats were slaughtered for food and the rat population increased enormously. Typhoid fever was endemic, about twenty cases occurring weekly all the year round.

Venezia Giulia was prosperous, not very thickly populated and fairly clean and the towns had good public services. In Trieste the sewers and water mains were severely damaged and repairs were delayed during the Yugoslav occupation. Typhoid fever was endemic in the city. In Pola the worst problem was that of dealing with extensive sandfly breeding in the rubble of bombed buildings.

The sanitation of British troops improved after the end of hostilities, though a few instances of fouling of the countryside by indiscriminate tips, etc., came to notice. During the advance hygiene sections supervising controlled tips generally managed to hand over to the incoming hygiene or sanitary sections or to A.M.G. The absence of any serious fly infestation and the low record of dysentery during June bore witness to the generally satisfactory state of affairs.

The worst problem in sanitation during this period concerned refugees and displaced persons. The conditions among some of the early conglomerations of people—one could not call them camps—where men, women and children of all ages and nationalities were grouped in the lowest stages of wretchedness and want, were indescribable. Conditions were bad enough in the field, but in buildings they became infinitely worse. Nearly all these people were lousy, starving, hopeless and exhausted and too ignorant and apathetic to use latrines properly in the few instances where they could be provided. Scattered cases of typhus, fortunately only a few, were found here and there and the first thought of everybody concerned was to carry out disinfestation. But in actual fact the greatest menace of this period was dysentery or enteric fever. By great good fortune, however, no large epidemic occurred. Up to the end of June there had been only one small outbreak of enteric fever which affected two camps.

WATER SUPPLIES

During the earlier phases of the invasion no difficulties were experienced with water supplies except for a temporary shortage in bombed towns due to damaged reservoirs and water mains.

Every effort was made to restore municipal supplies at the earliest possible moment and this was always a priority R.E. service. The policy was to super-chlorinate in the early stages whether or not the water was considered safe for drinking purposes. This was done because in most cases the supply was intermittent to start with and there was always the danger of local contamination from fractured drains. Subsequently normal amounts of chlorine were added according to the quality of water to be treated. An Eighth Army improvised chlorinator was installed if no Paterson or similar type of apparatus was available. These chlorinators were made by field hygiene sections from 40-gallon drums and worked on a flow and drip principle. They gave very good service when properly looked after, but large quantities of water-sterilising powder were required to deal with the water supply of large towns such as Taranto and Bari. They did, however, prove their worth.

Local supplies were usually from springs or wells, which were tested in the ordinary way before use and afterwards chlorinated. Organised water points were the rule, and there was consequently a tendency to use water carts as water tanks, the filtering apparatus being neglected. It was not, therefore, unusual to find water carts unserviceable after they had been on the road for a few months.

During April–June 1944 water supplies came more and more from R.E. 'Bulk' points. The use of the individual water container being very restricted, it was considered that a wide issue would have been a waste of material.

Investigations by field hygiene sections during July–September 1944 into the state of training of orderlies in charge of water vehicles drawing water supplies at water points disclosed that a high percentage were completely untrained. For example, 36 out of a series of 61 orderlies interrogated at water points stated that they had received no instruction in their duties. In view of the enormous amount of training which had been carried out, such a revelation was astonishing at this stage of the war. It would appear at first sight that trained orderlies did exist in units but were not being employed. It is probable, however, that many units had simply neglected to keep their quota of trained personnel up to strength. Conditions in the desert, where unit purification of water was rarely necessary on account of the efficiency with which bulk supplies were operated, probably had a bearing on this matter, but unit commanders and unit medical officers were obviously seriously to blame. There was evidence also that the equipment on water vehicles had suffered from neglect on a large scale.

The principal difficulty with regard to water supplies during the period was due to the quantity of silt, sometimes in colloidal suspension, in the river water after rain. To quote D.D.M.S. Canadian Corps: 'Streams at times became so filled with silt that the filters became clogged. This was overcome by digging large sump holes near the bank and allowing the water to seep through the natural sand and gravel filter. This method had now become routine, where necessary, and power-driven shovels had been made available for the purpose.'

As Eighth Army moved north municipal supplies were restored, in part at least, in most towns which had been occupied for any length of time, although the supply was generally intermittent. Chlorination was carried out at the source, wherever possible, although with an intermittent water supply this is exceedingly difficult with improvised apparatus and calls for constant attention and frequent checks.

Sub-artesian and shallow wells were plentiful, most of the latter being subject to pollution. Cases of enteric fever frequently showed a history of having drunk untreated well water in the area north of Pesaro during active operations.

Rapid progress was made during the pause before the final offensive in the work of restoring municipal supplies. By the end of March all occupied towns had a satisfactory supply, except Ravenna where, however, work on the original supply from wells twenty-six miles south, at Torre Pedrera, had been practically completed by the end of the quarter. Wallace Tiernan Chlorinators were used in several towns. In others improvised chlorinators made by field hygiene sections were employed; these called for constant attention and checking.

No special difficulties were encountered during the final battle. All the large towns occupied during the advance had had excellent supplies of dependable purity and most of these were either in working order or were quickly restored. In Trieste there were complications due to the occupation of the city and the waterworks by the Yugoslavs and to bomb damage to mains and sewers in one district, but this problem did not last long. In general the policy was to restore the purification plant when stocks of chlorine gas, etc., were available from civilian sources (e.g. at Trieste, Grado and Udine), and where this was not possible to instruct units in the town to carry out hand chlorination.

Few problems arose even during the rapid advance. Water points were established without difficulty on the numerous streams flowing through Venezia Giulia, and Carinthia abounded in excellent supplies. Most of the large camps constructed for the Todt organisation in Austria had good piped supplies which required no purification.

Filtration was carried out by means of 'autominors' and the output chlorinated at the site. In congested areas with limited facilities, such as storage tanks, bulk water-supplies were filtered, with strict instructions

that the contents of the truck or trailer must be treated with so many scoopsful of W.S.P. before departure. This duty was usually carried out by field hygiene section personnel to ensure that the instructions were complied with. Water supplies to smaller formations, in 2- and 4-gallon containers, were filtered and sterilised before issue.

During January, spring water had to be used in the vicinity of Suja. This was both warm and very sulphurous. After boiling, however, it was found to be suitable for the making of tea though unpalatable when drunk alone.

DISEASES PREVALENT AMONG THE CIVILIAN POPULATION

As Eighth Army advanced from Reggio and Taranto northwards, it was observed that in many of the larger towns and in almost every village the poorer people showed evidence of privation. Food (particularly flour) and clothing were scarce and living conditions primitive. Families of six, seven and eight lived huddled together in one or two rooms, with pigs, hens and goats wandering in and out. In the smaller villages all the household refuse, and frequently human excreta, were deposited in the street drain, if there was one.

Italian bread, which was the staple diet, contained 100 per cent. wholemeal flour. Meat was scarce and very expensive but vegetables were fairly plentiful in season. Large quantities of tomatoes were eaten and preserved in the form of purée. Olive oil, normally plentiful, was becoming scarce, while other forms of fat, including butter and margarine, were practically unobtainable. Dairy produce also was in short supply. Chickens, turkeys and geese were to be seen in country districts.

Distribution of food was particularly difficult owing to lack of road transport and the disruption of railways, so that even when fat was available it was frequently not possible to bring it to the consumer.

Undamaged and partially damaged housing was scarce and families large. In consequence there was gross civilian overcrowding, sometimes two or more families living in one or two rooms together with such farm-yard livestock as remained to them.

Clothing was obviously in very short supply and obtainable only by the well-to-do. The vast majority were dressed in rags, many going barefoot through the muddy streets.

It will be seen that at this time the stage was set for the outbreak of an infectious disease such as enteric or typhus. No serious epidemic occurred in the Army area. The only real, visible evidence of the unhygienic conditions prevailing was general undernourishment and septic skin conditions. Battle casualties (mine injuries, burns, splinter wounds and fractures) formed the commonest civilian disability in the Army area. The proportion of children among these cases was remarkably high.

The facilities for diagnosis and treatment in the smaller hospitals in the smaller towns were gravely inadequate and old-fashioned.

A.M.G.O.T. gradually assumed responsibility for the care of the homeless. A chain of camps was set up for their accommodation and a system of food distribution established.

During the period September 1943–March 1944, although evidence of the effects of malaria on the people generally and the children in particular could be seen in almost any town or village in Southern Italy, it was not striking except in highly malarious areas such as Catanzaro and Foggia. Spleen rates were low even in those areas and this was attributed to the use of 'Italikin' and other anti-malarial drugs.

Information from local sources indicated that in the recent past mortality and morbidity rates had fallen steadily but that, since the war began, control measures had lapsed almost entirely while drugs for prophylactic and therapeutic purposes had been increasingly difficult to obtain. It was not surprising, therefore, that the death rate had risen again and the number of cases had increased greatly. Figures for mortality and morbidity rates were not available and spleen rates were unreliable.

Definite data concerning the prevalence of malaria were difficult to obtain in X Corps area. Conflicting reports were rendered by various medical officers, even from the same locality. It was evident, however, that outside Naples and the contiguous towns the whole of the civil population was heavily infested, especially in the belt of marshland lying west of the Naples–Capua road.

Gonorrhoea and syphilis were prevalent in the large towns but not in the rural areas. The former was not looked upon as a disease of importance by the majority of practitioners and consequently received little attention or treatment in most districts. There were well recognised V.D. clinics and hospitals in most of the larger towns and in peace-time these functioned to advantage. Brothels were recognised and licensed, but accosting was a punishable offence and it was possible in some towns—Reggio, Vibo Valentia, Taranto and Bari—to arrest offenders and place them in protective custody.

Examination of prostitutes in brothels, as carried out by Italian medical officers, was entirely unreliable, but with the assistance of A.M.G.O.T. this was made less so under the supervision of D.A.Ds.H. The difficulty in dealing with the prostitute situation can be appreciated when it is realised that it was estimated that in Bari alone there were, shortly after the town was occupied, some two thousand clandestine prostitutes in addition to those in licensed houses. Almost every hotel and lodging house was used by these women, while pimps and touts abounded. It was found also that when brothels were placed out of bounds to troops the women left their licensed houses to ply their trade

on the streets where more money, or its equivalent (bully and biscuits), was to be picked up.

Strenuous efforts were made by all concerned to deal with the situation. Many of the worst houses were closed and others under new and better management opened. A drive against pimps and touts was instituted and efforts made to prevent accosting in the streets. A number of prostitutes were placed in protective custody and those found suffering from venereal disease were given treatment. It was also necessary to restrict the sale of M. & B. 693 and other drugs of the sulphonamide group as resistant strains of the gonococcus were being encountered in increasing numbers. Women were using these drugs as a prophylactic and many patients were attempting to treat themselves.

Generally speaking, Italian military, police and municipal services co-operated well, but they were more often than not ineffective and recommendations were not carried out. Much was done, however, by close co-operation and by supervision of brothels and prostitutes generally.

In X Corps area venereal disease was rife among the whole civil population. Civil organisations to combat this menace were negligible and, in consequence, wholesale infection of military personnel of all Allied forces took place. Although every village contributed its full complement, Naples returned approximately 68 per cent. of infections. From scrutiny of the returns submitted it would appear that three-quarters of the cases reported as having been contracted in Naples were of gonococcal origin. Elsewhere sores and syphilitic conditions were about equal in number to those of the gonococcal groups.

The adviser in venereology toured the forward area and lectured regimental officers on the general subject of venereal disease. The inadequate arrangements existing for the disposal of women found to be infected were strengthened, though they still remained far from satisfactory. The weakest link in any such arrangement was the unreliability of the average Italian medical officer's capabilities of diagnosis. Unless a definite discharge or obvious sore was evident most Italian medical officers would render a certificate certifying a woman as free from infection with venereal disease on a single naked-eye examination and without any bacteriological confirmation.

The arrangements were such that women evacuated out of Army area to Bari on the recommendation of a military medical officer frequently returned to the area after a short absence with a certificate signed by an Italian medical officer to the effect that they were not suffering from venereal disease. Strong representation was in consequence made to A.M.G. to prevent their return to Army area and, under instructions issued by the Provost Branch, all women evacuated were given a direct military order forbidding them to return to Army area. This order was

not fully implemented since the large number of cases involved necessitated admitting many to the V.D. wing of the civil hospital at Vasto, situated in Army area.

Facilities at the Vasto hospital were extremely limited. O.C. 5 V.D.T.C., Adviser to Eighth Army in Venereology, visited the hospital and studied the methods of examination, diagnosis and treatment practised by this particular civilian Italian doctor and was satisfied with the standard attained. The limitations of this hospital were lack of sufficient accommodation, shortage of beds and particularly blankets, inadequate nursing staff, shortage of therapeutic agents and dressings and the barest minimum of essential medical equipment.

An identification *pro forma* approved by Provost Branch was taken into universal use and medical officers received strict instructions in its completion.

Scabies and pediculosis were very prevalent among the civilian population and the former was closely associated with venereal disease. Almost every child and adult suffered from *Pediculosis capitis* and there was a high incidence of *Pediculosis corporis* among the poorer classes. Drugs for the treatment of these conditions were in short supply locally and in some towns sulphur was made available from the Army Medical Services. A.M.G.O.T. took the matter in hand, but, owing to shortage of water and fuel and the lack of public baths and disinfestors, without much success. In consequence reliance was placed almost entirely upon Army facilities.

Typhoid fever was endemic throughout Southern Italy. Incidence varied in town and village according to economic and sanitary conditions. In some of the badly bombed towns such as Foggia, the threat of an epidemic was very real. In many cases facilities for dealing with sporadic cases did not exist, and sometimes the sick were not even seen by a doctor. Statistics from civilian sources were not available, but almost every village had its case of typhoid, while in the larger towns there might be as many as a dozen at any one time.

When a town was occupied, an officer commanding a field hygiene section carried out a survey and collected information regarding the sick, the prevalence of infectious diseases, etc. At the same time drains and water supply were examined. In most cases extensive damage had resulted from bombing or demolition; only at Bari were these found intact. At Taranto arrangements were made for sewers to be flushed with sea water, fire-engines and other apparatus being utilised. Special water points were arranged for civilian and military use and scavenging services began to work at an early date.

The larger towns had a piped water supply in addition to a varying number of scattered wells. Villages and isolated farmsteads depended entirely on wells. On the occupation of a town it was invariably found

that the aqueducts had been damaged. In addition, owing to the customary method of construction, leaks frequently occurred at the junction of the pipes which, in the absence of inspection chambers, sometimes necessitated many deep excavations. The result was that the town supplies tended to be at low pressure, frequently interrupted and unreliable. Water points, put out of bounds when the town supply became available, had to be re-opened when the town supply failed.

Superchlorination of the whole town supply was the practice when possible, especially when, as was usually the case, the sewers had been damaged. The procedure was to instal an improvised oil-drum float-type automatic chlorinator to feed the main supply at a convenient point outside the town. A 'control house' usually existed on the outskirts of a town and was well situated for this purpose. The method worked well under the supervision of a sanitary assistant, but required large supplies of water-sterilising powder. The heavy demands for W.S.P. were met. All well-water supplies were examined and Horrocks tested by field hygiene sections and either put out of bounds or the number of scoops of W.S.P. required indicated.

A difficult problem was the disposal of civilian refuse. On occupation of a town the forward hygiene section would select a suitable site capable of being used over a long period, with a roadway access and within half to one mile of the town, so as to be within easy reach of horse-drawn vehicles. Control tipping was instituted, the vehicles passing over ramps to the exposed tip face. Brick-built incinerators were erected on the site and were operated by civilian labour gangs. Prevention of haphazard tipping of the rubbish in streets and alleyways was maintained by *carabinieri* patrols, by the display of public notices and, in Vasto, by house to house visits of trained welfare workers. The result was a big improvement in the general state of Italian towns, though they were still far from satisfactory.

The civilian sewage disposal systems seen in Southern Italy were often primitive and limited. The average southern Italian was apt to be either ignorant of or indifferent to elementary sanitary principles. In consequence, it was necessary to construct deep trench latrines for public use and efforts were made to persuade the inhabitants to use them.

Enteric fever was endemic in all occupied districts and minor epidemics were reported with increasing frequency in September 1944. Practically all cases were treated in their homes by civilian doctors. No traceable incidence of spread to troops was recorded.

Only occasional cases of malaria were reported. This disease was not a serious problem during the summer of 1944.

Venereal disease was not prevalent in the rural areas. Prostitution was not a serious factor except in Florence, where the civil incidence

of venereal disease, moderate to begin with, was known to be increasing—syphilis in particular.

Scattered cases of diphtheria occurred; in one village twenty cases of 'laryngeal diphtheria' were reported, with one death. Antitoxin, both for treatment and prophylaxis, was issued by A.M.G.

Almost the whole of the battle area on the Adriatic sector had been evacuated before operations began, and in the initial stages there were few civilian casualties. Later, however, returning refugees, following close on the heels of advancing troops, suffered fairly severely.

Damage to buildings was extensive, hundreds of houses having been reduced to rubble by German demolitions before the battle, and the vast majority of those left standing were extensively damaged during the advance.

The civilian population in the area occupied by Eighth Army during October–December 1944 suffered severely during the cold weather at the end of the year, and the outlook for the remainder of the winter was very miserable. Large numbers of dwellings had been destroyed or extensively damaged; window glass or any substitute was unobtainable; fuel was very scarce and the ration inadequate. Casualties from exposure were almost certain to be high before the warmer weather should bring relief.

An epidemic which gave rise to over a thousand civilian cases of enteric fever flared up in the Republic of San Marino in October and rapidly spread to Rimini, where 307 of the 400-odd cases which occurred before the end of the year were definitely traceable to San Marino. San Marino, being a neutral state, had been swollen by an influx of refugees from its normal population of about 15,000 to 80,000 or more. The epidemic was brought under control and rapidly subsided, but one to three cases a day were still being admitted to hospital in Rimini at the end of the year. The mortality was about 7 per cent. There was no evidence of spread to troops. When the epidemic broke out, the Republic of San Marino was being used as a rest centre, and in several instances troops were being billeted in houses where civilian cases of typhoid were lying. As the Republic was seriously overcrowded and there was no operational objection, it was evacuated of troops and put out of bounds. Control of the epidemic was rapidly achieved by co-operation between the military medical authorities and A.M.G.; the water supplies of San Marino and Rimini were placed under military control; the services of 2 Mob. Bact. Lab. were made available; a system of health visiting in Rimini was organised, and sanitary assistants were posted to the civilian hospital in San Marino to carry out disinfection and supervise sanitation generally.

Diphtheria was not so prevalent as reports seemed to suggest. At least 25 per cent. of cases admitted to hospital proved on investigation not to be true diphtherias. No actual epidemic of diphtheria was reported.

Comparatively few cases of malaria were reported. Civil authorities in Ravenna stated that when it was first entered there were few cases in the town, and only about 50 in the marshy area to the north.

Venereal disease did not appear to be unduly prevalent. In the towns about 60 per cent. of women arrested for soliciting were found to be infected. In the country districts there was probably little venereal disease. Only a small proportion of military infections were acquired locally. In Pesaro, Italian women who associated openly with troops were threatened with reprisals; this may have acted as a deterrent.

There was no evidence of heavy louse infestation, and no cases of typhus fever were reported.

Nine cases of 'catarrhal jaundice', of which six were young children, were reported in Savignano early in December. These were the only cases of possible infective hepatitis which came to light in the civilian population. The illness was characterised by jaundice, pale stools and a temperature of 102° F., but had none of the haemorrhagic features seen in Weil's Disease.

Considering the severity of the devastation in the area occupied by Eighth Army during the lull of January–March 1945 with the consequent overcrowding, exposure and shortage of all the ordinary necessities of life, the health of the civilian population remained surprisingly good. Up to the end of January there must have been much suffering as a result of the housing conditions and the shortage of food and fuel, but obvious signs of malnutrition were not nearly so frequent as they had been farther south. Reliable data on the prevalence of disease were not obtainable. A.M.G. reported a steady improvement in returns but it was obvious that most figures then available could not be regarded as either accurate or complete. There could be very little doubt, for example, that tuberculosis had increased very considerably and that the number of cases reported was only a small fraction of the whole.

The San Marino–Rimini epidemic of enteric fever had subsided before the close of the year and only sporadic cases continued. It is clear, however, that this was not an epidemic in the true sense, but was in the nature of an acute exacerbation of an endemic, which still smouldered and was likely to flare up again. O.C. 2 Mob. Bact. Lab., who undertook the greater part of the bacteriological investigations during and after the outbreak, insisted throughout that the 'epidemic' was not checked as a result of the various measures which were taken but merely permitted to subside, and that unless a search for carriers was energetically pursued a serious flare-up in 1945 could be predicted with certainty. He reported that he could not rely on effective co-operation in this regard from the civilian authorities. Towards the end of March an increase in the number of cases of enteric fever was noted in Forlì

Commune. A.M.G. began an immunisation campaign which, however, met with considerable difficulty as a result of popular distrust of injected vaccine. Much opposition from civilian doctors, ostensibly based on fear of the 'negative phase', was encountered while the outbreak was in progress in Rimini. The Italian medical profession had a curious preference for the completely useless oral vaccine, while their respect for the 'negative phase' did not deter them from using vaccines in the treatment of enteric fever cases.

Many scattered cases of diphtheria continued to occur until the middle of March, when the incidence appeared to show signs of declining. Most cases were reported from Ravenna, Bagnacavallo and Faenza neighbourhoods, but no actual epidemic occurred.

About 45 per cent. of women submitted for examination for venereal disease were found to be infected. Gonorrhoea was detected about twice as frequently as syphilis. These figures from a selected class do not reflect the condition of the population as a whole, in which venereal disease was probably not excessively common. Few military infections were traceable to local women.

Very few cases of malaria were brought to the notice of A.M.G.—none in February and only two in March.

No cases of typhus fever were reported. Lousiness was not a serious problem in this area.

Sporadic cases of infective hepatitis were now being recognised among civilians and a total of eighteen were reported in February.

During Operation 'Buckland' the worst destruction fell upon the villages in the Argenta Gap and in the Lugo district, where the offensive opened. Many civilians were killed and wounded and many more were rendered homeless. Several villages were completely destroyed by concentrated bombing and shelling. North of the Po there was much less devastation and comparatively little damage was done to the majority of towns. Padua, Venice, Udine and Trieste suffered very little and the Austrian towns and villages were affected hardly at all, although in some there had been a good deal of bomb damage earlier in the war.

Available information about the prevalence of disease was scanty and unreliable.

Enteric fever was endemic in many towns (notably Venice, Trieste and Ferrara) and there were small civilian outbreaks after the occupation in Villach and elsewhere.

Tuberculosis had increased year by year in Carinthia and was said to have reached a rate of 17.9 per 1,000 in 1945. The incidence of tuberculosis was also high in Trieste.

Venereal disease was rife in Trieste, as was shown by the incidence among the New Zealanders from the first few weeks of their occupation of the city.

Malaria is unknown in Austria, but in the coastal strip along the Adriatic the prevalence had been high during the war.

The refugee population in Austria furnished scattered cases of typhus and enteric fever. Some of these people were heavily infested with lice and scabies.

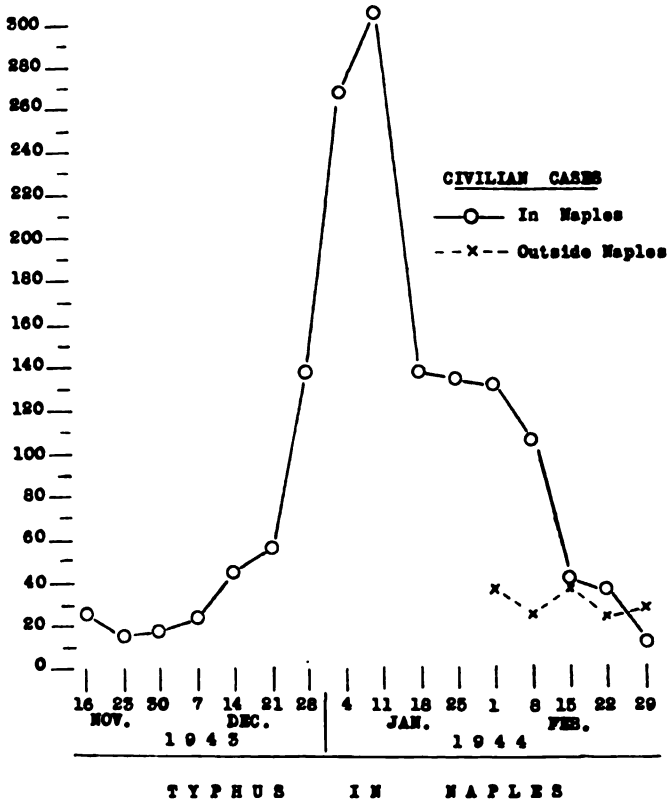


FIG. 132. The Typhus Epidemic. Naples. November 1943–February 1944.

X CORPS AREA

During November 1943, 40 cases of typhus were reported as having occurred in 57 Area (Naples). By January 1944 the disease had reached epidemic proportions among the civilian population in the area.

D.M.S. A.F.H.Q. in December 1943 advised the chief staff officer of A.M.G. at A.F.H.Q. to ask that a team from the American Typhus Commission should be sent to Naples. On Christmas Day at a conference in Algiers it was announced that the Typhus Commission was to undertake :

- (a) the mass delousing of the civil population in Naples;
- (b) the organisation of a complete case-finding service;

- (c) the disinfection of contacts;
- (d) the inoculation of key personnel.

Sixty tons of D.D.T. were on the way from the U.S.A. by fast ship; a hundred tons for A.M.G. were to arrive in instalments.

By January 15, 1944, the campaign was in full swing. There were thirty dusting stations operating, staffed by Italian medical students and nurses. By February 5 the number of fresh cases had begun to drop. Over a million civilians had been dusted and nineteen thousand key personnel inoculated. Before the epidemic was over some million and a half people had been dusted.

This 'blitz' attack upon an epidemic in which all the 'armour' of preventive medicine was skilfully and powerfully employed was a most dramatic illustration of man's mastery over diseases of this kind; of what can be done when the need is sufficiently urgent and when such action is unhindered by considerations of finance and of dissentient opinion.

CIVILIAN REFUGEES

During October and November the increasing numbers of civilian refugees presented major problems of medical treatment, evacuation and disinfection.

From the outset of the campaign the Army Medical Services were called upon to deal with a constant trickle of civilian casualties, a trickle which rapidly increased as the bombed and burned villages of the Foggia plain were approached. It was not, however, until the Trigno was reached that the problem became really serious. Here the situation was that, while Campobasso had a small well-equipped and relatively undamaged civil hospital which could deal with the normal local sick and some casualties, the influx of many civilian wounded, chiefly women and children, from forward areas was so great that admission to military medical units was inevitable. In addition, the hospital theatre was out of action and the Italian medical and nursing staff disorganised. The existing A.M.G.O.T. organisation, including supplies of medical stores, was insufficiently developed to cope with the situation, despite the efforts of individual A.M.G.O.T. medical officers. Rapidly improvised arrangements to evacuate in returning empty trucks did not much ease the situation as some ten major surgical cases were being brought in each day.

Fortunately at that time, owing to the impossibility of deployment from the roads and to lack of accommodation, two field ambulances and a C.C.S. in the neighbourhood were closed. It was decided, therefore, to put a section of a field ambulance H.Q. company into the civil hospital to get it running again and keep up a regular discharge rate. This plan was carried through with very satisfactory results. A regular turn-over

of admissions and discharges was maintained and military medical units in the area were freed from civilian patients other than acute surgical cases. After the fall of Isernia, a big hospital centre, on November 5, it was necessary, owing to the complete destruction of the hospital building, to assist A.M.G. in establishing fresh accommodation in Carpinone. The new establishment began to function on November 27.

On the V Corps axis similar but less serious problems were being faced. The civil hospital at Vasto was completely filled and was unable to receive cases which were being evacuated from the small civil hospital at Altino, where it had been necessary to accommodate the overflow of casualties in the adjacent church. Further confusion was caused at Altino in that the Vasto authorities not only failed to receive their cases but actually returned more than were sent back. Immediate arrangements were made, in conjunction with A.M.G., to evacuate all minor cases back to Bari in military transport.

As well as the problem of dealing with and evacuating casualties, there was the difficult problem of medical supervision and disinfection of large numbers of infested personnel and their belongings. Inspection of refugees at rearward collecting centres revealed that many were louse infested and a number were suffering from scabies. As the military situation demanded that refugees should be removed from the forward areas as quickly as possible, it was clear that any system of inspection and disinfection would have to be established well behind the battle zone. A civilian M.I. room was opened in the Isernia reception area in two rooms of a M.D.S. This was staffed by a local Italian doctor supplied with drugs from A.M.G. sources. Similar arrangements were made at an Indian P.o.W. camp at Carovilli, an I.A.M.C. medical officer being in attendance, assisted by Italian nurses.

On the eastern coastal axis there was no organised system of collection in forward areas. Refugees arrived in Vasto in lorries and on foot from across the Sangro and from various villages. Here a small collecting post had been established in a part of a local cinema. It was frequently overcrowded at night, and complete segregation of the sexes was rarely possible. Supper and breakfast were provided from Army sources, assistance being given by local voluntary helpers. All blankets were disinfested by 8 Fd. Hyg. Sec. daily after use, and subsequently by 13 Fd. Hyg. Sec., which also maintained hygiene supervision of the premises. Separate latrines—squat type—were provided in the adjoining grounds, considerable supervision being necessary to ensure their proper use. A local Italian medical officer visited each day to attend to the sick, but his value was seriously limited by the almost complete absence of medical supplies. The average stay in the centre was about twenty-four hours, when evacuation to Guglionesi was carried out in any available transport.

It was clearly evident that a large, self-supporting refugee camp was required. At the end of the year a tented camp was being set up at San Salvo. All refugees were seen by an Indian medical officer assisted by two Italian nurses and medical stores were supplied by A.M.G. A disinfestor (M.E.S.H.) was delivered to the site pending the carrying out of repairs to an Italian steam disinfestor which had been found in Casalbordino. The accommodation at Vasto was made to serve as a stragglers' post.

YUGOSLAV REFUGEES

In the late autumn of 1943 refugees from Yugoslavia began to arrive on the eastern coast of Italy. Before long several thousands had landed, and the wounded became a charge upon the Army Medical Services.

Early in January 1944 70 B.G.H. at Taranto was cleared for their reception and arrangements were made with D.M.S. Middle East whereby some 500 of them could be sent to Malta to 39 B.G.H.

On January 18 there were demanding attention :

500 seriously wounded
2,000 lightly wounded
300 sick
200 cases of tuberculosis

The local hospital at Grumo was expanded to 2,000 beds and staffed by Yugoslav personnel, aided by personnel of 159 Fd. Amb. At Taranto 500 beds had been set aside for these refugees and evacuation to Malta was proceeding. In June 1944, 1 Mob. Mil. Hosp. was moved from Turi near Bari, to Andria to cope with these refugees. It was quickly over-filled with some 1,000 patients, mainly convalescents. In August the unit moved to Gravina there to continue this work and in October to Barletta where both Yugoslavs and British were admitted. This arrangement proved to be far better than the previous system of admitting Yugoslavs alone. In November the unit moved to Brindisi there to function as a typical garrison hospital. Its name and its function had come to be in discord and so in January 1945, this unit, a creation of the special circumstances that obtained in the Middle East and with a record of great historical interest, gave up its name to become an ordinary 200-bed general hospital bearing the number 133.

(iii)

Medical Supplies

MEDICAL STORES AND EQUIPMENT

EIGHTH ARMY

Inexpendible medical equipment during September–November 1943 was sufficient to meet all demands. Some expendible medical stores,

especially sodium pentothal, were in very short supply. Great delay was experienced in the provision of anti-typhus vaccine and anti-diphtheria serum, but in the end all demands were met in full.

The provision of lighting sets (not a medical supply) caused great anxiety for some time. Eventually enough sets were provided to meet requirements.

No provision appeared to have been made for replacement of X-ray van and trailer sterilisers lost through enemy action.

During December 1943–March 1944 grave anxiety was caused in Eighth Army by the inability of base depots of medical stores to meet demands placed on them by advanced depots serving with Eighth Army. Their inability to supply compressed tablets over long periods led to a serious shortage of these items in the forward areas. There was, however, a marked improvement in supply towards the end of February.

Medical supplies and also blood and other transfusion stores were satisfactory during April–June 1944. On a few occasions, due to poor communications, blood failed to arrive, but plasma and intravenous glucose-saline were always in ample supply.

From July to September 1944 the supply of oxygen was insufficient. The position was finally stabilised by making arrangements whereby A.A.I. sent all oxygen for forward distribution to 10 Adv. Depot Med. Stores at Ancona, from which 7 Adv. Depot, 1 Cdn. Adv. Depot and 344 Polish Adv. Depot drew oxygen on the exchange basis of one empty cylinder for one full one. This arrangement worked admirably.

Horrocks boxes during the whole period were never in sufficient quantity to meet demands or to equip units to full G.1098 scale. During the last two weeks of September some 200 complete boxes arrived in advanced depots of medical stores, sufficient to meet immediate demands.

Advanced depots of medical stores under command during October–December 1944 were:

- 7 Adv. Depot Med. Stores
- 1 (Cdn.) Adv. Depot Med. Stores
- 344 (Pol.) Adv. Depot Med. Stores

The medical stores situation gave rise to concern during October and November on account of the great delay which ensued from the time indents were submitted by 7 Adv. Depot Med. Stores to the time of the arrival of items—a delay of more than two months—which might have led to a serious breakdown in the provision of medical supplies to the forward troops had it not been for the energetic work of the mobile section, which daily toured the countryside to try and procure the necessary items from other advanced depots and medical installations, thus tiding over a long period until the full scale of the indented items arrived on December 10.

Sometimes items marked 'not available' on the monthly indents could be produced very quickly when requests for these items were placed by D.A.D.M.S. Army to Staff Captain Stores, A.A.I., by telephone.

The arrangement that 10 Adv. Depot Med. Stores would be responsible for the supply of oxygen to all advanced depots worked well until December 16, when this store ran completely out of oxygen. The emergency was met by 1 District switching cylinders from the Indian depot of medical stores overnight.

With the establishment of 2 Base Depot Med. Stores at Ancona, the situation as regards the supply of medical stores to forward units was expected to become much easier.

With the move of 5 B.T.U. from Bari to Ancona the anxiety concerning the blood supply to Eighth Army medical installations was relieved. There were occasions when the forward F.T.U.s., particularly 9 and 26, seized the initiative and coped with emergencies by bleeding donors in their respective areas. The supply of other transfusion fluids was adequate, but an increasing rate of reaction from plasma transfusion was reported. Penicillin was plentiful and its distribution by 9 F.T.U. very satisfactory.

Advanced depots of medical stores under command during January-March 1945 were:

7 Adv. Depot Med. Stores
344 (Pol.) Adv. Depot Med. Stores
'S' Italian Adv. Depot Med. Stores

At the beginning of February D.D.M.S. Polish Corps stated that considerable difficulty had been experienced in obtaining adequate supplies of anti-syphilitic drugs, especially Bismostab. This was brought to the notice of the consulting venereologist, and with improvement in the supply position stocks were made available to Polish II Corps through their own advanced depot of medical stores.

The supply of blood and penicillin to forward units was from 2 B.T.U. at Ancona through 9 F.T.U. Blood was not issued to units not capable of storing it and, in general, units forward of C.C.Ss. and F.D.Ss. were not supplied.

During the first offensive the quality of stores was good and the position as regards supply and distribution remained generally satisfactory. In the middle of May, when the light section of 7 Adv. Depot Med. Stores was in Klagenfurt and the heavy section at Padua, it appeared as if supply difficulties for units around Udine might occur, but 3 Adv. Depot Med. Stores arrived at Udine from Florence. Both these depots obtained their stores by road from 2 Base Depot Med. Stores at Ancona. Units were supplied by road from the advanced depots.

The Italian units were able to obtain almost all their requirements

from their own stores and only rarely did they draw on British units. This was a marked change from the previous quarter, when concern was caused by the quantity of medical stores the Italians were obtaining from British sources.

There was an increased demand for dental appliances and materials and all dental units were working at high pressure.

Until Padua was opened as a medical centre all the oxygen in use in the Army came from Florence *via* 3 Adv. Depot Med. Stores, which was at that time established there. For a short time 7 Adv. Depot Med. Stores obtained oxygen locally from a producing plant in Padua. In early June arrangements were made for 3 Adv. Depot Med. Stores to obtain oxygen from a producing plant in Udine, which was also supplying oxygen to the R.A.F. The output was amply sufficient to meet demands from both V and XIII Corps.

Blood, plasma and penicillin were distributed direct to units by the blood bank, 9 F.T.U., which moved up to Ferrara when a medical centre was formed there on April 27. Supplies were plentiful. Communications proved to be rather long during the forcing of the Argenta Gap, but the battle was moving so rapidly that it was considered inadvisable to move the blood bank until the position should have become fairly static. The blood bank remained at Ferrara for the crossing of the Rivers Po and Adige, and on May 4 moved to Padua. Towards the end of May it moved again to Udine, where it was attached to 83 B.G.H., and remained there for the rest of the quarter. Units were very well supplied with blood, plasma and penicillin and no cases of inadequacy or failure to receive supplies were reported. After the battle the supply of blood from base virtually ceased and hospitals and C.C.Ss. obtained such supplies as were required by local bleeding.

X CORPS AREA, SEPTEMBER 1943—MARCH 1944

The mobile section of 10 Adv. Depot Med. Stores was able to work well forward of the depot itself and was thus able to provide a quick supply to the common expendible items.

Metal trestles to raise stretchers eighteen inches off the ground were constructed by X Corps R.E.M.E. and were found most useful by field ambulances and C.C.Ss. holding short-term sick.

Red Cross supplies gradually became more plentiful. All medical units u/c X Corps possessed at least one Red Cross battery wireless set.

The Neil-Robertson stretcher was not found satisfactory for mountain warfare.

RATIONS AND MEDICAL COMFORTS

EIGHTH ARMY

During September–November 1943, 'compo' rations and 48-hour mess-tin rations were adequate and much appreciated by the troops.

Troops joining Eighth Army from the United Kingdom and North Africa complained that M.E. rations were monotonous. This was chiefly due to the fact that no fresh meat was available until November 15.

The ration scale (N.A.) at the end of the period was adequate and well balanced. All through the period ample quantities of fresh fruit were available—grapes, apples, pears, nuts and oranges. Vegetables were fairly plentiful in country districts but dairy produce—eggs, butter and cheese—were scarce and in most places unobtainable. Fair supplies of poultry, including turkeys, were available in some places, also pigs and sheep.

Troops operating at heights over 2,000 feet received additional rations according to scale.

Medical comforts were in good supply and adequate.

The standard of messing and cooking remained high during December 1943–March 1944. The scale allowed a greater variety of dishes than the M.E. scale. Fresh meat was issued fairly frequently and was greatly appreciated. Fresh fruit, particularly apples and oranges, and vegetables were readily available in almost unlimited quantities. An extra issue of tea, sugar and milk, in place of the rum ration introduced in December, was most popular.

Medical comforts were adequate and in good supply.

Rations supplied during April–June 1944 were entirely satisfactory with the following exceptions:

Dehydrated meat and vegetables were growing more and more unpopular with the troops. The basis of the trouble was that cooks did not seem to re-hydrate the material sufficiently well. Rigorous instructions for correct preparation were issued.

Various complaints were made about the rations issued to Italian troops. The basis of the complaints was probably the lack of olive oil in the issued ration and the substitution of cotton seed oil which is completely unpalatable to the Italian.

During August representations were received that the ration for Indian troops operating in the mountainous country north of Arezzo was insufficient. Supplementary items were accordingly authorised for both British and Indian troops of Indian 4th Division while operating under these conditions.

The decline in the availability of fresh fruits and vegetables began to cause anxiety at the beginning of October and a study of issues during the second half of that month showed that the gross vitamin content had fallen to not more than 30 mg. per man per day. As cooking might reduce this to 12 mg. or less, an issue of compound vitamin tablets was authorised, to be commenced at the discretion of formation commanders on medical recommendation. Strenuous efforts were made to

improve supplies, and by the end of November it was possible to discontinue issues of vitamin tablets to all but Army troops, as fresh rations were by then available in almost all areas. The special efforts of supply and catering branches at Christmas produced a further, if temporary improvement and all troops in Eighth Army undoubtedly had a more than sufficient vitamin supply over the period as a whole.

The issue of additional rations to troops operating under exceptional conditions of altitude and climate was authorised on October 6 (A.F.H.Q. Ration Scale No. 6). With the onset of cold weather, however, some complaints were received about the bulk of the ration. These came principally from medium and heavy regiments, R.A., who submitted that, while the ration was adequate in calories, troops employed on heavy duties at night in exposed conditions suffered from hunger unless they were supplied with extra items of food. After due investigation an application was made to higher authority for approval of an issue of an additional 2 oz. of bread in such circumstances.

Early in January 1946 some difficulty was experienced in obtaining fresh vegetables from local sources and priority was then given to operational troops, with a result that ascorbic acid issue was necessary in X Corps for a short period.

High altitude rations were issued to certain troops engaged in snow clearance on mountain roads.

During the final offensive every formation under command reported that the rations issued even to the most rapidly moving troops were excellent in every way. At the height of the conflict the fighting troops received at least one hot meal daily and fresh meat and vegetables reached them regularly. Only rarely was it necessary to issue M and V and biscuits.

From the beginning of May onwards the supply services had to tackle some new and formidable problems. Eighty thousand troops in Austria had to be supplied with rations and there was no possibility of establishing through rail communications for several months at least. In the initial stages enormous numbers of refugees had to be fed from Army sources and, with the exhaustion of enemy stocks, the feeding of the surrendered enemy forces had to be undertaken as well. The result was that while the ration for the troops in Austria was adequate throughout in quantity, it was deficient in fresh vegetables and fruits after the middle of May. Plenty of perishable fruit and vegetables could be found around Forli and Ancona but transport difficulties would not admit of the delivery of more than a small proportion by road, and most of it was unsuitable for the unavoidably slow and interrupted journey by rail. Some oranges, however, were received from base towards the end of the quarter. The vitamin 'C' content of the ration was low enough to produce complaints from certain formations in Austria but

not sufficiently low to justify the issue of supplements. It never fell below about 15 mg. ascorbic acid net per man daily.

At the beginning of May there were estimated to be in the British zone in Austria about 350,000 individuals of all nationalities—surrendered troops, prisoners-of-war, refugees and displaced persons—who had to be sorted out and fed. Those who came into the category of displaced persons were supposed to be rationed by the Austrian Government, but in the early stages most issues of food came from Army sources.

Enemy stocks of food were soon exhausted and surrendered personnel were fed according to scales based on available supplies, drawn up by agreement between the S.T. and medical branches at Army H.Q. These scales furnished about 2,000 Calories per diem for non-workers and up to about 2,900 for manual workers. This ration was very much better than the scales to which the enemy had been reduced in the last stages of the struggle, but it was badly balanced and notably deficient in first-class protein and vitamins—particularly vitamin 'C'. Its defects were, of course, recognised from the beginning, but the situation was such that they had to be accepted. On May 28, as a result of a detailed analysis, D.D.M.S. Eighth Army addressed a memorandum to D.D.S.T. which included the following:

'The most serious deficiencies are in vitamin "C" and animal protein; the latter is most likely to cause trouble in connexion with heavy work. The low vitamin "A" content is also a dangerous element in view of its influence on the resistance to infections. When dehydrated potato is included in the ration the vitamin "C" level becomes just sufficient to prevent deficiency, but this, presumably, could not be guaranteed.

'It is recommended, therefore, that compound vitamin tablets should be issued so far as supplies will permit; if possible one tablet daily or, failing that, on alternate days.

'In view of the fact that scattered cases of typhus have already occurred, it is essential that so far as possible the nutritional level should be maintained. For this reason it is recommended that issues of vitamin supplements should be commenced without delay.'

It turned out, however, that compound vitamin tablets could not in any circumstances be provided. Ascorbic acid tablets were asked for in their place, but by the end of the quarter efforts to improve the ration had met with little success.

It is to be noted that the state of nutrition of both enemy forces and displaced persons showed a remarkable lack of obvious signs of deficiency disease. Not a single authentic instance of any of the well-known nutritional disorders came to notice; no doubt some minor cases would have been found had they been carefully sought, but in general the impression given was of lean, hard, tired and demoralised men who looked remarkably healthy despite their hardships.

X CORPS, SEPTEMBER 1943—MARCH 1944

Except for the absence of fresh or chilled meat, rations were satisfactory. The meat issue consisted of preserved meat and occasionally of meat and vegetables. The forward troops received 'compo' rations. The ration was supplemented by the purchase by individuals of fruit. Vegetables could be bought at reasonable prices. In November troops operating at high altitudes received additional rations.

During December–March the corps was on F.S.R. Scale, with minor exceptions. Fresh commodities and frozen or chilled meat, vegetables and fruit, imported or purchased locally, supplemented the normal scale. Some forward units on Monte Cassino were given a '10-man Pack' for a short spell with an augmented breakfast ration.

Supplies of medical comforts were adequate.

CLOTHING

Apart from the fact that there was some delay in issuing battledress, which did not arrive in Italy until October 1943, there were no criticisms. All troops had two pairs of boots and three pairs of socks, four blankets and a ground sheet. Special winter clothing was demanded for troops likely to operate at heights over two thousand feet during the winter months.

Change from drill to winter clothing was effected on or after October 1944 at the discretion of formation commanders. North of Rimini the wearing of shorts was prohibited. Early in November a fourth blanket was issued to all troops.

Repeated representations had been made to higher authority that a fifth or even a sixth blanket might be necessary during the colder months in northern Italy, but the supply position did not permit of even a limited issue of a fifth blanket. A number of sleeping bags was made available, however, and 5,000 each were issued to Polish II Corps and V Corps, to be held as a pool for distribution as necessary. Duffel coats and leather jerkins were issued widely to selected personnel. Despite the severe cold towards the end of the year no complaints about the clothing situation had been received by Army H.Q.

The nature of the terrain in which Eighth Army was operating made the danger of trench feet a real one, and this problem received early consideration. Orders on the subject were published and every opportunity taken to encourage regimental officers to realise their responsibilities in this regard. Foot soap and foot powder were made available in adequate quantities and a number of empty insect repellent containers (1,500 per corps) were issued for use as powder receptacles. The sock position caused anxiety; the American socks originally in use were very thin and afforded poor protection compared with the British pattern, and medical representations that a fourth pair of socks

would probably be required on a large scale were met with the information that, owing to a world-wide shortage of wool, sufficient stocks did not exist in the theatre to permit this. Eventually, however, the thin-type American sock was replaced by one very similar in weight to the British sock and sufficient stocks were found to enable a fourth pair to be issued on a fairly generous scale to troops whose situation made them necessary.

A.T.S.O.-I. for anti-louse impregnation of shirts at mobile laundries became available towards the end of January 1945, and from then onwards all shirts were impregnated as a routine. Treated shirts are undistinguishable on ordinary examination from untreated, and few troops realised that they were wearing impregnated shirts. Some trouble arose at the laundries from the fumes which are given off in the drying process. So long as ventilation around the dryer was free no inconvenience was caused, but at night the blackout restrictions caused fumes to accumulate and some of the operators suffered from nausea and vomiting. To avoid this, all treatment of shirts was carried out during the daytime.

Khaki drill was taken into use early in May. The changeover was well timed, the end of April having been rather cooler than was expected and the temperature rapidly mounting from the middle of May onwards.

In Eighth Army the use of shorts was prohibited throughout the Army area 'at any time except for organised recreation'. This was a somewhat revolutionary measure and had been given a trial at the end of the previous malaria season, more as a means of testing the general reaction than in the hope of reaping any immediate benefit. It was accepted with very little criticism from any quarter at the opening of this season and served a useful secondary purpose in helping to impress upon everybody the dangerous nature of the country in which the army was then operating.

The advance, however, rapidly carried V Corps into Austria which is non-malarious. The ban on shorts was therefore partially lifted on May 24, when all routine anti-malaria precautions were discontinued north of the line Codroipo, Route 13 to Udine—Route 56 to Gorizia, and soon afterwards was lifted throughout Army area.

D.D.M.S. Eighth Army writes :

'Thus passed one of the very few instances in which this particular measure, advocated by "Medical" with monotonous regularity every malaria season since the beginning of the war, has been put into practice. Had the battle gone otherwise and had we been held up in the Po valley throughout the season, there can be little doubt that our malaria casualties would have been materially reduced by the prohibition of shorts.'

The nights in Austria were relatively cool and all troops there retained three blankets, 46th Division in the Wolfsberg areas having four.

(iv)

Lessons learnt from the Italian Campaign

At the end of the campaign D.D.M.S. Eighth Army, having consulted with D.Ds.M.S. V and XIII Corps, recorded his opinions, as these were shaped by his and their experiences.

Many valuable lessons were learnt by the medical services of Eighth Army in the hard and prolonged campaign in Italy. The terrain and types of operation were of the most varied character. That which was learnt was the result of accumulated experience, much of which was first acquired in Africa. These lessons may be grouped under three main headings :

- I. Administrative
- II. Professional
- III. Hygiene

I. ADMINISTRATIVE

I. DIVISIONAL MEDICAL UNITS

A. Regimental Medical Officers

There was considerable difference of opinion in battalions as to the most suitable transport for R.M.Os. Experience showed that the following was the ideal transport establishment for the R.M.O. of a battalion :

Stretcher jeep with trailer	1
15 cwt. truck	1
Bren carrier modified for stretchers	1
Amb. car 2 stretcher 4×4	1 (lent from Fd. Amb.)

B. The Field Ambulance

One of the most obvious medical lessons of the campaign was that the existing field ambulance organisation was most extravagant in personnel and transport and was unsuited for the duties which it had to perform. The new organisation, using F.D.Ss. as advanced surgical centres, removed from the field ambulance what was formerly one of its main functions, that of forming a battle M.D.S. with F.S.Us. attached. This left only two functions for the divisional field ambulance :

(a) In battle to form brigade A.D.Ss. and collecting posts for rapid evacuation, performing at this level only essential resuscitation and elementary triage.

(b) To form a divisional C.R.S. for light sick.

If, as is laid down in the training pamphlet, the H.Q. field ambulance is used to form an A.D.S., it is found to be far too large for this purpose and a large 'B' echelon of personnel and transport is L.O.B. Further,

the companies have no function. A better method was to make the bearer company form the A.D.S., but then the H.Q. was redundant. In fact, the field ambulance, if completely deployed, imposed one unnecessary stage between the R.M.O. and the F.D.S.; if it was not, there were unemployed transport and personnel; either result was to be deprecated.

To perform the above functions a field ambulance company was required with each brigade to form the A.D.S. and two units were necessary for divisional light sick. One modified field ambulance and one F.D.S. were adequate for this task.

The following would appear to be the most useful composition of the field ambulance :

- (i) Companies—3, one per brigade
personnel, 70 per company (approx.)
- (ii) H.Q. Coy. —1, personnel 100 (approx.)

In battle the companies would form the brigade A.D.S. and in peace a small brigade C.R.S., accommodating 30 cases on stretchers; the H.Q. would form a divisional light sick C.R.S., accommodating 80–100 stretcher-cases. It would never form a battle or surgical M.D.S. O.C. Fd. Amb. Coy. would act as S.M.O. of the brigade and O.C. Fd. Amb. would be responsible for the co-ordination, administration and transport of the whole unit.

In addition, one F.D.S. would be required for the divisional area. This would be permanently allotted to the division. It would take up to 100 sick (60 on beds, 40 on stretchers). It would not be employed to form an advanced surgical centre. The saving in personnel and equipment compared with the existing organisation is obvious, and there would be definite full-time work for everyone in battle and in non-operational periods. The medical cover would be quite adequate under any but the most abnormal conditions.

(c) *Field Ambulance Equipment.* Efficient wireless communication was considered essential in every type of division. Many divisions in fact possessed wireless sets, but it is necessary that a firm establishment should be laid down, as in R.E.M.E. Minimum requirements were considered to be :

- 1 set for the A.D.M.S.
- 1 set for the Fd. Amb. H.Q.
- 1 set for each Fd. Amb. Coy.

The field ambulance company wireless set should be netted on the brigade frequency, the H.Q. field ambulance set on the divisional medical H.Q. frequency. A rover set with the A.D.M.S. also proved of great service. These sets would be operated by Royal Signals personnel; this would involve an addition to the establishment of divisional Signals.

(d) *Field Ambulance Transport.* The great need for four-wheel-drive vehicles in a division became more and more obvious as the campaign progressed. The Austin and Chevrolet ambulance cars were admirable on good dry roads, but in the forward divisional areas they often proved to be totally inadequate for the tasks they were called upon to perform. No infantry division can possibly evacuate its wounded from the forward R.A.Ps. with speed and safety unless it can rely on an adequate four-wheel-drive ambulance service. During this campaign it was necessary on many occasions to employ the A.F.S. with their four-wheel-drive Dodge vehicles exclusively in the forward area since the British cars available were unable to negotiate the only existing roads. It is most strongly recommended that all ambulance cars in a division should be four-wheel-drive models.

C. *Light Field Ambulances*

During the Italian campaign these units did not prove their worth. In European terrain independent armoured or tank brigades seldom have, in fact, an independent rôle, and the continued existence of a light field ambulance on their order of battle is considered wasteful and unnecessary. The provision of a light field ambulance as Army troops on the scale of one for every two armoured brigades would seem to be a waste of medical personnel.

Possibly a small mobile medical unit of about 50 all ranks might be provided for each independent brigade, with the task of forming a brigade sick station. The C.O. of this unit could then act as S.M.O. of the brigade. One field ambulance as described above would be perfectly suitable for an armoured division. Although evacuation from an armoured formation was regarded as being a difficult undertaking, in fact it was probably the easiest formation of all from which to evacuate wounded since the casualties were always comparatively light and vehicles plentiful.

D. *Medical Branch Divisional H.Q.**

It became obvious during the campaign that the composition of the staff of the A.D.M.S. was unsatisfactory.

(a) The following failings of the existing divisional H.Q. establishment would seem to be in need of remedy :

- (i) By virtue of his appointment the A.D.M.S. is not obviously a commander, as are C.R.A., C.R.E., C.R.Sigs., etc.
- (ii) The divisional hygiene representatives are divorced from the administrative H.Q. and their workshop is uneconomical.

* See Vol. 1, Administration, Chapter 3. The Committee on the Organisation of a Field Army (1919).

(b) To remedy these failings it is proposed that the establishment of divisional H.Q. should be amended as follows :

- (i) The medical branch should become an attached H.Q. with its own establishment.
 - (ii) A.D.M.S. should become Commander Army Medical Services (C.A.M.S.);
 - (iii) The divisional field hygiene section should be absorbed thus :
O.C. should become D.A.D.H. ;
Sanitary inspectors should be part of C.A.M.S. H.Q., workshops, personnel and equipment forming a corps hygiene company.
- (c) This revision has the following advantages :
- (i) An over-all economy of personnel and transport ;
 - (ii) An increase in the co-ordination and integration of medical administration and practical hygiene ;
 - (iii) An independent medical H.Q. that can be sited or split as the situation demands—e.g. in battle A.D.M.S. must spend the majority of his time at main divisional H.Q. while the remainder of his H.Q. stays at rear H.Q.

A.D.M.S. would be given the same status as other service commanders—C.R.A.S.C., C.R.E.M.E.

There is no authorised scale of wireless, but a minimum of four wireless sets should be allotted to C.A.M.S. on W.E.

The proposed divisional medical units would now be :

- (i) independent medical divisional H.Q. ;
- (ii) one field ambulance ;
- (iii) one F.D.S.

(d) The detailed proposals of establishment submitted would apply equally to armoured and infantry divisions.

2. CORPS MEDICAL UNITS

A. *Field Surgical Units*

These proved their great value beyond all doubt. It is on these that the success of all forward surgery depends. Their W.E., however, demands revision since it is extravagant both as regards equipment and transport. Before the last battle, after consultation with the Consulting Surgeon, Forward Areas, and several Os.C. F.S.U.s., a large amount of surgical equipment was removed from the F.S.U.s. and returned to store as unnecessary. In action the units worked without this equipment most efficiently. It is obvious that unnecessary equipment was being carried and that revision by experts was required.

Since beds are not now carried by F.S.U.s., one 3-ton lorry G.S. 4 × 2 is surplus and should be deleted from the W.E.

Experience showed that the 1-kw. generator was not large enough for the purposes for which it was required and it should be replaced by a 2·7-kw. generator mounted on a trailer.

B. *Field Dressing Stations*

These units proved satisfactory, but some confusion still appeared to exist regarding their use; considerable modification in equipment and transport are still required. It was found that the F.D.S. has two main functions* :

(a) To form an advanced surgical centre with F.S.U.s. and F.T.U.s. attached;

(b) To form a small field hospital (capacity 80 sick, 40 on beds).

Certain general points regarding F.D.S.s. were learnt.

- (i) All F.D.S.s. should be on one establishment and thus interchangeable.
- (ii) With the exception of one F.D.S. per division, F.D.S.s. should be Army troops allotted to corps on a definite scale. The interchange of F.D.S.s. from one formation to another in battle is thus made much easier and enables any F.D.S. to carry out a dual rôle, as indicated above.
- (iii) A F.D.S. should be used as a whole and not split up by forming light sections or rear parties looking after pockets of wounded. A F.D.S. is too small a unit to split up without making the main body practically inoperative.

(c) *Equipment.* The existing scale of 40 beds was not found to be adequate; the scale should be increased to 60 beds. A F.D.S. can remain in action continuously for about seventy-two hours only, by which time it will have accumulated about 60 Priority I or II cases. That number is the ceiling with which the staff can deal adequately. Most F.D.S.s. in Eighth Army were working to this capacity in battle and the additional 20 beds were always required.

In addition, for a F.D.S. working as an advanced surgical centre, the following two articles of equipment are required :

- (i) A mobile steriliser—trailer 15-cwt. two-wheel steriliser;
- (ii) A mobile X-ray.

It is realised that a steriliser is not required in every F.D.S., but three mobile sterilisers should always be available in corps for use with A.S.C.s. They might be shown as on the strength of a corps C.C.S. for use with a F.D.S. The mobile X-ray could be carried on a jeep and trailer. Two per corps are suggested as the scale. They would be most useful in dealing with complicated cases.

* See Appendix XXV and Section 4 A, page 580.

(d) *Transport.* In order to carry extra beds, two lorries G.S. 3-ton 4×2 are required. The two ambulance cars, 4×2 Heavy, now on the W.E. of a F.D.S. perform no function which could not be carried out by ambulance cars from a corps M.A.C. Nothing is gained by holding them on the W.E. and they could be deleted, two lorries G.S. 3-ton 4×2 being substituted. Thus no additional vehicles would be added to the W.E.

3. ARMY MEDICAL UNITS

A. *C.C.Ss. and General Hospitals (200 beds)*

It was learnt that the medical set-up in Army Area was not entirely satisfactory. It appeared that there was not enough holding capacity in this area, with the inevitable wastage of man-power through unnecessary evacuation to Base of both surgical and medical cases.

Three types of work were carried out at this level :

(a) *Surgical.* The primary operation on slightly wounded (Priority III cases). The holding of Priority I and II cases not fit to move. Some overflow surgery is also done on such cases.

(b) *Surgical.* The delayed primary suture operation on slightly wounded Priority III cases. This is performed between the third and fifth day after wounding.

(c) *Medical.* Holding and treating short-term sick.

The last two functions are most important in saving man-power for the Army.

B. The F.D.S. has assumed the chief function of the C.C.S., which now appears redundant as a separate unit. The 200-bed hospital has a very limited capacity and was not constructed for expansion. Undoubtedly more holding capacity is required at this level. It is suggested that a unit combining the main features of the C.C.S. and the 200-bed hospital, and capable of expansion, could easily be devised by modifying the present 200-bed hospital thus :

- (i) A basic field section (100 beds) containing surgical equipment and beds. This would carry out the surgery as in (a) above.
- (ii) A hospital section (100 beds) containing the remaining beds and equipment, including X-ray and laboratory equipment. This, combined with the field section, would carry out the work as given in (b) and (c) above.

The basic equipment—e.g. cooking, lighting, etc.—should be such that two 100-bed expansions could be attached to it. Each of the above sections should be transportable on a lift of say 30–40 lorries G.S. 3-ton. The attachment of the expansions would give up to 400 beds capacity. The field section could, when required, act as a surgical

centre, especially for Priority III cases, and would later be joined by the hospital section, and later still, if the site and circumstances were suitable, by one or two expansions. The suggested name for such a unit is 'field hospital'.

A scale of one such field hospital per division in an Army appears reasonable. Expansions on a scale of one per field hospital would be sufficient.

The implementation of the above proposals would reduce medical units in the field to three only :

- A. Field ambulance
- B. Field dressing station
- C. Field Hospital

There would be only one establishment for each.

4. EVACUATION AND TACTICAL USE OF UNITS

A. *The Use of F.D.S. and C.C.S. in Battle*

The method of dealing with pockets of seriously and immovable wounded is a serious problem in battle, and if not properly handled can cause great confusion and loss of medical potential. It is certain that the way not to deal with the problem is to leave a portion of a F.D.S. behind or to split up a C.C.S. into pockets to look after these cases. These wounded all require very careful nursing and skilled medical attention as well as surgery. Therefore the ideal unit to take over a pocket of severely wounded left by a F.D.S. A.S.C. is a C.C.S. This unit has a medical specialist and an X-ray, both of which are essential for the proper treatment of such cases. In addition, the C.C.S. gives additional holding capacity. This capacity should be used for Priority III surgical cases so that these cases have their primary operation as early as possible. Should the establishment of field hospitals described above be approved, then these units would deal equally efficiently with pockets of wounded.

The ideal surgical plan for a Corps is :

- F.D.S.—3 (A, B, C)
- C.C.S.—2 (X, Y)

The battle opens with F.D.Ss. 'A' and 'B' forming A.S.Cs. with F.D.S. 'C' in reserve. C.C.S. 'X' is also in reserve and C.C.S. 'Y' alerted to close at an early date. After forty-eight to seventy-two hours 'A' and 'B' F.D.Ss. will be full (60 cases); 'X' C.C.S. will then take over from 'A' F.D.S., which will go forward. 'C' F.D.S. will also now go forward; there will thus again be two advanced surgical centres forward. Later (twenty-four to forty-eight hours) 'Y' C.C.S. will take over from 'B' F.D.S., which will go into reserve and await call forward. 'A' F.D.S. will next be relieved, and so on. The theory is that—1. a F.D.S. will always

be waiting in reserve; 2. a C.C.S. will always take over the pocket of badly wounded from a F.D.S.

This was carried out by V Corps in the final battle and worked most smoothly.

B. *Air Evacuation*

One of the most striking lessons of the Italian campaign was the value of adequate air evacuation. It was found that air evacuation had a much less harmful effect on wounded men than motor ambulance journeys of the same duration. It was also found that the majority of wounds (chest cases excepted) stood air travel much better than had been expected.

The chief value of air evacuation is in the case of severely or moderately wounded men (surgical Priorities I and II) who are not precluded from evacuation by the nature of their wounds—e.g. abdominal. These cases can be transferred directly after the primary operation in the advanced surgical centre directly to the base hospital, where the secondary suture is performed and the cases treated to a conclusion.

Prior to air evacuation it was generally found that it was impossible to get base hospitals sufficiently near to avoid a long, complicated and trying journey to reach them; thus in many cases the secondary suture had to be performed later than the optimum time, or, since there was insufficient holding capacity in the more forward hospitals performing secondary suture, cases had to be transferred to the base before the sutures could be removed, thus leading to complications and sepsis.

Air evacuation avoids these pitfalls and allows the secondary operation to be performed at the proper time at the base hospital. In the last battle 2,473 cases were evacuated by air to base hospitals, the majority direct from the A.S.Cs. The surgical results in these cases were infinitely better than those which had been evacuated by ambulance, rail and sea. Air evacuation should be regarded as a normal and essential part of any medical operational plan. Air evacuation, however, will never be satisfactory until the Army Medical Services possess their own medical ambulance aircraft. (*See R.A.F. Vol. I, Chapter 10.*)

C. *Traumatic Effect of Ambulance Journeys*

It has been proved conclusively during the campaign that an ambulance journey has a very harmful effect on the wounded man, however carefully the vehicle may be driven. The longer the journey and the worse the roads the more harmful the effect. It is only recently that this now obvious fact has been universally recognised. Experience has shown that the following types of case travel very badly:

(a) Wounds which have been sutured. It has been learnt that wounds should never be stitched at the primary operation. Patients with sutured

wounds should not be evacuated but should remain in hospital until the stitches are removed. Sutures plus evacuation mean sepsis.

(b) Abdominal cases. It was well recognised that it was dangerous to evacuate abdominal cases before the tenth to twelfth post-operative day. It was also discovered that even after this time if the skin wound was septic complications were very liable to develop if the patient was evacuated. Such cases travel badly and should be held until the wound is completely healed.

(c) Extensive burn cases. Experience showed that it was not safe to move such cases after forty-eight hours; they should be evacuated before that time or held. Burn cases after forty-eight hours travel very badly indeed.

(d) Wounds of the chest. Such cases are also seriously affected by ambulance journeys. It was learnt that it was best to keep such cases in forward A.S.Cs. until the fourth post-operative day.

II. PROFESSIONAL

I. SURGERY

The lessons learned and the advances made in the treatment of wounds in the field and during transit from the field to base and special hospitals are fully dealt with in Chapter 1 of the Surgical Volume of this series by Sir Arthur Porritt and Sir Gordon Gordon-Taylor. The lessons learnt from experience of blood transfusion in the European battlefields are dealt with in Chapter 2.

2. SPECIALIST DEPARTMENTS

A. Radiology

During the final battle, radiography in the A.S.C. with the F.D.S. was fully tried. At first there was considerable dubiety about its usefulness in these centres, but the following lessons were learnt:

(a) Experienced surgeons do not require radiographs prior to operation and routine X-raying wounded men causes unnecessary delay and hardship to the wounded without any advantage in most cases. It is only in special cases such as the location of a foreign body in the abdomen that radiography is of value in the early stages of surgical intervention.

(b) Later, about the third or fourth day after wounding, X-rays were found to be of the greatest value, especially with regard to:

- (i) wounds of the chest;
- (ii) cases which for some unknown reason failed to make a good recovery.

By means of radiography, chest complications were often assessed and controlled and the cause of a patient not responding to treatment was often discovered. X-rays in a F.D.S. thus proved to be of more use to the physician than to the surgeon. Two mobile X-ray sets mounted on

a jeep and trailer per corps are suggested; one radiographer per set would be required.

B. *Ophthalmology*

The ophthalmic section acting with corps on a scale of one per corps proved of the greatest value. It would appear to be fitting that the W.E. of this unit should be regularised and that it should cease to be regarded as belonging to a general hospital with which it has no connexion.

C. *Dermatology*

It is considered that a dermatology specialist or graded dermatologist should always be available in Army Area. It was learnt that there is a good deal of unintelligent treatment of skin cases in forward areas leading to chronicity of the disease with loss of man-power. A dermatologist going round in Army Area looking at skin cases and advising on their treatment would be of definite value.

D. *E.N.T.*

In a similar manner, one E.N.T. specialist should be available in Army, not for the purpose of carrying out major E.N.T. operations but to advise on the treatment and disposal of the more common E.N.T. conditions. He would be especially useful in static periods when he would always be extremely busy. He should have independent transport.

E. *Venereal Disease*

The V.D. treatment teams definitely proved their value and were quite essential on the scale of one per corps and one for the army.

F. *Psychiatry*

The corps psychiatric teams and the corps psychiatrist proved most useful.

3. MOBILE MEDICAL UNITS

These units were used for the first time in the final battle and more experience is required. They proved of great value in taking over the medical care of severely wounded with complications in A.S.Cs. (F.D.S.). If C.C.Ss. were abolished they would be most valuable in corps areas.

Generally, the main lesson regarding specialists in an army is that mobile teams, in some cases merely an officer with an orderly, provide the best solution to the difficult problem of providing specialist advice and treatment in field units.

4. DENTAL SERVICE

The most important lesson learnt in this service was the value of mobile dental units. These proved of much greater service in divisions than the dental officers attached to field ambulances. These small units

could be quickly transferred from one location to another and could be pooled together easily to form a dental centre.

It is suggested that the dental officers should be withdrawn from field ambulances and that M.D.U.s. to the scale of four per division be substituted instead. A field dental laboratory was used in corps areas on a basis of one per corps, and this proved most successful as regards the supply of dentures. It is recommended that this should be a permanent addition to corps troops establishment. The O.C. also acts as D.A.D.D.S. to the D.D.M.S. corps and is most useful in this capacity. No alteration was considered necessary in other dental establishments.

5. ADVANCED DEPOT MEDICAL STORES ; LIGHT SECTION

It was found to be essential that there should be a mobile element of this unit to meet the needs of divisional medical units when the L. of C. lengthens in a rapid advance. This would involve the addition of three 3-ton lorries G.S. 4 × 2 and six O.R.s., including three drivers R.A.S.C. All corps agreed on the necessity of this.

III. HYGIENE

One of the most important hygiene lessons of the campaign was that the hygiene organisation of a division and corps was not adaptable to conditions of mobile war, was inefficient in practice and required revision.

I. DIVISIONAL FIELD HYGIENE SECTIONS

Owing to frequent moves the workshops section operates only intermittently and may sometimes be quite idle for weeks. The number of tradesmen are also too few to deal with any real construction problems. Briefly, there is a definite waste of valuable technical personnel in a divisional field hygiene section. Secondly, the sanitary inspectors are generally too busy with their normal duties to be available to run courses of instruction, except of a very elementary nature; yet good hygiene instructional courses are required on a divisional and corps level.

A large portion of the time of the O.C. hygiene section is taken up in the domestic supervision and administration of his unit, rather than on purely hygiene duties. The O.C. hygiene section does not in fact carry out his true function of 'Hygiene Adviser to A.D.M.S. Division'. He is often located far from divisional H.Q. and is quite out of touch with the hygiene work, statistics and correspondence which goes through the office of the A.D.M.S. and is frequently unavailable when his advice is most needed.

The function of the divisional hygiene staff should be purely inspectorial and advisory. This function should be integrated with the administrative staff functions of the A.D.M.S. office.

The remedies proposed are :

(a) O.C. Hygiene Section should be a staff officer at divisional H.Q. as D.A.D.H. or S.O.2(H.), in the same way as the A.D.H. at a corps H.Q.

(b) The sanitary inspector N.C.Os. of a field hygiene section should be absorbed into a medical divisional H.Q. attached to divisional H.Q., similar to the H.Q. of other services such as R.E.M.E., R.A.S.C., etc. The divisional field hygiene section would thus cease to exist as an independent unit.

(c) Workshops and instructional facilities should be concentrated at corps level and a corps field hygiene company formed with the provision of these facilities as its main object.

2. MALARIA CONTROL

A valuable lesson of the campaign was that anti-malaria control in an army should be at army level. The Eighth Army Malaria Control Company was an unqualified success and a great improvement on the system of separate A.M.C.U.s. under command of lower formations. By the new organisation it was possible to concentrate anti-malaria work effectively in the worst areas and employ the whole hygiene potential where it was most required. It proved to be easier to make a co-ordinated plan for malaria control over a wide area. The system adopted in placing the flysol and D.D.T. spraying detachments under the immediate control of the malaria field laboratory was very successful.

It was found that a malaria control company and a malaria field laboratory must work in the closest co-operation if the best results are to be obtained, and that they may, in fact, be regarded as being portions of one unit.

In Appendix XXIV, a lucid and concise account is given of the lessons learnt in the control of malaria during the course of the campaign in Sicily and Italy. It shows that the plans made before the campaign to combat the hazard of malaria, though sound enough in theory, were inadequate and ill-conceived in many respects. It records how the difficulties met with in mobile warfare in a highly malarious zone were overcome and how, as the result of experience, a highly efficient organisation was brought into being, with the result that the incidence of malaria was reduced to a very low figure and ceased to be a menace to the success of the campaign.

3. CESSPIT EMPTIER

A minor but important practical lesson of the campaign was the necessity of these machines in the rear areas of a European theatre. One per corps and two per army would be of the greatest service. Two such improvised machines had to be constructed in Eighth Army and were invaluable.

IV. SUMMARY

The main lessons of the campaign may be summarised as follows :

1. The divisional medical services require reorganisation on a less extravagant basis. The divisional field ambulances are too large and too numerous; there should be only one type of field ambulance. The A.D.M.S. office and the divisional field hygiene section should be combined in one attached medical divisional H.Q.

2. Medical Units—Army Area. More holding capacity is required in the army area. The C.C.S. has become redundant and the 200-bed general hospital could be modified to assume the function of the old C.C.S. and a hospital and give increased holding capacity.

3. Tactical. In the handling of medical units concentration of force should be the aim. Splitting units inevitably leads to loss of function and inefficiency.

4. Evacuation. Air evacuation has now been proved to be the most efficient means of evacuation between army area and base. All motor ambulance transport should be four-wheel-drive.

5. Hygiene. Hygiene organisation at division and corps level requires revision. A corps field hygiene company should be formed.

6. Malaria control in an Army should be at Army level. The control of malaria in a malarious battle area is now recognised as one of the most important duties of an Army Commander. Without an efficient organisation a campaign that could have been brought to a successful conclusion may end in defeat.

APPENDIX XXIV

MALARIA CONTROL IN MOBILE WARFARE. ITALIAN CAMPAIGN 1943-45 *

When it became possible to protect an army in the field against the great pestilences, one great hazard remained—malaria. When, during the war years, the Allied Armies congregated in the countries of the Middle East, memories of 1914-18 awakened. It was remembered that in Macedonia in 1918, for example, the incidence of malaria among the troops there was 460/1,000/annum, there being no fewer than 59,087 cases, more than enough to embarrass operational planning.

From that campaign much was learnt. In the Official Medical History of that war, the observation is made that 'it would seem that a properly carried out campaign of protection against the mosquito would have reduced the incidence of malaria more than the unavoidably imperfect and partial anti-larval work carried out in Macedonia'. The difficulty at that time was that no practical means of destroying the adult mosquito population of an area existed. This was the main reason why then, and during the inter-war years,

* 'Malaria Control in Mobile Warfare. Italian Campaign 1943-45'. Lt-Col. A. W. S. Thompson, A.D.H. Eighth Army. *Journ. R.A.M.C.*, Vol. 86.

most emphasis in training and in teaching was placed upon measures for the destruction of the larva.

In so far as Eighth Army was concerned, Sicily was the first rendezvous with malaria, and for this appointment Eighth Army was ill-prepared. The actual instructions concerning the hazard that were issued were sound enough. Reliance was to be placed upon mepacrine, Mark II protective cream, clothing precautions, nets and sandfly-proof bivouacs and flysol spraying. But in retrospect it can be seen that the troops did not, and often could not, act upon the advice given. They did not, or could not, exchange shorts for slacks at sundown; they did not, or could not, observe the rules concerning the application of the repellent cream, the use of nets and bivouacs and the selection of camp sites. Owing to a sequence of muddles and mishaps Canadian 1st Division, in England awaiting embarkation, remained almost completely unprepared and untrained in anti-malaria measures. Landing in Sicily it was, in so far as its enemy the mosquito was concerned, practically unarmed and defenceless. Instead of Mark II the older Mark I cream was issued to XIII Corps and great numbers of those who used it were never persuaded to use any cream of any kind again. The mosquito net was not a personal issue; it was held on charge by units and was expected to arrive with the unit's transport; it commonly did not. One brigade was still without its nets a month after landing. The malaria control units and the malaria field laboratory were without their transport for the greater part of the campaign. So it was that the malaria maps that were made had lost most of their value before they were finished. The A.M.C.U.s. in Sicily were not a success. They were formed too late and their personnel was either untrained or wrongly trained. Invariably they were deficient either in respect of officers or transport. One of them got itself lost in Tunisia and never got to Sicily. They were wrongly employed, for the reason that their parent units had no clear idea of their purpose. When it was recognised that they should be pooled under one central control at Army, the action taken was of the nature of a compromise; of the two A.M.C.U.s. with a division, one was taken and the other left.

It has to be frankly acknowledged, that at the time of the campaign in Sicily the Army Medical Services had not the tools to do the job of protecting the troops against the hazard of malaria and that the troops were not aware of, or chose to disregard, the danger that beset them. Sicily must be included in the list of medical disasters.

The average incidence of malaria between July 23 and September 3, 1943, was equivalent to 275/1,000/annum, much lower than the 1918 Macedonian figure, it is true, and not high enough to disrupt military operations, but still most serious. The Sicilian harvest of malaria was of the order of 10,395 (7,138 malaria; 3,257 N.Y.D. Fever).

In Italy between September 4 and November 27 there were 15,547 admissions on account of malaria and N.Y.D. Fever, and of these at least 8,000 were due to infection in Sicily.

These events were not unnoticed and strenuous efforts were made in the countries of the British Commonwealth and in the U.S.A. to place in the hands of the armies weapons of precision which could be used in this grim fight. Large-scale and intensive experiments were undertaken to discover the best

method of using mepacrine as a suppressor of malaria and power sprayers and sparklets were adapted for the dispersal of D.D.T. It came to be established that 3 per cent. D.D.T. in kerosene retained its lethal action for about two months after it had been sprayed on the walls of rooms and the like. It came to be thought that this weapon, properly used and in conjunction with the intelligent employment of personal protective measures, would make effective malaria control in forward areas possible for the first time in military history. The problem now passed to the field of production.

During the spring of 1944 these new weapons became available, in limited number and amounts, to Eighth Army in Italy, and for their utilisation a new anti-malaria organisation was brought into being. All the A.M.C.U.s. were placed under the control of Army. One of them became a malaria control depot, located near Army H.Q. This prepared and issued the D.D.T. solution and supplied labour and materials of every description—rations, pay, orders, survey reports and mail—to all A.M.C.U.s. by means of a despatch service which visited every one of them every second day. So it came about that the affairs of an A.M.C.U. were not affected by the moves of local units and formations. Another A.M.C.U. was organised as a forward spraying unit. Flysol power spraying teams, each consisting of a driver and two operators with a power sprayer mounted on a vehicle, a jeep for preference, were allocated on a divisional basis and covered the entire front. The teams operated from the field hygiene sections and sprayed all habitations on the axis of advance. A sanitary assistant of the field hygiene section supervised their work locally and the officer of the A.M.C.U. co-ordinated their activities and maintained close liaison with the divisional staffs.

The other A.M.C.U.s. were distributed on the basis of two to a division. They followed up the work of the flysol spraying teams, covering an area extending up to 3 km. on either side of the axis of advance. They worked under the immediate supervision of two officers of the mobile malaria laboratories, who could move them as necessary without prior reference to Army H.Q. As each dwelling was treated it was marked on the outside wall with the letters D.D.T., the number of the A.M.C.U. and the date, strange symbols which long outlasted the war and seemed to replace the even stranger ones that bedecked the same walls in the heyday of Fascism.

In April 1945, this organisation gave place to another. There came into being the malaria control company on a new establishment. The whole of the anti-malaria personnel could now be concentrated on that part or on those parts of the front where it could be used to the greatest advantage. It was no longer distributed among the divisions. The New Zealand and Polish A.M.C.U.s. remained outside the scheme and it could be observed that these, restricting their activities to their own divisional sectors, not infrequently expended energy and materials in non-malarious areas.

The Westinghouse Aerosol Bomb and the insecticidal sparklet did not reach Italy until the greatest need for them was past. Had they been available it is certain that the conquest of malaria would have been more complete and far more speedy, for their use would have enlisted the individual soldier in the adventure of eliminating the adult mosquito. The destruction of the larva must remain the responsibility of special units.

Sicily saw the employment of aircraft for the spraying of Paris green and D.D.T. from the air. It was used in the Lentini area. Then in Italy it was used on a small scale in the Pontine marshes, at Cassino, Lake Trasimene and on the canal systems about Perugia and Arezzo. For the 1945 fighting in the Lombardy Plain infinitely more ambitious schemes were hatched, for all the information available clearly indicated that the most highly malarious areas of Italy still lay ahead of the Allied Armies in the Ravenna Plain and in the valley of the Po.

Ravenna was not captured until the beginning of December 1944, and the malaria season was over before any considerable numbers of troops entered the danger zone. So it was that time became available for the making of plans and for the training of the troops.

A storage and loading depot was established on the airfield at Rimini. There were three large tanks with a total capacity of 9,000 gallons connected by a pipeline to a feed pipe near the runway. The D.D.T. solution was mixed by hand in 44-gallon drums, pumped into two small 300-gallon tanks where the solution was completed and run by gravity into the storage tanks. Paris green and diluent (powdered cement) were mixed in a machine constructed by a technician in a soup-powder factory at Cesena. It was then put up in stout half-hundredweight paper bags and loaded into the aircraft by hand. The depot was capable of dealing with 10,000 gallons of 5 per cent. D.D.T. solution and 20 tons of 25 per cent. Paris green weekly. (The strength of the Paris green was later reduced to 15 per cent. as this was found to be satisfactory.)

Spraying was started on March 18, working first along the main routes in the worst areas, with the object of destroying as many hibernating mosquitoes as possible.

In the first five weeks of the season American pilots in Boston and Stearman aircraft distributed 50,000 gallons of D.D.T. solution and 30 tons of the Paris green mixture.

Spraying by means of aircraft proved to be so simple that it was but inevitable that it should be misapplied. Thus in a report of A.D.H. Eighth Army, it is recorded that 'the distance from Rimini airfield to Monfalcone or Palmanova is about 130 miles as the Boston flies and the weather conditions in the area to be treated may be quite different from those on the airfield when the pilot takes off, particularly in this part of Italy which is notable for its localised rainstorms. On the morning of June 18, A.D.H. Eighth Army happened to be at Palmanova when a Boston came over and attempted to treat the moat with D.D.T. in oil. There was a strong east wind; the moat twists between high steep ramparts and on the side of the town which the pilot was attacking there are many wires which make low flying dangerous. The plane roared low down over the ramparts at about 200 miles an hour spewing a yellow cloud of oil on the wind, wheeled away, circled, roaring down again and so on in a series of spectacular dashes which must have thrilled the on-lookers; but to one of them it was a most depressing sight. On this occasion at least the pilot risked his life in a gallant but almost completely unsuccessful attempt to do what might have been done with perfect ease and accuracy from the ground. Enquiry elicited the information that O.C. Malaria Field Laboratory did not consider the moat at Palmanova suitable for air treatment but had been assured that the pilot was satisfied that he could do it.'

Manifestly it is very necessary to exercise much care in the selection of targets and not to sacrifice the thoroughness of spraying from the ground for the ease of spraying from the air. Furthermore, it is most desirable that the specialist malariologist shall become accustomed to surveying territory from the air.

Eighth Army's final attack was launched on April 9, and in twenty-three days the campaign in Italy was ended. The speed of the advance made it impossible for the spraying teams to keep pace with the forward troops. Nevertheless, the main routes were covered long before large-scale transmission could have commenced. Four United Kingdom detachments, each equivalent to two malaria control units, were employed on D.D.T. spraying. The Polish and New Zealand A.M.C.U.s. worked independently. It was found that one detachment, using knapsack and pressure (Four Oaks Kent type) and employing about a hundred labourers, could spray about sixty farms daily. Over 1,000 gallons of D.D.T. solution were used in the Army area every day. When the offensive began the flysol teams were unleashed and all were functioning before the end of April.

Immediately hostilities ceased it became possible to arrange for most formations to be sited outside the more malarious areas and to concentrate the spraying organisation on such malarious areas as had to be occupied. Aircraft larviciding operations commenced on May 15, and towards the end of this month all ground detachments were switched to anti-larval work. This combined attack was so successful that even in the extremely malarious coastal sector near the mouth of the Isonzo, where certain elements of XIII Corps had to remain, the mosquito population virtually disappeared and the malaria rate remained consistently low.

Though it is true that the final battle of this campaign was over before the malaria season was well under way, and though the system of personal protection was not tested, it is reasonable to assume that the extra-regimental spraying organisation, tested in this period of mobile operations, abundantly proved its worth. The exact value of disease preventive measures, when successful, is always difficult to assess. Nevertheless, the following figures are surely indicative of the instruments of protection that were employed :

A. At the beginning of the campaign the incidence in one particular week was about 4.10/1,000/annum.

In the week ending May 6, 1944 it was 150.62/1,000/annum.

In the week ending Aug. 12, ,, ,, ,, 146.21/1,000/annum.

In 1945 up to June the highest rate was 38.85/1,000/annum.

B. *Eighth Army*

		(Primary Malaria)	Wounded	Ratio
1943	3rd Quarter	12,532	6,415	2 : 1
	4th ,,	4,178	8,637	1 : 2.1
1944	1st ,,	901	3,500	1 : 3.9
	2nd ,,	3,037	15,516	1 : 5.1
	3rd ,,	3,288	19,975	1 : 6.1
	4th ,,	927	10,995	1 : 11.9
1945	1st ,,	365	3,679	1 : 10.1
	2nd ,,	650	6,210	1 : 10.4

C. May 5–June 23, 1945.

	<i>Austria</i> (<i>non-malarious</i>)	<i>Venezia Giulia</i> (<i>highly-malarious</i>)
	V Corps	XIII Corps
Malaria (fresh) . . .	111	121
Malaria (relapse) . . .	122	113
	233	234

In the middle of the period, V Corps discontinued mepacrine and the majority of its fresh cases were due to a break-through of previous infection. It is seen that a formation with the history of XIII Corps can reside in a highly malarious area in June without any increase in its malaria incidence over what it would have shown in a non-malarious country.

From the campaign in Italy it was learnt that :

- (a) The personnel of the A.M.C.U. should be above average in respect of general ability.
- (b) The first task of the A.M.C.U. when entering a malarious area is the destruction of the adult mosquito.
- (c) To persuade the individual soldier to use his repellent cream was one of the most difficult of tasks. In this campaign such persuasion was unavailing.
- (d) Propaganda emphasising the virtues of mepacrine was successful, but from it there tended to emerge the impression that this was the most important aspect of malaria control.
- (e) Posters had considerable value in the cultivation of the habits of personal protection, but they must avoid ugliness and lack of distinction; enthusiasm cannot compensate for these.
- (f) Health weeks, hygiene exhibitions organised by medical and education officers of formations during which malaria was given special attention can be very successful. To the very end of the campaign it was found that teaching about malaria, when attractively presented, was always well received.

From the campaign in Italy there emerged the firm knowledge that an army fighting under conditions similar to those that there obtained could be protected from malaria if :

- (a) Extra-regimental measures against the adult mosquito and against the mosquito larva are skilfully and adequately employed.
- (b) Discipline within the unit is focused on the mosquito.
- (c) The individual officer and O.R. knows the nature of the hazard and accepts as an item of his personal responsibility the task, even when supervision is absent, of avoiding the hazard.

The provision of an insecticide of great potency and the elaboration of satisfactory methods for its application on the ground and from the air, the provision of an effective repellent, the provision of a suppressive drug of proven worth and the elaboration of methods of administration whereby this drug could be used to the best advantage, meant that an army could henceforward and to a large extent control its man-power wastage on account of

malaria. This was the main outcome in the medical field of the experience in Italy. Under conditions such as those that obtained there, the incidence of malaria in a force could be used as an index of the quality of generalship.

APPENDIX XXV

THE EMPLOYMENT OF A FIELD DRESSING STATION (865 F.D.S.)
JULY 1944-JUNE 1945

<i>Function</i>	<i>Location</i>	<i>Attached Units</i>	<i>Serving</i>
1. Closed	Perugia		
2. A.S.C.	Umbertide	30, 36 F.S.U.s. 10 F.T.U.	Indian 4th and 10th Divisions
3. „	S. of Arezzo	25, 30 F.S.U.s. 12 F.T.U.	Indian 4th and 10th Divisions 6th Armd. Division
4. „	N. of Arezzo	25, 30, 36 F.S.U.s. 10 F.T.U.	Indian 4th and 10th Divisions
5. „	Subbiano	30, 36 F.S.U.s. 10 F.T.U.	Indian 10th Division
6. M.D.S. (Sick) + M.I. Room	Subbiano		X Corps
M.D.S. (Sick) + M.I. Room	San Sepolcro		X Corps

July-September 1944

	<i>Admitted</i>	<i>Transferred</i>	<i>Evacuated</i>	<i>R.T.U.</i>	<i>Died</i>
Battle Cas.	476	62	375	-	42
Accidents	92	13	67	1	6
Sick	236	33	133	4	-
	<u>804</u>	<u>108</u>	<u>575</u>	<u>5</u>	<u>48</u>

7. C.R.S.	Soci	30 F.S.U. 10 F.T.U.	X Corps
8. „	Corciano		2 A.G.R.A.
9. „	Fabiano		2 A.G.R.A.

October-December 1944

	<i>Admitted</i>	<i>Transferred</i>	<i>Evacuated</i>	<i>R.T.U.</i>	<i>Died</i>
Battle Cas.	64	47	6	1	10
Accidents	33	13	16	4	-
Sick	285	17	126	128	-
	<u>382</u>	<u>77</u>	<u>148</u>	<u>133</u>	<u>10</u>

CHAPTER 7

THE RETURN TO GREECE

(i)

The Seizure and Loss of Cos and Leros September and October 1943

FOLLOWING the German conquest of Greece in 1941, M.E.C. prepared plans to secure certain of the islands in the Aegean for use as bases from which the Axis communications might be threatened. Towards the end of the campaign in Sicily, for example, preparations were made for an attack upon the island of Rhodes by Indian 8th Division. This had to be abandoned for the reason that the shipping and assault craft that were to be used were hurriedly despatched to India, there to be employed in an assault against Arakan. Tactical H.Q. III Corps, from the Lebanon, was brought to Egypt to engage in planning of this nature on behalf of M.E.F. and D.D.M.S. III Corps performed the duties of D.D.M.S. Force '292', the force that was to be employed in enterprises of this kind.

When Italy surrendered it was decided to strike swiftly with 234th Inf. Bde. which had formed part of the Malta garrison (as 2nd Malta Bde.), a detachment of the S.A.S. Regt., including L.R.D.G. units, and the Greek Sacred Heart Squadron, the only units available for this purpose at this time.

Reconnaissance revealed that Athens, Crete, Rhodes and Scarpanto were unsuitable as objectives, either because they were too strongly garrisoned by the Germans or else because the Italian military units there were not prepared to be co-operative. It was decided therefore to seize the islands of Cos, Leros, Samos, Simi, Stampalia and Ikaria to the north of Rhodes and Castel Rosso south of it. These were occupied by September 18 by detachments of the force and the airfield on Cos brought into use. On November 1 the control of operations in the Aegean passed from Force '292' to the newly created H.Q. Aegean Command.

The Germans reacted with their customary celerity. On October 3-4 an air and seaborne assault overwhelmed 1st D.L.I. on Cos. The garrison on Leros—H.Q. 234th Bde., 2nd R.I.F. and a company of 2nd R.W.K. was reinforced by 4th Buffs and 1st King's Own but it was impossible to maintain a long-range fighter air cover. On November 12 a combined assault from sky and sea by the Germans cut the island into two and the

garrison were forced to surrender on the 16th. The garrisons on the other islands, with the exception of that on Castel Rosso, were then withdrawn.

MEDICAL ARRANGEMENTS

At this time under command III Corps for employment with Force '292' (which had its own A.D.M.S. and D.A.D.M.S.) were:

- 161 Fd. Amb.
- 867 F.D.S.
- 21 Fd. Hyg. Sec.
- 12 and 15 F.S.U.s.
- 33 F.T.U.
- 2 Mal. Fd. Lab. detach.
- 2 A.M.C.U.
- 30 (Ind.) Fd. Amb. detach.

Of these at the time of the German assaults only the field ambulance and the F.S.U.s. were on Cos and Leros. A dental officer and a dental orderly were associated with the field ambulance.

161 Fd. Amb. joined 234th Bde. at Haifa on September 16, 1943, and two days later detachments of the unit proceeded to Cos, Leros and Samos. To Cos went H.Q. Coy. and one officer and ten O.Rs. of 'A' Coy. A detachment, one officer and ten O.Rs. of 'A' Coy., went to Samos. To Leros with brigade headquarters went the officer commanding the unit and 'B' Coy. The remainder of the unit remained at Haifa. On November 3, these went to Leros and 28 proceeded to Samos on the 5th. 12 F.S.U. went to Cos, 15 F.S.U. to Leros. The dental officer and orderly went to Leros. Later the Q.M. and a sergt. dispenser were transferred from Cos to Leros, there to establish an Aegean Command store to serve all the occupied islands. No transport was taken to the islands.

On Leros a C.R.S. was established in a private house in Alinda that had been used by the Italians for a similar purpose. Other adjoining empty houses were taken over and accommodation for 70 patients thus provided (30 beds, the rest stretchers). At Portolago a dental centre, medical store and M.I. room were established in the Italian naval hospital. An Italian ambulance car was taken over.

From September 21–November 11, 273 patients were admitted to the C.R.S. Of these 85 were battle casualties (R.N. 44, Army 41). There were 4 deaths (burns, fractured skull, penetrating wound of the abdomen and traumatic amputation of the right arm). The main diseases affecting the troops were sandfly fever, dysentery, bronchitis and I.A.T. There were 12 cases of gonorrhoea and a few of soft sore. Evacuation was by sea to Egypt, mainly by destroyer. On the single occasion when a seaplane was sent to Leros to bring away a seriously ill casualty, it was shot down.

On Cos a school about eight miles from the town of Cos was taken over and a C.R.S. (50 stretchers) opened. In another school in Cos itself, a dental centre, M.I. room and an air evacuation centre (20 stretchers) were established. Near Antimachia airfield a dressing station was set up. Evacuation from Cos was by air to Egypt.

On Samos a C.R.S. was established in an unfinished and unfurnished civil hospital at Vathi that was being used as a barracks by the Italians. To furnish this C.R.S. proved to be difficult, but late in October a Greek battalion arrived by parachute and many were injured when landing. They were admitted to the C.R.S., which was promptly furnished with beds, tables, chairs, etc., by the Greek civilian population. Local Greek nurses came to help. There was no evacuation from Samos during the period of occupation. Had it been necessary arrangements were made whereby it would have been by sea to Turkey.

When Cos was invaded by the Germans on October 3, the C.R.S. was overrun almost at once. The Germans did not interfere with its work and German casualties were brought to it. Two or three days later the British casualties and R.A.M.C. personnel, with the exception of 12 F.S.U. and such casualties as were too ill to be moved, were evacuated by air. Later the F.S.U. was employed in the treatment of German casualties from Leros.

When Leros was invaded at dawn on November 12, the C.R.S. was moved to caves at the foot of Mount Clidi, according to plan. A medical officer and 12 O.Rs. R.A.M.C. were despatched to brigade headquarters on Mount Meraviglia for attachment to units and detachments without medical personnel of their own. The R.A.P. of 4th Buffs was about a mile from the C.R.S., that of 2nd R.I.F. was near Mount Meraviglia, that of 1st King's Own near Portolago (to it 4 O.Rs. of the field ambulance were attached) and that of the S.A.S. near Lero.

By noon the Germans were in control of the road from Alinda to Mount Meraviglia and evacuation from the south of the island to the C.R.S. at the foot of Mount Clidi became impossible. Casualties in the south had to be held in the R.A.Ps. or taken to Portolago.

The garrison surrendered at about 1700 hours on November 16. The medical detachments were then holding some 300 casualties, including 55 Germans and 15 Italians. Of these about 200 were in the C.R.S. in the caves, 70-80 in the Italian naval hospital at Portolago and the rest in the houses at Alinda previously occupied by the C.R.S. which had been used as a dressing station by the Germans during the battle. The F.S.U. had to operate in the open for there were no lighting sets available. The dental officer functioned as a transfusion officer, being trained to do so.

As on Cos, the Germans did not interrupt the work of the field ambulance and F.S.U. The bulk of the German casualties were taken

by sea to Cos on the morning of the 17th. A few, the more serious, were flown to Athens. It was not until November 29 that the British casualties were evacuated. The officer commanding the field ambulance had called the attention of the Germans to the urgency of getting the more seriously wounded casualties to a hospital and his plea had been sympathetically received. On the 29th the casualties and R.A.M.C. personnel, except for 66 seriously ill and 63 medical staff, left Leros by troopship for Athens. The remainder sailed on December 2 in a hospital ship for Crete. There more Germans and Italian casualties were embarked and the hospital ship *Gradisca*, now with 1,000 patients aboard, sailed for Trieste. On the evening of the 8th she was hailed by a British destroyer which escorted her to Brindisi. There, before she continued her journey, all British and Italian personnel were taken off.

It was possible for the members of the British Army Medical Services to compare their organisation, equipment and functioning with their German equivalents. It seemed to them that the German medical arrangements in connexion with this operation were distinctly primitive and that medical intervention was restricted to elementary first aid, that, indeed, the Germans were depending on the early capture and utilisation of the British medical facilities.

(ii)

The Return to Greece—Operation ‘Manna’ October 1944 to May 1945

EVENTS PRIOR TO THE RETURN

When Greece was occupied by Axis forces in May 1941, the King of Greece and his government went into exile. During the winter of 1941–1942 the Greek people suffered severely from famine. Resistance to the occupying forces grew in volume and ultimately resulted in the formation of the National Liberation Front (E.A.M.) with its People’s Liberation Army (E.L.A.S.). But soon discord developed within this resistance movement to give rise to two conflicting parties, the communist-controlled E.L.A.S. and the republican, anti-communist E.D.E.S. A British mission made its way into Greece but found it impossible to persuade the leaders of these parties to sink their differences and to co-ordinate the activities of the guerrilla forces, directing them against the occupying forces. However, on the eve of the battle of Alamein, members of this mission, with the aid of the guerrillas, destroyed a viaduct on the main railway line to Athens and Greek agents carried out daring sabotage operations against Axis shipping off Piraeus. These successes encouraged M.E.C. to send further British

parties with supplies of arms and explosives to Greece. At the time of the invasion of Sicily these parties, with Greek assistance, carried out a number of sabotage operations. Two German divisions, which might have fought in Sicily, were sent to Greece. This was the last contribution which this Greek resistance movement made to the conduct of the war for from this time onwards the different factions, E.L.A.S., E.D.E.S. and the royalists grouped in Cairo and London, concerned themselves with matters relating to the political control of the country when the Germans and Italians departed.

When Italy surrendered in September 1943, E.L.A.S., far stronger than E.D.E.S., was able to acquire most of the Italian equipment in Greece. E.A.M. now had the means of seizing power when the Germans withdrew. In March 1944, E.A.M. established a government, a Political Committee of National Liberation, which constituted a direct challenge to the King and to the Greek Government in Cairo. On April 4, a number of Greek army and naval units serving with M.E.F. mutinied to cause much anxiety and not a little trouble before they were persuaded by a display of superior force to lay down their arms. The King of Greece went to Cairo from London and issued a proclamation stating that a new government composed largely of Greeks from within Greece would be formed. On May 24 this new administration was set up and an agreement was reached whereby in Greece a united military organisation would be established.

These events necessarily commanded the attention of the British Government. In M.E.C. plans had been drawn up for the administration of the Balkan countries after their liberation. In February 1943, an Allied Territories (Balkans) Committee was established to consider the steps necessary on military grounds to ensure efficiency of the civil administration in these countries after their liberation. By October 1943, as a consequence of the rapidity of the Russian advance in south-east Europe, it was recognised that certain of these plans might have to be put into operation earlier than was first expected and so, on October 12, a British Military Liaison Headquarters (Greece) was established to maintain contact with the Greek authorities and to plan for the relief of the country when this was evacuated by the Germans. In March 1944, when E.A.M. set up its Political Committee of National Liberation, the British Government decided that a British force should be prepared to enter Greece to ensure that ordered constitutional government should there be established. H.Q. III Corps became H.Q. Force '140'.

On September 2, 1944, General Scobie was appointed Commander, Land Forces Greece, and 'Arkforce', consisting of 2nd Independent Para. Bde. (in Italy), 23rd Armd. Bde. (in Egypt), organised on an infantry basis, and Force and administrative troops (in Egypt), were

earmarked for the return to Greece, Operation 'Manna'. The Greeks agreed to end all past rivalries and to place all the guerrilla forces under General Scobie who was nominated G.O.C. Forces in Greece by the new Greek Government.

On October 4, British paratroops seized Patras in the Peloponnesus and worked their way along the shore to Corinth. On the 12th information that the Germans were evacuating Greece was received and 2nd Indep. Para. Bde., by air, and 23rd Armd. Bde., by sea, thereupon proceeded to Athens. H.Q. III Corps, now designated H.Q. Land Forces and Military Liaison, Greece (L.F.M.L.G.) and the Greek Government immediately followed. One of the first actions of the government was to proclaim that all guerrilla forces were to be disbanded forthwith.

By November 12, all German troops had passed beyond the borders of Greece but with them war and the fear of war did not depart. The E.A.M. members of the government, holding that this disbandment of the guerrillas was a deliberate attack upon their party, resigned and the united front collapsed. Strikes and demonstrations multiplied as the general situation deteriorated. Indian 4th Division, then resting in the area of Perugia, Italy, was placed at the disposal of G.O.C. Forces in Greece and its 7th Inf. Bde. moved to Taranto prior to sailing for Salonika, which was reached on November 11. Its 11th Inf. Bde. reached Patras on November 25 and 139th Inf. Bde. of 46th Division, also in Italy, was flown to Athens. Ind. 5th Inf. Bde. followed, to reach Piraeus on December 9. Greece was divided into three districts—(1) Attica and south-west Peloponnesus, (2) Patras and Western Greece, and (3) Macedonia and Eastern Greece, and the ports of Kalamai, Patras, Preveza, Salonika, Volos, Kavalla and Heraklion were occupied for the purpose of introducing relief supplies into the country.

On December 3, the police in Athens found it necessary to open fire upon an E.L.A.S. demonstration. On the following day E.L.A.S. bands attacked the police stations in Athens and Piraeus. By this time it had become clear that the authority of the national government could be maintained only by active intervention of the British force. On December 5, E.L.A.S. bands fired on British detachments in Athens and gained control of most of the capital. 4th Division, then *en route* from Italy to Egypt, was diverted to Athens on December 12 and 46th Division was warned to be ready to follow.

The medical units associated with 'Arkforce' were :

97 B.G.H. (600 beds)

150 Lt. Fd. Amb. (23rd Armd. Bde.)

127 Para. Fd. Amb. (2nd Indep. Para. Bde.)

The field ambulances accompanied their brigades. 150 Lt. Fd. Amb. established a C.R.S. in central Athens capable of holding 200 patients.

The senior medical officer of 23rd Armd. Bde. assumed medical administrative control in 'Arkforce' pending the arrival on D-day+2 of D.D.M.S. Force. 127 Para. Fd. Amb. opened in the University of Athens. 97 B.G.H. arrived at Piraeus in H.S. *Maine* on D-day+2. The hospital ship (270 beds) provided hospital cover pending the opening ashore of 97 B.G.H. on D-day+11. Until the hospital ship arrived evacuation was by air to Italy.

21 Fd. Hyg. Sec. was attached to H.Q., L.F.& M.L., Greece. With 139th Inf. Bde. of 46th Division to Athens came 183 Fd. Amb. The medical units of Indian 4th Division were 17, 26 and 32 (Ind.) Fd. Ambs. and 15 (Ind.) Fd. Hyg. Sec. Other Indian medical units earmarked for Greece were 2 (Ind.) C.C.S. and 16 C.G.H., then at Canello. 17 (Ind.) Fd. Amb. embarked with Ind. 7th Inf. Bde. and established its M.D.S. in a school in Salonika. To it a surgical team was attached. A detachment of this medical unit proceeded to Veroia to serve troops in that area. Evacuation was from the M.D.S. to H.S. *Maine*. On November 21, 53 B.G.H., to which was attached a detachment from 16 C.G.H., opened in Salonika. Detachments of the field ambulance were sent to Volos and Cawla to which areas troops had been despatched. Accompanying Ind. 11th Inf. Bde. to Patras in the Peloponnesus went 32 (Ind.) Fd. Amb. A school was taken over and the field ambulance opened a 100-bed M.D.S. on November 28. Detachments of the unit were so widely distributed throughout the northern part of the Peloponnesus and in Aitolia, at Pirgos, Levakos, Mesolongion, Zante, Preveza and Arta, that with the M.D.S. there remained only the commanding officer and one other medical officer. Evacuation of the M.D.S. to Athens was by road and air.

THE OUTBREAK OF HOSTILITIES

(1) THE ATHENS AREA

On December 5, the commander of 23rd Armd. Bde. was instructed to take offensive action against E.L.A.S. in the Athens area. For this purpose there were then available 23rd Armd., 2nd Indep. Para., 139th Infantry and Greek 3rd Mountain Brigades. But it at once became evident that this force was not strong enough to overcome the very extensive opposition that had developed. The operational staff of Main H.Q. X Corps, from Italy, assumed responsibility for operations against E.L.A.S., employing troops under the administrative command of III Corps, reinforced later by 46th Division and K.D.G. In February 1945, X Corps troops returned to Italy. Ind. 5th Inf. Bde., arriving on the 9th, was at once committed in the Piraeus area. The situation in the Athens area assumed such a critical complexion that the forces at Salonika and Patras were instructed to organise these areas as bases

which could serve as springboards should it become necessary to give up the Athens area.

On December 11, it was decided to clear the Faliron-Piraeus area of E.L.A.S. forces. To this task 139th and Ind. 5th Inf. Bdes. were assigned.

The Piraeus peninsula is about two miles long from its southwestern tip to the northern end, which is known as the Akton peninsula. Lofos Kastella, a hill 300 ft. high, overlooks the main communications between the harbour and the mainland. The harbour lies between the mainland and the Akton peninsula and is dominated by high ground on the north and west. E.L.A.S. controlled all the exits from the town of Piraeus and occupied all the features that dominated the harbour.

Ind. 5th Inf. Bde. cordoned off the main approach road to Piraeus on the night of December 11/12 and on the 12th cleared the cordoned area. Then on the 14th, the brigade advanced, to encounter stubborn resistance. This being overcome, the road to Yeoryion was reached. During the next two days E.L.A.S. units thrice counter-attacked but were repulsed.

Meanwhile 139th Inf. Bde. had secured the Akton peninsula and so opened the road from Piraeus to Athens.

Ind. 5th Inf. Bde. then set about the difficult task of clearing the town of Piraeus. This was done by means of an amphibious operation whereby the brigade landed on the north side of the harbour on December 21 and 22.

4th Division (with 10, 12 and 159 Fd. Ambs. and 4 Fd. Hyg. Sec.) was committed on the right of Ind. 5th Inf. Bde., which attempted on December 23 to link up with this division. But the brigade was checked by E.L.A.S. resistance on a small hill feature which was known as the Powder Store. This hill was captured, however, on the 24th and the brigade thereafter moved to the relief of 64th Lt. Bty. which was beleaguered in the Power Station. Bitter and long-continued fighting ensued, but by Christmas Day the road to the Power Station had been opened and the brigade advanced to cut the Leoferos-Salaminos road. 4th Division then advanced northwards from Athens as E.L.A.S. forces withdrew. A truce was signed and hostilities ceased at 0001 hours on January 15, 1945.

E.L.A.S. troops undertook to withdraw on the mainland from the provinces of Attica, Boeotia, Phthiotis and Magnesia, north of an agreed truce line running from the east coast at Cape Kavos Koutsouonbou through Farsala, Lamia, Amfissa to the Gulf of Corinth. In the Peloponnesus they were to withdraw south of the line Pirgos-Argos, and in Salonika to a perimeter of 30 km. from the town.

MEDICAL COVER

26 (Ind.) Fd. Amb., less a detachment left in the staging area at Taranto, reached Piraeus on December 11. It was accommodated in a

was unable to find suitable accommodation. Indeed it was not until January 6 that the C.C.S. was able to open with 100 beds on a site on the Piraeus–Athens road. On January 11 the M.D.S. closed and the field ambulance prepared to move with the brigade out of the area.

10, 12 and 159 Fd. Ambs. of 4th Division during these events were open in Athens, evacuation being to 127 Para. Fd. Amb. and thence to H.S. *Maine*.

On December 15, 97 B.G.H. and the medical store, three miles outside the British lines, were isolated by E.L.A.S. troops. Thereafter, until January 5 when evacuation to it became possible again, surgical facilities were provided by 127 Para. Fd. Amb. (central Athens), H.S. *Maine* (Piraeus) and L.C.C.S. 253 (Faliron). H.S. *Maine* was cleared at six-day intervals by hospital ships from Italy.

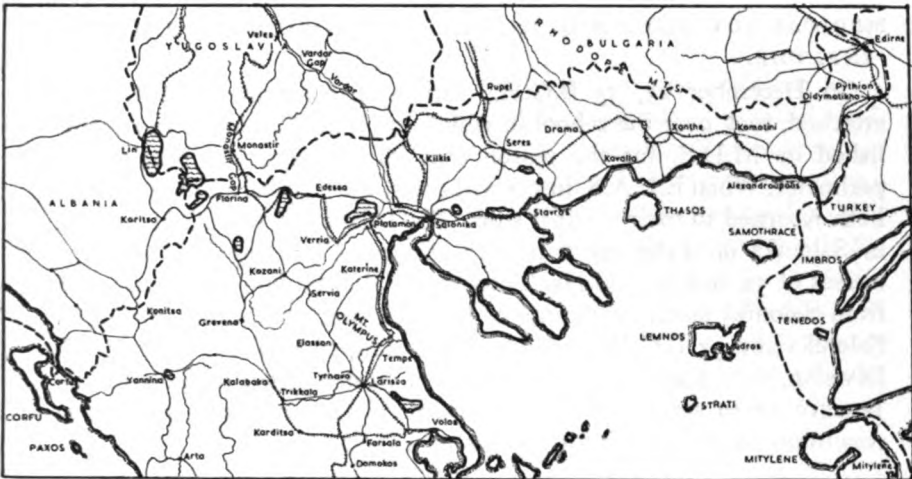


FIG. 134. Northern Greece.

On January 9, 72 B.G.H. from Italy opened with 100 beds at Kalamaki, on the coast near Athens, and thereafter rapidly increased its holding capacity. 10th Inf. Bde. moved to Thebes and with it went H.Q. elements, a company, a surgeon and an O.R.A. from 10 Fd. Amb. to establish a surgical centre with facilities for holding up to 12 cases. At the same time 12th Inf. Bde. was sent to Levadia and with it went 12 Fd. Amb., less one company, there to establish a C.R.S.

To centralise the treatment of venereal diseases a V.D. wing of 200 beds was formed in 97 B.G.H. at the beginning of March. As conditions became more settled and as the hospital accommodation grew the hospital expectancy standard for evacuation was increased to thirty days or over. For the smaller numbers to be evacuated a regular air service from Athens was instituted and no further hospital ships were

requested. Psychotic cases were evacuated by troopship as opportunity offered.

(2) SALONIKA

The area allotted to Indian 4th Division, less two brigades, was very extensive, including Salonika and Macedonia. Detachments of Ind. 7th Bde. were sent to Kilkis, Seres, Drama, Kavalla, Volos and Larissa.

On December 2, fighting broke out between the rival guerrilla parties at Drama. On the 7th a general strike was declared in Salonika. As the situation progressively deteriorated the outlying detachments were withdrawn to Salonika and two defended perimeters around the city were constructed, manned by Ind. 7th Inf. Bde. and by divisional troops respectively. E.L.A.S. units moved out of the town to occupy positions outside which dominated all the exits, but no fighting occurred.

MEDICAL COVER FOR H.Q. INDIAN 4TH DIVISION AND IND. 7TH INF. BDE.

On December 23, 53 B.G.H., with a detachment of 16 C.G.H. attached, took over the school in which 17 (Ind.) Fd. Amb. had established its M.D.S. for the reason that its own site was outside the perimeter. When E.L.A.S. forces withdrew, the hospital and the M.D.S. both returned to their original sites. The balance of 16 C.G.H. arrived in Salonika on February 6 in H.S. *Empire Clyde* together with the nurses of 53 and 72 B.G.Hs. Those of 53 B.G.H. had been evacuated from Salonika at the beginning of the civil war. 16 C.G.H. opened in Salonika and 53 B.G.H. closed and was shipped to Volos to serve 4th Division, then based on this port. H.S. *Maine* sailed to Salonika on January 22 to act as a floating hospital. She now became surplus to requirements and so left for Piraeus on February 11.

(3) THE PELOPONNESUS

Ind. 11th Inf. Bde. reached Patras from Taranto on November 25, 1944. Patras had been occupied by commando units when the Germans withdrew from the Peloponnesus at the end of September. The brigade was charged with the following responsibilities: (i) to maintain law and order while the authority of local government was being restored and (ii) to secure any German or Italian troops and agents still in the area.

A detachment consisting of 125 officers and men of 3rd R.F.F.R. was despatched by sea from Patras to the Mesolongion area. The vessel struck a mine with a loss of 70 killed and 51 injured and of all equipment. A second detachment was then despatched only to meet the same fate, 13 being killed and 7 injured.

By December 11, the general situation had become so tense that the whole brigade was concentrated in Patras, which was virtually invested by E.L.A.S. forces. On January 9, 139th Bde. of 46th Division arrived in

Patras and an ultimatum was issued demanding that all E.L.A.S. troops should withdraw from the town by January 11. This they did.

According to the terms of the truce signed on January 12, E.L.A.S. troops were to withdraw from northern Peloponnesus by the 19th. 139th and Ind. 11th Inf. Bdes. were assigned the task of clearing the mountainous area enclosed by the road Patras–Dhiakopton–Kalavryta–Khalandritsa–Patras. In this operation Ind. 11th Inf. Bde. was divided into three columns. ‘A’ and ‘C’ columns left Patras in opposite directions along the peripheral road while ‘B’ column was set the task of occupying Klaus and the nearby villages. The operation was launched on January 13. Fierce opposition was encountered, but at length was overcome and the area cleared. Thereafter Ind. 11th Inf. Bde. was concentrated in Patras prior to sailing for Salonika. Associated with and taking over from Ind. 11th Inf. Bde. was 46th Division.

MEDICAL COVER FOR IND. 11TH INF. BDE.

The A.D.S. in the Mesolongion sector of the area was overrun by E.L.A.S. troops attacking Kioneri. The detachment of 32 (Ind.) Fd. Amb., however, managed to extricate itself and reach Mesolongion.

On December 15, the M.D.S. in the hospital in Patras moved to a new site within the perimeter and its cases were evacuated by destroyer to the base hospitals in Italy. Then, as the situation worsened, the M.D.S. moved on to a cargo ship, the S.S. *Samsette*, lying in Patras harbour. H.Q. 32 (Ind.) Fd. Amb. opened a 75-bed hospital aboard on December 18. A light M.D.S. was maintained ashore. Detachments of the field ambulance formed A.D.Ss. in the strong points in the perimeter. Evacuation therefrom was to the light M.D.S. and thence to the M.D.S. afloat.

On December 30 a surgical specialist joined the M.D.S. On January 2 the M.D.S. joined the light M.D.S. ashore as the situation had by this time greatly improved. The work of the M.D.S. was now much increased following the arrival of a Greek brigade which had no medical units of its own. By January 9 the M.D.S. was holding some 300 patients. On the 11th, H.S. *Toscana* arrived and the M.D.S. was cleared.

A company of the field ambulance accompanied each of the columns ‘A’ and ‘B’ and a detachment went with column ‘C’, each with two ambulance cars, during the clearing of northern Peloponnesus of E.L.A.S. elements. Casualties were evacuated to the M.D.S. in Patras.

Of the activities of the field medical units of 46th Division up to the time of the cessation of hostilities there is nothing that calls for comment save that they, in common with those of Ind. 11th Bde., encountered great difficulties in evacuating cases to the general hospital. The field ambulances established C.R.Ss., and in these it was not uncommon for

serious cases requiring urgent surgery to be held for periods up to thirty-six hours. In the case of C.R.Ss. which happened to be on or near the coast the difficulty was removed by the coming of the L.C.I. functioning as an improvised C.C.S. It was found desirable to reinforce the R.N. medical staff aboard by one M.O. and 8 N.Os. from the field ambulance who undertook resuscitation work and post-operative care under the direct supervision of the surgeon.

EVENTS SUBSEQUENT TO THE CESSATION OF HOSTILITIES

During the latter part of January and early February the remaining brigades of 46th Division arrived from Italy. A regrouping was then effected. Ind. 5th Inf. Bde. was moved by sea to Volos immediately after the truce. 2nd Indep. Para. Bde. was withdrawn from Greece at the end of January. Ind. 11th Inf. Bde. in the Patras area was relieved in early February by elements of 46th Division, called for security reasons 'Brewforce' and moved to Salonika to join H.Q. Indian 4th Division.

By the end of February the dispositions of British formations were as follows :

4th Division . . .	Provinces of Phthiotis, Boeotia and northern Attica with H.Q. in Thebes and based on Piraeus.
'Brewforce' . . .	Southern Attica and Peloponnesus with H.Q. at Loutraki and based on Patras and Piraeus.
Indian 4th Division (less Ind. 5th Inf. Bde.)	with H.Q. at and based on Salonika.
Ind. 5th Inf. Bde. .	Province of Magnesia with H.Q. at and based on Volos.
23rd Armd. Bde. (less armd. regts. u/c Division)	Athens.

By the end of February the formation of the Greek national guard, equipped and trained under British arrangements, had proceeded to the stage when the occupation of the remainder of Greece could be undertaken. Greek national forces moved into new areas with British troops in close support. Within a week the whole of the Peloponnesus, eastern and central Greece and the provinces adjacent to Salonika had been occupied. National guard units supported by troops of 'Brewforce' entered Epirus by sea *via* Preveza and Mesolongion on March 19. By the end of the month the occupation of Epirus was completed and that of Thrace and Macedonia begun with the support of Indian 4th Division.

On March 31, 1945, the disposition of British troops was as follows :

Indian 4th Division	Thrace, Macedonia. Based on Salonika and Kavalla.
4th Division . . .	Eastern mainland, based on Volos and Athens.
'Brewforce' . . .	Peloponnesus and Epirus, based on Athens, Patras and Preveza.
23rd Armd. Bde.	Athens.
(less armd. regts. u/c Division)	

MEDICAL ARRANGEMENTS

The wide dispersal of troops throughout Greece presented many and difficult evacuation problems. Roads were in an exceedingly bad state and ambulance car journeys were long. There was no M.A.C. in Greece and the field ambulance cars were subjected to severe stress. The policy therefore had to be to retain as many patients as possible in the field medical units and R.M.Os. and field ambulances were provided with extra equipment. Staging posts were established on the long L. of C. For a short period at the end of February evacuation by road was interrupted by snow. Evacuation from the airfields of Salonika and Araxos on the mainland and from that at Heraklion in Crete was to Athens. From the more remote areas and from the islands evacuation was by naval or merchant vessels as opportunity occurred.

4 F.S.U., which had been at Salonika since the entry of British troops into Greece, moved to Volos when Ind. 5th Inf. Bde. occupied the port. When 53 B.G.H. opened in Volos 4 F.S.U. was moved to Athens for refit, and at the end of March was sent to Kavalla to serve Indian 4th Division units in Thrace. Surgical teams consisting of a surgeon and one O.R.A. were formed at 16 C.G.H., 72 and 97 B.G.Hs. for attachment to field ambulances operating in outlying areas. During March that of 72 B.G.H. was in Patras in the Peloponnesus and that of 97 B.G.H. at Tripolis to serve 'Brewforce'. The surgical team of 16 C.G.H. was at Veroia with Indian 4th Division, then moving into western Macedonia.

4 F.T.U. arrived from Italy in late January 1944 and was attached to 97 B.G.H., acting as the blood bank of Greece.

By the end of March A.F.H.Q. had provided medical equipment for the Greek national guards and had despatched ordnance equipment. The difficulties of the British Army Medical Services therefore became much reduced.

No convalescent depot was allotted to L.F.G. A company of 159 Fd. Amb. provided a convalescent camp at Aliki on April 6, 1945. The camp was moved to Varkiza on May 27. It could accommodate 300 patients. 12 B.S.S. also ran a convalescent camp at Salonika during the summer months of 1945.

The Aegean and Cyclades Islands, previously under M.E.C., were transferred to L.F.G. on April 1, 1945, and with them the command of

Force '142'. This force was based on Chios and consisted of detachments of raiding forces and the Greek Sacred Regiment and was at this time engaged in raids on the German occupied island of Milos. The garrison of Milos surrendered on May 9 and the Aegean and Cyclades Islands were handed over to the Greek national forces. At the end of June Force '142' was withdrawn to the Middle East for disbandment.

The German garrison in western Crete, some 13,622 all told, had been contained by Greek national forces. It surrendered on May 9. Troops of 28th Inf. Bde.—'Prestonforce'—with a detachment of 159 Fd. Amb. were moved to Suda to deal with the P.o.W. and captured material. 200 German and Italian patients were found in the hospitals in Crete. They were cleared under the supervision of the detachment of 159 Fd. Amb. in the sick accommodation of the personnel ships evacuating P.o.W. to the Middle East and Italy.

Indian 4th Division remained in Greece until February 1946. In its place 13th Division (179th, 180th and 181st Inf. Bdes.) was formed out of three British infantry battalions, three artillery regiments and one A.A. regiment from Indian 4th Division, and three infantry battalions from 4th Division. Its medical units were 11 Fd. Amb. and 865 F.D.S. in lieu of a field ambulance. Three infantry battalions came from Italy to make good the loss of 4th Division. With the departure of Indian 4th Division 16 C.G.H. and 2 (Ind.) C.C.S. left the country. 97 B.G.H. was then sent to Salonika and 53 B.G.H. moved from Volos to Athens and 68 F.D.S. from Italy to Psykhiko, near Athens, and later to Athens itself.

For the British force in Greece 1,500 hospital beds were now available—a 3 per cent. cover. But these beds served not only the Army but other Services also—e.g. U.N.R.R.A.—so that the cover was actually of the order of 2·7 per cent.

The general arrangements in the spring of 1946 were as follows :

72 B.G.H.—in Athens	.	All surgical cases evacuated to Athens
		General medical cases
		Women
		Skin cases
		E.N.T. cases
		Rehabilitation
53 B.G.H.—in Athens	.	General medical cases
		Psychiatric cases
		Ophthalmological cases
29 V.D. Wing .	.	V.D. cases. (This wing was disbanded in
(att. 53 B.G.H.)		March 1946 and was replaced by a 100-
		bed expansion to 53 B.G.H.)
97 B.G.H.—in Salonika	.	General medical and surgical cases
		V.D. cases (detach. of 27 V.D. Wing)
		Women
		Rehabilitation

C.R.Ss. of Field Ambulances

4th Div.	{	10 Fd. Amb. with 10th Inf. Bde..	Kavalla
		12 " 12th " .	Salonika. F.S.U. attached
		159 " 28th " .	Veroia (Verria). Surgeon from F.S.U. attached
13th Div.	{	11 Fd. Amb. with 180th and 181st Bdes.	Athens
		865 F.D.S. with 179th Inf. Bde. .	Patras. Surgeon of 31 F.S.U. attached
23rd Armd. Bde.		150 Lt. Fd. Amb. with 23rd Armd. Bde.	Loutraki
Bde.		68 F.D.S. Corps and area sick .	Athens

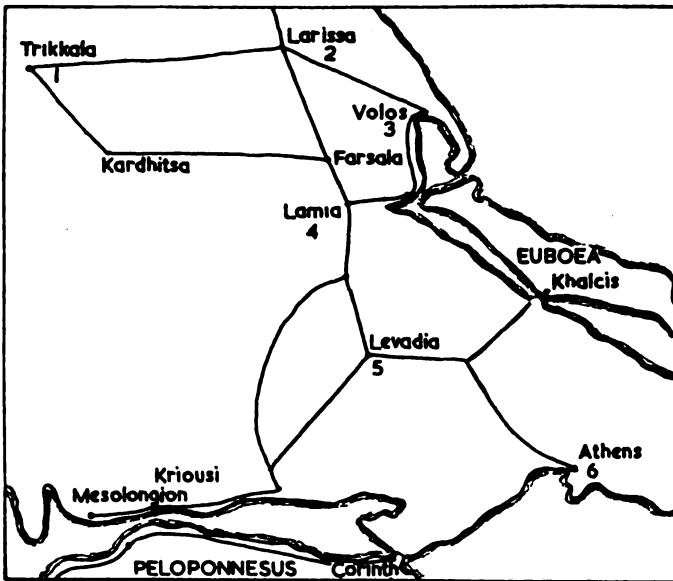


FIG. 135. The Distribution of the Medical Units of 4th Division. January-April 1945.

- | | |
|--------------------------------|-----------------------|
| 1. A.D.S. 'B' Coy. 10 Fd. Amb. | 4. C.R.S. 12 Fd. Amb. |
| 2. C.R.S. 10 Fd. Amb. | 5. S.P. 159 Fd. Amb. |
| 3. 53 B.G.H. | 6. 159 Fd. Amb. |

In general this disposition of the medical units and this pattern of their utilisation is illustrative of the rest of the time that British troops remained in Greece.

From this point onwards until the Greeks were able completely to assume the management of their own affairs the activities of the Army Medical Services became increasingly of the usual peace-time kind as conditions in the country as a whole slowly but progressively returned to normal. They were much involved in relief work and in rendering

assistance in the enlargement of the Greek military medical services. The gradual and progressive reduction of the British force in Greece is revealed by the changing composition shown in Appendix XXVI.

RELIEF ACTIVITIES

4th Division

After the truce 10th Bde. moved to Khalkis, 12th Bde. remained in Levadia and H.Q. 4th Division went to Thebes. On February 17, 1945, the surgical centre in Thebes closed and was replaced by a car post and resuscitation centre. Later 12th Bde. was relieved in Levadia by 28th Bde. and 10th Bde. in Khalkis by 12th Bde.

Between March 1-3, 4th Division, less 28th Bde., moved northward as the area administered by the Greek government extended. 10 Fd. Amb. established a C.R.S. at Lamia and 159 Fd. Amb. returned to Athens. Evacuation from 10 and 12 Fd. Amb. was to 53 B.G.H., now at Volos. To assist in the evacuation of convalescents from 53 B.G.H. the car post at Thebes was closed and 159 Fd. Amb. established a staging post at Levadia.

During this time the field ambulances were heavily involved in providing medical care for the civil population of the area, assisting the local medical practitioners and staffs of the local hospitals, making morbidity surveys of local communities and distributing medical supplies and the like pending the taking over of these responsibilities by U.N.R.R.A.

46th Division

C.R.Ss. were established at:

	<i>Beds equipped</i>	<i>Average number of beds occupied</i>
Piraeus	50	20
Corinth	30	15
Patras	100	50
Tripolis	50	30
Navplion	30	15

Car posts were established at: Agrinion
Arta
Pirgos
Kalamai

A staging area was established at Corinth for all cases from the Peloponnesus.

Surgical teams (from field ambulance personnel) were attached to the C.R.Ss. of 184 Fd. Amb. at Patras and of 185 Fd. Amb. at Tripolis. V.D. wings were established at the C.R.Ss. at Patras and Tripolis.

150 Lt. Fd. Amb., with five ambulance cars and sited at Corinth, functioned as an improvised M.A.C.

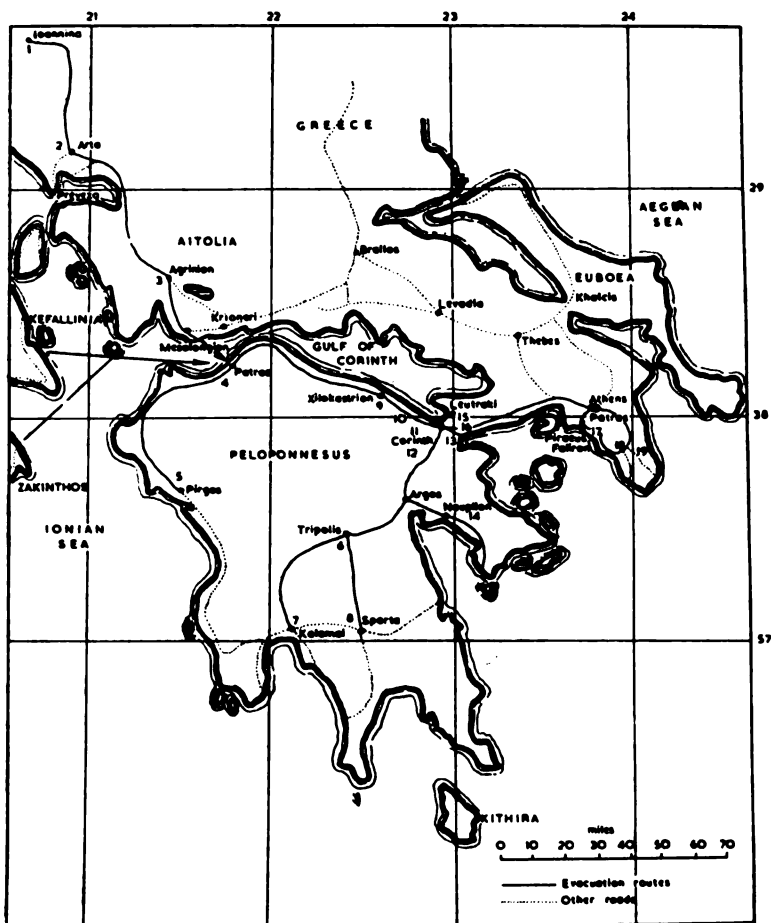


FIG. 136. The Distribution of the Medical Units of 46th Division.

- | | |
|--|---|
| 1. R.A.P. 2/5th Leicesters | 8. R.A.P. 5th Hamps. |
| 2. C.R.S. | 9. R.A.P. 71st Fd. Regt. R.A. |
| 3. C.C.P. & R.A.P. 9th Manch. | 10. R.A.P. 70th Fd. Regt. R.A. |
| 4. H.Q. 138th Bde.
R.A.Ps. 6th Y. & L. and 2/4th
K.O.Y.L.I.
C.R.S. and Surg. Centre 184 Fd.
Amb. | 11. R.A.P. 172nd Fd. Regt. R.A. |
| 5. C.C.P. & R.A.P. 6th Lincolns | 12. C.R.S. 183 Fd. Amb. |
| 6. H.Q. 128th Bde.
C.R.S. and Surg. Centre 185 Fd.
Amb. | 13. C.C.P. & R.A.P. 46th Recce. Regt. |
| 7. C.C.P. & R.A.P. 2nd Hamps. | 14. C.R.S. 185 Fd. Amb. |
| | 15. H.Q. 46th Division
R.A.P. 50th R. Tks. |
| | 16. R.A.P. Div. R.A.S.C. |
| | 17. H.Q. 137th Bde. |
| | 18. R.A.P. 16th D.L.I. |
| | 19. R.A.P. 5th Foresters |

15 Fd. Hyg. Sec. was heavily involved in advising local communities regarding conservancy, sewage disposal, water supply and disinfection.

26 and 29 A.M.C.U.s. carried out extensive malaria surveys of the area. 2 Mal. Fd. Lab. conducted a number of courses of instruction for medical officers of the division and 15 Fd. Hyg. Sec. carried instruction in malaria prevention and control to every unit.

In common with those of other formations, the field ambulances of 46th Division were made responsible for collection of medical and other Red Cross supplies from the Red Cross H.Q. in Athens and for their distribution among the civil population. The activities of 183 Fd. Amb. can serve as an example of the work of all.

February 1. Collected and delivered miscellaneous medical supplies for the civil hospital Corinth and for the Red Cross Committee, Katon.

February 2. Collected and delivered 65 barrels of codliver oil for the Red Cross Committee, Tripolis.

February 3. Collected and delivered miscellaneous medical supplies for the Red Cross Committees, Argos and Corinth, and for the civil hospital, Navplion.

February 5. Collected and delivered 65 barrels of codliver oil for Red Cross Committees of Corinth and Navplion.

and during this period distributed 18 large loads of fuel and food from Corinth to the villages south of Corinth under the supervision of M.L.G. representatives. The supplies were handed over to the local medical practitioner or else to a responsible member of the village community.

Villages visited and Diseases diagnosed (in a representative town)

	Scabies	I.A.T.	Rheumatism	Cardiac	Malaria	Tonsillitis	Others
Village							
Vellon . . .	532	18	17	4	19	3	23
Kokkoni . . .	261	10	14	2	9	7	15
Bolati . . .	247	9	11	3	14	6	14
Krinai . . .	122	5	4	2	5	2	12
Tarsina . . .	147	1	4	3	6	2	10
Poulitsa . . .	213	6	8	1	8	7	9
Evangelistria . . .	107	3	5	2	4	3	11
Nerantza . . .	203	—	—	—	—	—	—

2,153

This relief work was much enjoyed by the personnel of the field ambulances and by the R.M.O.s. It was greatly appreciated by the Greek medical practitioners and it did much to lessen the tribulations of a people that had suffered much.

THE HEALTH OF THE TROOPS
SAMPLE STATISTICS

TABLE 61
*Principal Diseases affecting the Troops
October–December 1944*

Average strength of British Troops	October 14,000	November 30,000	December 48,000	
Diseases	October	Numbers November	December	Totals
Anthrax			1	1
Dysentery	8	46	21	75 (mostly bacillary)
Infective Hepatitis	6	41	23	70
Pneumonia	2	16	13	31 (mainly atypical)
Poliomyelitis		1	1	2
Bilharziasis			1	1
Chickenpox			4	4
Typhoid, clinical			1	1
Scarlet Fever			1	1
Arsenical Jaundice		1		1
Measles		1		1
Amoebiasis		1		1
Typhus, louse-borne		1		1 (a Greek sailor)
Tuberculosis		3		3
Diphtheria	2	6		8
Paratyphoid		1		1
Benign Lymphocytic Meningitis	2			2
Mumps		1		1
	20	119	66	205
Pediculosis	—	3	14	17
corporis	—	40	65	105
pubis	9	44	158	211
	9	87	237	333

Malaria

	B.T.			M.T.			Q.			Clin.			Totals		
	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.
Fresh .	9	18	12	1	6	4	1	3	—	3	3	1	14	30	17
Relapse	11	55	50	—	8	17	—	2	—	—	11	2	11	76	69
	20	73	62	1	14	21	1	5	—	3	14	3	25	106	86

Venereal Diseases

	Army			R.A.F.			R.M.			R.N. & M.N.		
	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.
Syphilis	—	—	7	—	—	2	—	—	—	—	1	—
Gonorrhoea	38	49	134	5	15	21	—	—	—	—	30	15
Urethritis	7	211	—	2	35	—	—	—	—	—	22	—
Chancroid	—	1	18	—	3	—	—	—	—	—	1	2
Lymph & granuloma	—	—	1	—	—	—	—	—	—	—	—	—
N.Y.D.V.S.	—	—	73	—	—	6	—	—	—	—	—	8
S. & C.	—	—	7	—	—	4	—	—	—	—	—	4
Other Forms	19	106	78	5	21	3	1	—	—	—	16	3
Totals	64	367	318	12	74	36	1	—	—	—	70	32

	Indians			Greeks			Others			P.o.W.		
	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.
Syphilis	—	—	1	—	—	2	—	4	—	—	—	—
Gonorrhoea	—	—	14	—	—	35	—	47	10	7	—	3
Urethritis	—	—	—	—	—	—	—	19	—	—	—	—
Chancroid	—	—	4	—	—	3	—	—	—	—	—	—
Lymph & granuloma	—	—	—	—	—	—	—	—	—	—	—	—
N.Y.D.V.S.	—	—	5	—	—	5	—	—	—	—	—	—
S. & C.	—	—	5	—	—	1	—	—	4	—	—	—
Other Forms	—	—	7	—	—	3	—	40	—	4	—	—
Totals	—	—	36	—	—	49	—	110	14	11	—	3

Note: The V.D. rate in Greece was four times the rate for the rest of C.M.F.

TABLE 62
Principal Diseases affecting the Troops
January-March 1945

Diseases	Numbers			
	January	February	March	Totals
Bilharziasis	1		13	14
Chickenpox	9	32		41
Diphtheria	23	39	29	91
Dysentery	8	13	15	36
Infective Hepatitis	36	75	84	195
Arsenical Jaundice	2			2
Pneumonia	24	44	127	195
Poliomyelitis	2			2
T.B. & Epididymitis	1			1
T.B., pulmonary	4		6	10
Enteric group	1			1
Gas Gangrene	2			2
Typhus	2		1	3
Mumps	9	32	65	106
Measles	2	1	1	4
Amoebiasis Dysenteric			2	2
Scarlet Fever			3	3
Amoebiasis Hepatitis			2	2
Rabies			1	1
Meningitis meningococcal			1	1
Ankylostomiasis			1	1
Kala Azar			1	1
Trachoma			1	1
Pneumonitis			1	1
Dermophylosis			1	1
	126	236	355	717

Pediculosis and Scabies

	January	February	March	Totals
Pediculosis	16	—	—	16
corporis	60	91	106	257
pubis	202	207	440	849
Scabies	126	260	402	788
	404	558	948	1,910

Malaria

	January		February		March		Totals	
	Fresh	Relapse	Fresh	Relapse	Fresh	Relapse	Fresh	Relapse
B.T.	7	41	8	38	16	54	31	133
M.T.	2	2	4	3	2	—	8	5
Q.	—	—	1	1	—	—	1	1
Clin.	1	9	6	6	5	—	12	15
Totals	10	52	19	48	23	54	52	154

Venereal Disease

	January		February		March		Totals	
	Br.	Others	Br.	Others	Br.	Others	Br.	Others
Gonorrhoea . . .	320	78	352	123	441	112	1,113	313
Syphilis . . .	29	19	34	17	43	17	106	53
Chancroid . . .	131	29	161	60	133	42	425	131
Other Forms . . .	126	18	173	45	289	57	588	120
N.Y.D.V.S. . . .	47	5	30	19	47	30	124	54
S. & C. from previous N.Y.D.V.S.	2	1	6	7	11	10	19	18
	655	150	756	271	964	268	2,375	689

TABLE 63

*46th Division. Principal Diseases affecting the Troops
January-March 1945*

Malaria

M.T.	1 (Relapse)
B.T.	43 (7 fresh; 36 relapse)
Clin.	5 (3 fresh; 2 relapse)

Infective Hepatitis . . . 28

Dysentery 4

Diphtheria 11

Pediculosis & Scabies a very high incidence

Atypical Pneumonia . . 100 (approx.)

V.D.

Gonorrhoea	26	} 461
Penile Sore	63	
Others	372	

Under the conditions that existed (and which could have been foreseen) V.D. constituted a most intractable problem. There were no P.A.Cs. or V.D.T.Cs. operating in divisional areas and evacuation to the general hospital involved serious loss of man-power. A.D.M.S. 46th Division therefore decided that under the circumstances the best course to adopt was to send a medical officer and 4 S.T.Os. from each field ambulance in turn to 97 B.G.H. for a week's instruction in penicillin therapy. Thereafter V.D. wings were opened in the C.R.Ss. of 184 and 185 Fd. Ambs. The troops carried condoms and E.T. packets and all units had E.T. rooms. But, in the opinion of A.D.M.S. 46th Division, the P.A.Cs. arrived in Greece far too late and of them there were far too few.

A medical officer of 184 Fd. Amb. in Patras was encouraged to open a V.D. clinic in conjunction with the local civil general medical practitioners for the treatment of women traced by the C.M.P. This clinic

was a great success, as judged by the fall in the incidence of venereal disease among the troops in the area. Moreover, it performed a social service of considerable value. An adviser in venereology, visiting the division, was much impressed by the value of the work being done.

THE PRINCIPAL DISEASES AFFECTING THE CIVIL POPULATION *October–December 1944*

Malnutrition was widespread. The incidence of pulmonary tuberculosis, scabies and pediculosis was abnormally high. Thirty cases of epidemic typhus were recorded in November. The incidence of V.D. was exceedingly high. The treatment of women in rural areas was non-existent. Penicillin was not available for civilian cases at this time.

January–March 1945

300 cases of exanthematic typhus occurred in the villages of the Serrai area in Macedonia, north of Salonika. Numerous minor outbreaks of enteric were associated with contaminated water supplies.

SANITARY CONDITIONS

Water Supplies. Sources were various and supplies were regarded as potentially dangerous and treated accordingly.

Rations. For the first ten days 'compo' rations were issued and thereafter F.S.R. less fresh items. On November 16 one compound vitamin tablet or one ascorbic acid and one vitamin B.₁ tablet daily were given as a precautionary measure. Fresh bread became available in November. A ban was placed on the local purchase of food, but commonly this was disregarded. During the fighting the troops reverted to C.M.F. hard scales.

Clothing. C.M.F. winter scales proved suitable and adequate.

Conservancy. In Salonika, Athens, Volos, Patras and Heraklion, waterborne disposal to the sea was available. When in December, the water supply to Athens was cut, cesspits and deep trench latrines were utilised.

Refuse Disposal. During the period of fighting the refuse in Athens was incinerated in one of the town squares as collection and tipping could not be continued.

CASUALTIES

Casualties admitted to Medical Units. December 5–31, 1944.

Total Battle Casualties admitted 1,565 (British 922)

Casualties evacuated from Greece. December 5–31, 1944.

By Sea	.	.	600
By Air	.	.	470

THE ARMY MEDICAL SERVICES

Casualties evacuated from Greece. January 1–March 31, 1945.

By Sea . . . 884

By Air . . . 224

Casualties evacuated from Greece. April 1–June 30, 1945.

By Sea . . . 31

By Air . . . 169

46th Division. Battle Casualties

Wounded

Officers	:	4	} mainly small arm—34 out of 57
O.Rs.	:	53	

REFLECTIONS UPON THE RETURN TO GREECE

BY D.D.M.S., L.F.M.L.G.

The return to Greece presented a number of difficult problems to the Army Medical Services. They were of three kinds. There were those that related to the late arrival of certain medical units; there were those that arose from the military operations against E.L.A.S.; and finally, there were those that derived from the task of helping to form a Greek medical service for the National Guards.

Force '140' entered as liberators a country in which destitution was rife and in which prostitution was legalised. Nothing was more certain than that venereal disease would constitute a most acute and intractable problem; indeed almost one-third of all hospital admissions were on account of this disease. Yet the P.A.C. attached to the Force did not reach Athens until D-day+34 and thereafter the construction of the centre proceeded most tardily. In retrospect it is clear that several P.A.Cs. should have been despatched and established within the first few days of the operation.

Force '140' entered a country throughout which prisoners-of-war in their thousands and of almost every nationality were scattered, ill fed, ill clad, louse infested and sick. They had, perforce, to be cared for by the Army Medical Services. Yet the field hygiene section (21) did not arrive until D-day+32 and the M.C.Us. (used as disinfection teams) until D-day+22 and D-day+36. Hygiene personnel and stores, medical supplies, disinfectants and the like, should have been available from the very beginning.

When the fighting broke out the general hospital in the Athens area soon became isolated. E.L.A.S. allowed a limited degree of inter-communication between it and the field medical units but no evacuation from the hospital was allowed. Infrequently the International Red Cross was permitted to send supplies to the hospital. So it was that in the Athens area surgical, pathological and radiological facilities ceased. It was indeed fortunate that 127 Para. Fd. Amb. was able to establish a surgical

centre in the University of Athens and that a surgical team and a transfusion officer could be flown in when a request for such was made. There was no depot of medical stores. Supplies were obtained from 97 B.G.H. When this was isolated it was fortunate that medical supplies could be brought in by air.

The water and electricity supplies to Athens were cut. 97 B.G.H. had to depend on well water and the troops had to be content with half a gallon per head per day. There was a sudden demand for lamps, kerosene, candles, torches and oil stoves, which could not at once be met.

The Army Medical Services became heavily involved in the creation of the medical component of the Greek National Guard. No non-expendible equipment had been made available for this purpose, however, the hospitals that were formed could not be equipped and, in so far as expendible medical supplies were concerned, these could be provided only out of such as were urgently required by the British Army Medical Services themselves.

It would seem, therefore, that in so far as the medical aspects of Operation 'Manna' were concerned the medical cover—save in respect of P.A.Cs., hygiene and malaria control units—was adequate for a liberating force entering a friendly country. It was not adequate initially to undertake any large responsibility for the creation of a Greek military medical service, and it was only by the exercise of considerable ingenuity and improvisation that it was sufficient to cater for the needs of a force suddenly flung into a peculiarly difficult form of military enterprise. The rarity or absence of the F.S.U., F.T.U., F.D.S. and V.D.T.C., the newer instruments of medical policy which had been thoroughly tested in Sicily and Italy and which had become essential units of a field force, is noteworthy.

It is to be assumed that those responsible for medical planning acted on the view that should large-scale military operations occur it would be possible to build up the medical cover to appropriate dimensions in good time. This is, in fact, what happened. But there was a brief period during which the difficulties being encountered caused considerable anxiety to the medical services in Greece.

APPENDIX XXVI

THE CHANGING COMPOSITION OF LAND FORCES GREECE

<i>Strength</i>	
October 1944	. 14,207
November	. 37,472
December	. 51,760

October 1, 1944

M.L. H.Q. Greece
 23rd Armd. Bde.
 2nd Indep. Para. Bde.
 1 & 2 Districts M.L.G.
 B & D Regions M.L.G.

December 31, 1944

as in October, plus :
 X Corps
 4th Division
 Indian 4th Division
 Greek 3rd Mountain Bde.
 151, 202, 207 Sub-areas
 3 & 6 Districts M.L.G.
 F & G Regions M.L.G.

Medical Units

97 B.G.H.
 150 Lt. Fd. Amb.
 127 Para. Fd. Amb.
 21 Fd. Hyg. Sec.
 88 F.D.C.
 22 A.M.C.U.
 34 & 45 M.C.U.s.
 21 P.A.C.

as in October, plus :

53 B.G.H.
 det. 16 C.G.H.
 1 Gk.G.H.
 2 (Ind.) C.C.S.
 4 F.S.U.
 1 (Gk.) F.S.U.
 3 (Gk.) Fd. Amb.
 det. 42 Fd. Hyg. Sec.
 3 (Gk.) Fd. Hyg. Sec.
 12 B.S.S.
 R.Ss. attached to B, C, F & G
 Regions
 81 P.A.C.
 2 (Ind.) Dental Surg. Unit
 3 (Ind.) Dental Mech. Unit
 12 (Ind.) Dental Unit

Strength

Br. . . 65,118
 Indian . . 14,073

January 1–March 31, 1945

as in December, plus :
 Main H.Q. X Corps
 212 Area
 Athens District M.L.G.
 Patras " "
 Salonika " "
 Crete " "
 Kalamai " "
 Volos Region M.L.G.
 Kavalla " "
 37 Beach Gp.

2nd Indep. Para. Bde. left January
 27

as in December, plus :

16 C.G.H.
 72 B.G.H.
 'G' V.D. Wing
 31 F.S.U.
 4 F.T.U.
 63 (Ind.) X-ray Unit
 6 (Ind.) Fd. Lab.
 2 Mob. Mal. Fd. Lab.
 13 Adv. Depot Med. Store
 131, 139, 164, 166 M.D.U.s.
 R.Ss. Volos & Kavalla Regions
 M.L.G.
 50 & 59 M.C.U.s.

Gk. 3rd Mountain Bde. left March 15 26, 39, 74, 75, 85 A.M.C.U.s.
92, 93, 94, 95, 96 P.A.Cs.
Medical sections A, B & C Special
Port Detachments

Strength

Br. . . 37,566
Indian . . 13,552

April 1-June 30, 1945

4th Division 53, 72, 97 B.G.Hs.
46th Division 16 C.G.H.
Indian 4th Division 27 V.D. Wing (formerly 'G')
23rd Armd. Bde. 4 & 31 F.S.U.s.
212 Area 4 F.T.U.
202 Sub-area 2 (Ind.) C.C.S.
37 Beach Gp. 150 Lt. Fd. Amb.
Athens District M.L.G. Detach. 42 Fd. Hyg. Sec.
Patras " " 21 Fd. San. Sec. (formerly 21 Fd.
Salonika " " Hyg. Sec.)
Crete " " 63 (Ind.) X-ray unit
Kalamai " " 12 B.S.S.
D Region M.L.G. Corfu 6 (Ind.) Fd. Lab.
Volos " " 2 Mob. Mal. Fd. Unit
Kavalla " " 13 Adv. Depot Med. Stores
88, 97 F.D.Cs.
131, 139, 164, 166, 185, 187
M.D.U.s.
12 (Ind.) Dent. Unit
2 (Ind.) Dent. Surg. Unit
3 (Ind.) Dent. Mech. Unit
R.Ss. Volos, Kavalla Regions
M.L.G.
Medical sections A, B & C Special
Port Detachments
Detach. 8 of 1 Mal. Control. Coy.
(formerly 74 & 75 A.M.C.U.s.)
Detach. 9 of 1 Mal. Control Coy.
(formerly 26 & 50 A.M.C.U.s.)
Detach. 10 of 1 Mal. Control Coy.
(formerly 39 & 85 A.M.C.U.s.)
34, 45 & 59 M.C.U.s.
22 A.M.C.U.
21, 81, 92, 93, 94, 95, 96 P.A.Cs.

Strength

Br. . . 36,780
Indian . . 14,637

October 1–December 31, 1945

4th Division	as in June, plus:
Indian 4th Division	48 & 58 M.C.Us.
23rd Armd. Bde.	and less:
212 Area	139 M.D.U.
202 Sub-area	
Brit. Mil. Mission to Greece	

Strength

50,000

January 1–March 31, 1946

4th Division	as in December 1945, plus:
Indian 4th Division (until February 19)	16 C.G.H. (until February 19)
13th Division (from January 28)	27 V.D. Wing (until March 20—disbanded)
B.M.M.G.	2 (Ind.) C.C.S. (until February 19)
23rd Armd. Bde.	68 F.D.S. (from January 18)
212 Area	Detach. 8, 9 & 10 of 1 Mal. Control Coy. (until January 31—disbanded)
202 Sub-area	6 (Ind.) Fd. Lab. (until February 19)

Strength

38,000

April 1–June 30, 1946

4th Division	53, 72, 97 B.G.Hs.
13th Division	4 & 31 F.S.Us.
23rd Armd. Bde. (until disbanded in May)	68 F.D.S.
212 Area	2 Mob. Mal. Fd. Lab.
202 Sub-area	13 Adv. Depot Med. Stores (until April 30)
B.M.M.G.	13 Base Depot Med. Stores (May 1–14 when command passed to G.H.Q., M.E.F.)
	21 Fd. San. Sec.
	21, 81, 92, 93, 94, 95, 96 P.A.Cs.
	88 & 97 F.D.Cs.
	131 164, 166, 185, 187 M.D.Us.
	34, 45, 48, 58, 59 M.C.Us.
	22 A.M.C.U.

Strength

20,054

(Hospital cover 4.2 per cent. at beginning of quarter; 3.9 per cent. at end)

October 1–December 31, 1946

4th Division	53, 72, 97 B.G.Hs.
13th Division (until end of October when it was disbanded)	10, 11, 12 Fd. Ambs.
212 Area	150 Lt. Fd. Amb. (until December)
202 Sub-area	159 Fd. Amb. (until December)
B.M.M.G.	4 F.S.U.
	2 Mob. Mal. Fd. Lab. (until December 12)
	21 Fd. San. Sec.
	4 Fd. Hyg. Sec.
	13 Base Depot Med. Stores (for local administration)
	88 & 97 F.D.Cs.
	131, 166, 185 M.D.Us.
until end of October	114 (Ind.) Fd. Amb.
	821 Mob. X-ray Unit
	34 (Ind.) Fd. Hyg. Sec.
	11 F.S.U.
	41 F.D.C.

Components of Divisions and Brigades

Indian 4th Division

- Ind. 5th Inf. Bde.
 - 1/4th Essex Regt.
 - 1/9th Gurkha Rifles
 - 3/10th Baluchs.
- Ind. 7th Inf. Bde.
 - 1st Royal Sussex
 - 2nd Royal Sikhs
 - 1/2nd Gurkha Rifles
- Ind. 11th Inf. Bde.
 - 2nd Camerons
 - 3rd Royal Frontier Force Regt.
 - 2/7th Gurkha Rifles
- Divisional troops and services including
 - medical, 17, 26, 32 (Ind.) Fd. Ambs.
 - 15 (Ind.) Fd. Hyg. Sec.

4th Division

- 10th Inf. Bde.
 - 2nd Bedfs. Herts.
 - 1/6th Surreys
 - 2nd D.C.L.I.
- 12th Inf. Bde.
 - 2nd R.F.
 - 6th Black Watch
 - 1st R.W.K.

28th Inf. Bde.
 2nd King's Regt.
 2nd Som. L.I.
 2/4th Hamps.
 Divisional troops and services including
 medical, 10, 12, 159 Fd. Ambs.
 4 Fd. Hyg. Sec.
 85 A.M.C.U.
 50 M.C.U.

46th Division

128th Inf. Bde.
 2nd Hamps.
 1/4th Hamps.
 5th Hamps.
 138th Inf. Bde.
 6th Lincolns
 2/4th K.O.Y.L.I.
 6th Y. & L.
 139th Inf. Bde.
 2/5th Leicesters
 5th Foresters
 16th D.L.I.
 Divisional troops and services including
 medical, 183, 184, 185 Fd. Ambs.
 15 Fd. Hyg. Sec.
 26, 39 A.M.C.U.s.

23rd Armd. Bde.

11th K.R.R.C.
 40th R. Tks.
 46th R. Tks.
 50th R. Tks.
 104th Bty. R.H.A.
 Signals, R.E., R.A.S.C., Ordnance units
 Medical, 150 Lt. Fd. Amb.

2nd Indep. Para. Bde.

4th Para. Bn.
 5th Para. Bn.
 6th Para. Bn.
 Medical, 127 Para. Fd. Amb.
 R.A., A/T, R.E., R.A.S.C., R.E.M.E., R.A.O.C. units and detachments.

INDEX

PART I

- Adige, advance to, and crossing of, 463, 480, 499, 500 (*Fig. 121*)
- Administrative lessons of Italian campaign, 574
- Adriatic coast, from Cesano to Adige, 357 (*Figs. 86-89*)
- Adriatic flank, Apr. to Aug. 1944, 315, 356 (*Fig. 76*)
- Advanced Administrative Echelon, Allied Forces Headquarters (Adv. Admin. Ech.), 164, 173, 176, 231, 240, 246
- Adviser in Malariology, A.F.H.Q., 529
- Aegean Islands, 594-597, 607
- A.F.H.Q. Medical planning in connexion with Operation 'Husky', 9
- Agira, 21, 22, 23, 34, 36, 37, 39, 40 (*Figs. 2, 4, 5*)
- Air evacuation, 12, 103, 324, 328, 581, 586 'Husky', 12, 60, 61, 70, 79 (*Plates VI-IX*) 'Olive', 585 pursuit to Arno, 323, 324, 329, 330
- Alexander, General, 93, 94, 110, 194, 227, 244, 302, 318, 374
- Algiers, Medical Arrangements, 10, 13 Medical Planning for Invasion of Italy, 99, 101-104
- Allied Armies in Italy (A.A.I.), 195, 241, 261, 294, 299, 322, 332, 372, 374
- Allied Central Mediterranean Force (A.C.M.F.), 195, 240, 241, 294, 295
- Allied Force Headquarters, medical planning for Eastern Task Force, 9
- Allied Force Headquarters, medical planning for Italian landings, 99
- Allied Land Forces, Greece (*see Part II of Index*)
- Allied Land Forces, South-East Asia (A.L.F.S.E.A.), 367
- Allied Military Government, Occupied Territories (A.M.G.O.T.), 170, 181, 184, 535, 546, 549, 555, 561, 563
- Allied Territories (Balkans) Committee, 598
- 'Amazon Bridge', 246, 284 (*Fig. 70*)
- Ambulance cars, four-wheel drive, 143, 160, 182, 576
- Ambulance journeys, traumatic effect of, 581
- Ambulance trains in pursuit to Arno, 323, 325
- Ambulance train service in Italy, 172, 175, 181
- American Virus Commission, 432
- Amphibious operation in Greece, 601, 602
- Amphibious operations in N. Italy, 458, 490, 496
- Ancona, 317, 323, 324, 330
- Anti-malaria precautions, lessons of Sicilian campaign, 70
- Anti-typhus measures, 544
- 'Anvil' Operation, 310
- Anzio, 194, 195, 196, 200, 222, 223, 226, 227, 229, 230, 231, 232, 236, 241, 243, 244, 246, 254, 258, 261, 273, 291, 294, 300, 301, 322, 324 (*Figs. 50, 53, 54, 55*)
- Areas, sub-areas, commands, garrisons, 108, 118, 143, 144, 171, 178, 179, 191, 207, 241, 264, 265, 387, 410, 412
- Arezzo, 301, 302, 306, 308, 310, 314, 323, 330, 325, 328, 330, 334, 336, 342, 344, 345, 346, 382, 384, 408, 411, 412, 437, 438, 443, 445, 448, 454, 455, 527, 589 (*Figs. 73, 74, 75, 77, 82, 96, 97, 104, 114*)
- Argenta Gap, battle of, 458, 475 (*Fig. 120*)
- 'Arkforce', 598; medical units of, 599
- 'Arks', 456
- Armistice with Italy signed, 93, 110
- Army Group 15, 4
- Army Transfusion Service, 56, 69
- Athens, outbreak of hostilities in, December 1944, 599, 600
- 'Avalanche', Operation, medical cover (British component), 119 (*Fig. 23*) medical order of battle, 187 medical plans for, 100, 101, 102 tactical plan for, 94
- Badoglio, Marshal, 92, 93
- Bari, 91, 114, 118, 131, 136, 155, 161, 170, 171, 172, 173, 175, 176, 178, 181, 188, 192, 219, 220, 279, 323, 324, 325, 340, 382, 385, 409, 429, 432, 443, 446, 449, 455, 473, 474, 495, 524, 533, 537, 557, 564, 565 (*Figs. 20, 36, 40, 114*)
- Basuto section of general hospital, 296, 297
- 'Baytown', Operation, medical plans for, 96, 99, 102 medical cover for, 116 medical order of battle, 186 tactical plan for, 94 (*Fig. 19*)
- Beach brick, Operation 'Husky', 6, 60, 68 (*Fig. 1*)
- Beach group units in 'Husky', 60
- Bologna, 301, 315, 323, 356, 357, 372, 375, 379, 381, 404, 412, 456, 457, 461, 469, 475, 477, 489 (*Figs. 89, 94, 116, 118, 122, 123, 129, 130, 131*)
- Bren carriers, fitted to carry stretchers, 65
- British and Allied Formations and Medical Units (*see Part II of Index*)
- British Increment U.S. Fifth Army, U.S. VI Corps, 102, 231, 232, 241, 410, 411, 412, 470, 471
- British Military Liaison Headquarters (Greece), 598
- British Mission to Greece, 597
- 'Buckland' Operation, 457 medical appreciation, 470 medical arrangements, 473 medical cover, 486

- Cacolets, 65
 Caesar Line, 254
 Campobasso, 114, 125, 127, 128, 133, 134, 162, 169, 172, 174, 175, 181, 193, 238, 240, 264, 265, 267, 277, 292, 315, 334, 344, 446, 537, 563 (*Figs. 20, 24, 25, 36, 37, 38, 39, 40, 41*)
 Canadian medical cover in 'Honker', 267
 Canadian system of employment of field medical units, 273
 Cancellò, 138, 215, 219, 240, 261, 267, 273, 290, 323, 349, 351, 446, 449, 454, 455 (*Figs. 20, 28, 30, 35, 114*)
 Cape Corps, 445
 Capitulation of German Forces in Italy, 456
 Caserta, 138, 142, 152, 179, 195, 212, 216, 220, 239, 240, 241, 244, 261, 262, 263, 267, 272, 290, 294, 325, 336, 338, 340, 341, 408, 409, 429, 432, 446, 449, 454, 455, 463, 465, 495 (*Figs. 20, 28, 30, 83, 114*)
 Cassino, 92, 194, 196, 197, 201, 203, 205, 206, 215, 216, 218, 219, 220, 221, 243, 244, 246, 247, 252, 266, 267, 281, 286, 289, 290, 292, 294, 300, 301, 348, 349, 589 (*Figs. 32, 33, 44, 45, 49, 55, 56, 62, 63, 64, 66, 70, 79, 80, 81*)
 Casualties:
 Anzio, January-March 1944, 237
 Canadian, Italy, 272, 399
 Eighth Army, Sicily, 72-85
 Italy, 504-521
 Greece, 617, 618
 New Zealand 2nd Division, Italy, 522
 South African 6th Armoured Division, 343, 444, 489
 at Salerno Beaches, 122
 in battle for Rome, 259
 Casualty Clearing Stations, Canadian in Italy, 275
 and General Hospitals, 579, 586
 in Sicily, 65
 use of, in battle, 580
 working parties for, 184
 Casspit emptier, 585
 'Checkforce', 490
 Chetniks, 484
 Chlorinator, Eighth Army improvised, 552, 558
 'Chuckle', Operation, 406
 Civilians, relationship of military authorities and, 184
 Clark, General Mark, 94, 374, 457
 Clothing in Greece, 617
 Clothing of troops in Austria, 573
 Clothing of troops in Italy, 572
 Comacchio, Lake, 458, 489
 Conservancy in Greece, 617
 Control Post, Capua and Cassino, 3 District, 263, 265, 290
 Convalescent Depot, duration of stay in, in Italy, 505, 510
 'Corkscrew', Operation, 16
 Cos, 594, 595, 596, 597
 'Crocodile' tanks, 456, 458
 'Cumberland' Force, 404, 405
 D.A.D.M.S. (S.P. & P.o.W.), 488
 D.D.T., 526, 527, 529
 spraying from aircraft, 589
 Dental Service, 583 (*Plate xxv*)
 Depot medical stores, advanced, 584
 Dermatology, 583
 Diphtheria, 544, 547, 559
 Directorate of Medical Research, War Office, 533
 Directorate of Selection of Personnel, War Office, 242
 Diseases affecting civilians in Greece, 612, 617
 affecting Eighth Army in Italy, 506, 523
 affecting troops in Greece, 613, 615
 affecting V Corps in Italy, 516
 affecting X Corps in Italy, 519, 521
 causing admission to hospital in Italy, 504-511
 prevalent among the civilian population in Italy, 554
 prevalent in Sicily, 4, 47
 seasonal fluctuations respecting, 511
 Disinfestation of refugees, 564
 Displaced Persons, 497
 Divisional field hygiene sections, 584
 Divisional H.Q., medical branch, 577, 586
 D.U.K.Ws. in Italy, 150, 179 (*Plate xvii*)
 Durham Infantry Brigade at Primosole bridge, 21
 Dysentery, 55, 543

 E.A.M., 597
 Ear, Nose and Throat specialist, 583
 Eastern Task Force, 5, 9
 medical planning in connexion with, 9
 E.D.E.S., 597, 598
 Eighth Army in Italy, in advance to Winter Line, 123 (*Figs. 24-27*)
 Army medical units, April 1945, 502
 assault on Winter Line, 144 (*Figs. 30, 31*)
 'Buckland', 457
 'Buckland', medical appreciation, 470
 conditions affecting health of troops in, 548
 medical arrangements (1943), 170 (*Plates xi-xvii, Figs. 36-42*)
 medical arrangements for 'Honker', 261
 medical arrangements, January-March, 1944, 237
 medical orders of battle (1943), and location statements, 188
 medical arrangements for 'Olive', 386 (*Figs. 96-103*)
 medical plans for 'Olive', 382
 medical stores and equipment of, 565
 'Olive', 358 (*Figs. 86-92*)
 order of battle, April 9, 1945, 501
 orders of battle, Sept. 1943 and Oct. 1943, 185
 principal diseases affecting, 506, 523
 ratio of sick, 512
 rations and medical comforts of, 568
 relative morbidity and casualty rates in, 505, 506

- Eighth Army medical units (1943), 186, 502
 in pursuit to Arno, 329
 in pursuit to Arno, evacuation chains, 326 (*Figs. 79-81*)
 in Sicily, 5, 19
 strength, April 1945, 470
- Eisenhower, General, 92, 94, 195
- Elba seized, 318
- E.L.A.S., 597, 598
- Enteric Group, 55, 543, 559, 560, 561, 617
- Environmental sanitation, 549, 583
 in Italian Gruppi, 550
- Evacuation (*see* Medical Evacuation)
- Exhaustion cases in Operation 'Olive', 385
- Faenza, 357, 370, 372, 374, 377, 392, 393, 396, 397, 406, 412, 416, 423, 424, 427, 431, 437, 441, 442, 474, 475, 492, 561 (*Figs. 89, 92, 92, 98, 99, 113, 119, 120*)
- 'Fantails', 456, 458, 490
- Ferrara, 356, 357, 365, 456, 461, 463, 469, 477, 478, 479, 494, 495, 499, 500, 568 (*Figs. 89, 115, 116, 121, 122, 124, 125, 128, 130, 131*)
- Field ambulances, 574, 586
 Canadian, in Italy, 273
 equipment, 575
 in amphibious operations in N. Italy, 491
 in Greece, 612
 in Sicily, 64
 light, 576
 transport, 576
 use of jeeps and, 183
 with Army troops, 184
- Field Dressing Station of Indian 8th Division, 349
- Field Dressing Stations, 578
 Canadian, in Italy, 274
 employment of, July 1944-June 1945, 592
 equipment, 578
 transport, 579
 use of, in battle, 580
- Field hospital, 580
- Field hygiene sections, divisional, 584
- Field Surgical Units, 65, 577
 Canadian, in Italy, 275
- Field Transfusion Units, in Sicily, 57, 65
 Canadian, in Italy, 275
- Field units, attachment of special investigational teams to, 184
- Fifth Army (U.S.), in Italy
 British component, medical branch, at Anzio, 241
 British increment, medical branch in 'Olive', 410 (*Figs. 104, 105*)
 in advance to Winter Line, 136 (*Figs. 28-30*)
 in assault on Winter Line, 164 (*Figs. 32-35*)
 in 'Buckland', 465 (*Figs. 117, 118*)
 in 'Olive', 356, 375 (*Figs. 93-95*)
 in pursuit to Arno, 317 (*Figs. 77, 78*)
 loses VI Corps, 318
 medical cover of British component, 119, 142, 167 (*Figs. 23, 30, 35*)
 order of battle of British component, 185, 187
- Flambo, 173
- Flint stretcher gear, 66
- Florence, 125, 301, 302, 310, 311, 313, 314, 323, 325, 330, 331, 332, 333, 336, 337, 338, 342, 350, 356, 357, 358, 374, 375, 410, 411, 412, 413, 422, 435, 437, 443, 444, 445, 447, 454, 558, 567, 568 (*Figs. 75, 82, 93, 95, 104, 105, 114*)
- 'Flying fox', 293
- Foggia, 94, 114, 118, 125, 131, 132, 134, 148, 171, 172, 173, 174, 175, 176, 179, 188, 192, 238, 455, 523, 524, 533, 555, 563 (*Figs. 20, 24, 25, 26, 36, 37, 38, 40, 114*)
- Force '140', 598
- Force '141', 4
- Force '142', 608
- Force '292', 594, 595
- Force '343', 4
- Force '545', 5
- Forli (on the Via Emilia), 357, 358, 367, 370, 392, 393, 396, 406, 407, 412, 424, 427, 428, 431, 432, 441, 442, 443, 470, 473, 474, 475, 477, 478, 492, 495 (*Figs. 89, 90, 92, 92, 98, 99, 113, 119, 120, 121, 122, 129, 130, 131*)
- Formations, British and Allied (*see* Part II of Index)
- Fortbase (Tripbase), 100, 108, 118, 171, 172, 173, 181
- Four-wheel-drive ambulance cars, 182
- German military hospitals, control of, 486, 487, 497
- German P.o.W. hospitals in Italy, 486, 494
- Gothic Line, assault on and breach of, 355
- Goumiers, 4th Tabor of, with U.S. 1st Division at Troina, 23
- Greece, Allied Land Forces in, formations and medical units (*see* Part II of Index)
 events in, prior to return, 597
 events subsequent to cessation of hostilities in, 606
 health of troops in, 613
 Land Forces (Changing composition of) 1944-1946, 619
 outbreak of hostilities in, December 1944, 600
 relief activities in, 610
 return to, 597 (*Figs. 133-136*)
 return to, reflections upon, 618
- Greek Government in Cairo, 598
- Greekmil, 416
- Gustav Line, 167, 194, 195, 196, 197, 200, 203, 226, 243, 247, 267, 268
- Health of troops in Italy, 504-548
 conditions affecting, 548
 in Greece, 613
 in Sicily, 47

- 'Hermonforce', 277
 'Hitler Line', 194, 195, 243, 246, 247, 252, 254, 258, 267, 268, 273, 288
 'Honker' Operation, 246
 Eighth Army Medical Arrangements, 261
 Medical Cover, 267
 Hospital, bedstate in Italy, October-December 1944, 390, 453
 diseases causing admission to, in Italy, 504-571
 duration of stay in, in Italy, 505, 510
 field, 580
 planning in pursuit to Arno, 322, 329
 ship, bombing of, 121, 223, 236
 Hospital Ships and carriers, available for Operation 'Husky', 11, 60, 67, 70
 in Italian campaign, 100, 102, 177, 238, 323, 324
 situation in Italy (1943), 170, 174, 176, 178 (*Plates XIV-XVI*)
 situation in Italy (1944), 261
 situation in Sicily, 75
 Hospitals, Canadian, admissions to, August-December 1944, 408, 409
 Canadian 200-bed, in Italy, 275
 civil, in Italy, 563
 general, and casualty clearing stations, 579, 586
 in Greece, 603, 608, 618
 (General) Location
 July 1, 1944, 446
 September 30, 1944, 448
 December 31, 1944, 454
 German P.o.W., in Italy, 486, 494, 496
 H.Q. III Corps, 598, 599
 H.Q. Aegean Command, 594
 'Husky', Operation, 17, 63
 (see also Sicily, Campaign in)
 medical evacuation plan for, 14
 medical order of battle of, 87
 order of battle of, 86
 Hygiene and sanitation, lessons of Sicilian campaign, 70
 Hygiene, lessons of Italian campaign, 584, 586
 Iesi, 325, 336, 383, 384, 385, 389, 390, 392, 397, 401, 403, 406, 408, 409, 428, 448, 454, 455 (*Figs. 96, 97, 98, 99, 100, 114*)
 Immersion foot in Italy, 547, 548, 572
 Infective hepatitis, 531-533, 548
 in Canadian troops, 531
 in New Zealand troops, 428, 432
 Intercommunication in Sicily, 67
 Investigational teams, attachment to field units, 184
 Italian Fascist divisions, 457
 medical units, 277, 324, 412, 503, 567
 Italian troops, sanitary conditions among, 550
 Italy, campaign in, 91-593 (*Plates XI-XXVIII, Figs. 19-131*)
 advance to Winter Line (1943), 123-144 (*Figs. 24-30*)
 assault on Winter Line, 144 (*Figs. 31-35*)
 clothing of troops in, 573
 difficulties encountered by Army Medical Services in, 182
 diseases prevalent among civilians in, 554 (*Fig. 132*)
 formations and medical units (see Part II of Index)
 general hospitals in, July to December 1944, 446, 448, 454 (*Fig. 114*)
 health of troops in, 504-548
 health of troops in, conditions affecting, 548
 hospital bedstate in (1943), 170, 174, 176, 178
 invasion of, 108 (*Figs. 20-23*)
 invasion of, medical planning for, 96-108
 invasion of, preparatory planning, 93
 January to June 1943, 194-300 (*Plates XVIII-XXV, Figs. 43-70*)
 January to May 1945, 456-503 (*Figs. 115-131*)
 June to December 1944, 301-455 (*Plates XXVI-XXVIII, Figs. 71-114*)
 lessons learnt from, 574
 malaria control in, 524, 526, 573, 585, 586
 medical aspects, 504-593
 medical supplies in, 565
 preparation for, 92-108 (*Fig. 19*)
 river crossings in, medical arrangements, 143, 150, 157, 208, 283, 293, 405
 sanitary conditions in, 548
 strategic and other considerations regarding, 92
 terrain in, 142, 196, 243
 water supplies in, 552, 557
 Jeeps, stretcher-bearing, 151, 158, 160, 183, 293 (*Plate XX*)
 Jeep stretcher carrying frames (Jeeps modified), 65
 'Kangaroos', 456, 460
 Klagenfurt area, hospitals in, 486
 Laboratories, mobile Canadian, in Italy, 276
 Lampedusa, capture of, 16
 Leese, General, 150, 302, 367
 Leghorn, capture of, 322 (*Fig. 78*)
 Leros, seizure and loss of, 594
 Lighting, sets for medical units, 183
 'Lindforce', 315, 346
 Malaria, 47, 523, 585, 586
 in Canadian 1st Div., 523
 in New Zealand 2nd Div., 524
 in 5th Div., 523, 526
 in Greece, 613, 615, 616
 in Italian Troops, 528
 in X Corps, 547
 in Sicily, 28, 47, 70, 523, 587

- Malaria Adviser, 529
 Committee, 527, 585
 control in mobile warfare, 586
 precautions against, 524, 526, 573
 seasonal fluctuations of, 511
- Malta, casualties from Sicily in, 76
 preparations in, for 'Husky', 14
- 'Manna' Operation, 597
- Maxillo-facial, neurosurgical and ophthalmic
 teams, combined, in Italy, 183
- Medical Arrangements
 Allied Armies in Italy, 322
 Eighth Army, October–December, 1943,
 170
 December 1943–March 1944,
 237
 Operation 'Honker', 261
 Operation 'Olive', 386
 Operation 'Buckland', 473
- Greece, 607
- X Corps, November 13, 1943, 189
 January 16, 1944, 207
- Medical Branch Divisional H.Q., 576
- Medical Cover, Italy
 1st Div., 232, 291
 1st Armd. Div., 416, 501
 Cdn. 1st Div., 117, 133, 151, 267, 334,
 397
 N.Z. 2nd Div., 135, 156, 219, 290, 337,
 428, 492
 4th Div., 279, 336, 423
 Ind. 4th Div., 161, 215, 292, 344,
 432
 5th Div., 116, 132, 162, 209, 235, 291
 Cdn. 5th Armd. Div., 237, 269, 334,
 394
 6th Armd. Div., 341, 420, 486
 S.A. 6th Armd. Div., 278, 342, 443,
 488
 Ind. 8th Div., 131, 153, 285, 346, 435,
 497
 Ind. 10th Div., 294, 351, 437, 500
 46th Div., 142, 169, 213, 424
 56th Div., 142, 169, 208, 233, 427,
 489
 78th Div., 294, 351, 437, 500
 advance to Winter Line (1943), 130,
 142
 assault on Gustav Line, 208 (Figs. 46–
 49)
 assault on Winter Line, 150, 167
 Athens and Piraeus, 601
 Operation 'Avalanche' (British Com-
 ponent), 119 (Fig. 23)
 Operation 'Baytown', 116
 Operation 'Buckland', 486
 Operation 'Corkscrew', 16
 Operation 'Honker', Canadian, 267
 (Figs. 62–67)
 Operation 'Olive', 416 (Figs. 106–113)
 Operation 'Shingle' (British Com-
 ponent), 231
 in Peloponnesus, 604
 in pursuit to Arno, 336 (Figs. 84, 85)
 in Salonika, 604
 for invasion of Sicily, 26 (Figs. 6–17)
- Medical Evacuation, 'Buckland', 472 (Figs.
 119–122, 125)
 chain, Anzio, 233 (Figs. 53, 54)
 chain, at assault on Gustav Line, 215
 (Fig. 47)
 from Cassino, 217
 in Greece, 602, 603, 607
 in pursuit to Arno, 323, 326 (Figs. 79–
 81)
 in Sicily, 38, 70, 75 (Figs. 10, 12)
 in Sicily, plan for, 12, 14
 lessons of Italian campaign in, 580,
 586
 Operation 'Honker', 262
 Operation 'Olive', 389
 plans for Italian campaign, 99
 plans for Operation 'Olive', 384
- Medical intelligence concerning Sicily, 4
- Medical maintenance for Italian campaign,
 102
- Medical Officers with large units, 184
- Medical Orders of Battle
 Eighth Army, July 9, 1943, 87
 November 1943, 191
 Operation 'Olive', 386
 15 Army Group, December 31, 1944,
 450
 V Corps, September 23, 1943, 189
 X Corps, Operation 'Avalanche', 187
 December 31, 1943, 190
 March 18, 1944, 299
 XIII Corps, Operation 'Baytown', 186
 September 30, 1943, 188
- Medical planning for Eastern Task Force, 9
- Medical stores and equipment in Italy, 565
- Medical supplies in 'Husky', 60
 in Italian campaign, 565
- Medical Tactical Plan, Italy
 Assault landing 231st Bde., 98
 Operation 'Baytown', 96
 Operation 'Buckland', 470
 Operation 'Olive', 383
 Operation 'Shingle', 231
 Operation 'Slapstick', 104
 Mobile medical unit, 583
 Monastery, Cassino, bombing of, 206
- Medical transport in 'Husky', 59, 61
- Medical Units, British and Allied (see Part II
 of Index)
 causes of admission to, 504
 mobile, 583
 tactical use of, 580, 586
- Mobile dental units, 583
- Mobile medical units, 583
- Mobile Naval Base Defence Organisation (2)
 in Sicily, medical component, 89
- Mobile warfare, malaria control in, 586
- Monte Cassino, 125, 194, 195, 197, 201, 203,
 205, 221, 246, 247, 251, 281, 282, 572
 (Figs. 44, 45, 49, 56)
- Montgomery, General, 5, 94, 110, 149, 150
- Morbidity and mortality in Sicily, Eighth
 Army, 77
- Morbidity rate, relative, in Italy, 506, 508,
 511
- Morphine syrettes (Tubunic), 70

- Motor Ambulance Convoy, Canadian, in Italy, 276
- Motor Ambulance Convoy in Sicily, 66
- Mule litter, 293, 422 (*Plate XIX*)
- Naples, 91, 92, 94, 95, 96, 99, 101, 102, 110, 114, 116, 135, 136, 144, 169, 170, 173, 178, 179, 181, 193, 196, 215, 222, 223, 232, 235, 254, 261, 263, 280, 291, 317, 322, 324, 325, 328, 330, 338, 341, 349, 385, 408, 412, 446, 449, 454, 537, 545, 555, 556, 562 (*Figs. 20, 21, 22, 24, 30, 40, 114*)
 hospital build-up in, 99, 101
 typhus epidemic, 562
- Neurosurgical, maxillo-facial and ophthalmic teams, combined, in Italy, 183
- New Zealand Medical Services in Italy, 495
 surgical team in Sicily, 89 *footnote*
- North Africa, evacuation of wounded to, 100
- Nursing officers, 70
- 'Olive', Operation, 355 (*Plates XXVI-XXVIII, Figs. 86-95*)
 medical plans for, 382
 medical order of battle, 386
 order of battle for, 447
 tactical plan for, 356
 terrain of, 357
 weather during, 358
- Operation 'Anvil', 310, 317, 318, 356
- Operation 'Avalanche', 94, 96, 100, 101, 102, 103, 119
- Operation 'Baytown', 94, 96, 99, 102, 103
- Operation 'Buckland', 456
- Operation 'Chuckle', 406
- Operation 'Corkcrew' medical cover, 16
- Operation 'Honker', 246
- Operation 'Husky', Tactical plan 5; assault landings, 17
- Operation 'Manna', 597
- Operation 'Olive', 355, 382
- Operation 'Overlord', 91, 92, 93, 94, 185, 195, 320, 341
- Operation 'Shingle', 194, 195, 196, 222, 231
- Operation 'Slapstick', 96, 104
- Ophthalmic, neurosurgical and maxillo-facial teams, combined, in Italy, 183
- Ophthalmology, 583
- Orders of Battle
 Allied Armies in Italy, January 22, 1944, 294
 May 11, 1944, 299
 August 25, 1944, 447
 Eighth Army, April 9, 1945, 501
 15 Army Group, July 9, 1943, 86
 X Corps u/c U.S. Fifth Army, October 30, 1943, 185
 XIII Corps, September 3, 1943, 185
- Padua, 463, 470, 479, 483, 494, 501, 561, 567, 568 (*Figs. 116, 125, 126, 128, 130, 131*)
- Pantellaria, capture of, 16
- Partisans, 457, 459, 461, 469, 470
- Pediculosis, 557
- Peloponnesus, 604
- Perugia, 304, 306, 310, 325, 328, 332, 333, 334, 342, 345, 347, 350, 351, 352, 355, 382, 384, 389, 397, 400, 408, 409, 428, 433, 434, 448, 454, 499, 527, 589 (*Figs. 72, 73, 80, 81, 82, 84, 96, 97, 114*)
- Pesaro, 317, 356, 358, 360, 365, 383, 387, 390, 391, 397, 401, 423, 443, 470, 473, 474, 478, 553, 560 (*Figs. 76, 86, 87, 97, 98, 99, 102, 120*)
- Piraeus, 601
- Political effects of victory in Sicily, 25
- 'Popski's Private Army', 490, 494
- 'Porterforce', 369, 370, 405, 406
- 'Prestonforce', 608
- Professional lessons of Italian campaign, 582
- Psychiatric work in Italy (1943-44), 241
- Psychiatry, 583
- Q.A.I.M.N.S. personnel at Anzio, 236
- Quebec Conference, 318
- Radiology, 582
- Rations in Greece, 617
 in Sicily, 55
- Rations and medical comforts in Italy, 568
- Ravenna, 301, 357, 358, 365, 370, 372, 374, 393, 406, 407, 473, 474, 475, 478, 490, 498, 499, 528, 553, 560, 561, 589 (*Figs. 89, 92, 119, 120, 121, 131*)
- Refugees and displaced persons in Austria, 570
- Refugees and displaced persons, civilian, in Italy, 551, 559, 563
- Refugees, Yugoslav, 565
- Refuse disposal in Greece, 617
 in Italy, 548, 558
- Reggio (Calabria), 91, 93, 94, 108, 110, 114, 117, 118, 119, 170, 171, 523, 554, 555 (*Figs. 19, 20*)
- Regimental Medical Officers, transport for, 574
- Reorganisation of Canadian field medical units, 403
 New Zealand field medical units, 430
- Riccione, 362, 390, 391, 392, 393, 401, 402, 403, 404, 407, 423, 429, 430, 443, 448, 454, 473, 474, 478 (*Figs. 87, 98, 100, 114, 120*)
- Rimini, 125, 244, 301, 318, 356, 357, 360, 364, 365, 367, 369, 389, 390, 391, 392, 393, 394, 395, 396, 401, 403, 404, 405, 406, 420, 423, 424, 429, 435, 441, 448, 470, 529, 531, 559, 560, 561, 572 (*Figs. 87, 88, 89, 90, 97, 98, 99, 119, 120, 122*)
- River
 Adige, 457, 463, 469, 470, 477, 480, 482, 483, 486, 494, 499, 500, 568 (*Figs. 89, 116, 121, 124, 131*)
 Arno, 301, 310, 311, 313, 314, 315, 317, 322, 333, 336, 337, 338, 342, 355, 375, 435, 443 (*Figs. 74, 75, 78, 93, 95, 104, 105*)
 Gari, 196, 197, 220, 246, 249, 267, 268, 286, 287 (*Fig. 56*)

- Garigliano, 125, 139, 141, 142, 144, 164, 166, 194, 195, 196, 198, 200, 208, 209, 214, 243, 247, 249, 280, 281, 295 (Figs. 24, 28, 29, 32, 33, 35, 43, 46, 47, 48, 57, 62, 63, 64, 65, 68, 69)
- Lamone, 301, 372, 374, 377, 396, 406, 407, 423, 430, 431, 441, 442, 492 (Figs. 89, 91, 92, 93, 113, 131)
- Liri, 139, 196, 201, 243, 249, 256, 272, 288, 289, 290 (Figs. 29, 33, 44, 55, 56, 57, 58, 59, 60, 62, 63, 64, 65, 66, 67)
- Melfa, 254, 256, 267, 271, 273, 275, 288 (Figs. 32, 34, 59, 65, 66, 67)
- Po, 355, 456, 457, 459, 463, 468, 469, 477, 479, 480, 482, 486, 490, 491, 492, 493, 496, 499, 500, 561, 568 (Figs. 89, 115, 116, 118, 120, 121, 122, 124, 125, 127, 128, 131)
- Rapido, 194, 196, 197, 198, 200, 201, 203, 205, 217, 220, 221, 243, 244, 246, 278, 294 (Figs. 32, 33, 34, 44, 45, 49, 55, 56, 62, 63, 64, 65, 66, 67, 70)
- Reno, 357, 457, 458, 459, 460, 461, 465, 468, 489, 492, 496, 500, 501 (Figs. 89, 94, 115, 118, 123, 131)
- Ronco, 369, 370, 396, 405, 406, 424, 440, 441 (Figs. 89, 92, 112, 113, 131)
- Sangro, 91, 92, 125, 131, 132, 144, 145, 146, 148, 149, 150, 153, 154, 155, 157, 158, 159, 174, 179, 237, 292, 564 (Figs. 24, 25, 27, 31, 39, 41, 42)
- Santeramo, 372, 374, 377, 379, 416, 422, 456, 457, 458, 459, 492, 496, 497, 498 (Figs. 89, 92, 94, 106, 131)
- Savio, 367, 369, 396, 404, 405, 423, 424, 440 (Figs. 89, 90, 92)
- Senio, 301, 372, 374, 397, 407, 431, 441, 457, 458, 475, 492, 494, 496, 497, 498 (Figs. 89, 91, 92, 94, 106, 112, 113, 121, 131)
- Tiber, 223, 258, 259, 291, 292, 302, 304, 310, 314, 333, 344, 345, 350, 351, 352, 354, 355 (Figs. 55, 61, 72, 74, 84)
- Trigno, 126, 127, 128, 130, 131, 153, 174, 563 (Figs. 24, 25, 26, 41)
- Volturno, 91, 116, 136, 138, 139, 142, 143, 286 (Figs. 24, 26, 28, 29, 30, 32, 34, 35, 55, 83)
- crossings in Italy, medical arrangements, 143, 150, 157, 208, 283, 293, 495, 490
- Rome, 91, 93, 94, 125, 141, 146, 164, 194, 195, 197, 222, 243, 254, 256, 259, 261, 266, 272, 279, 292, 301, 302, 318, 322, 325, 328, 330, 333, 334, 336, 337, 348, 349, 351, 408, 428, 432, 449, 454, 538, 539, 541 (Figs. 50, 55, 61, 71, 79, 80, 81, 114)
- 'Sackforce', 310, 314, 342, 344
- Salerno, 91, 93, 94, 95, 110, 112, 113, 114, 121, 123, 125, 141, 143, 193, 239, 537, 547 (Figs. 20, 21, 22, 23, 40)
- Salerno beaches, 110 (Fig. 21)
medical distribution and organisation on, 120 (Fig. 23)
- Salonika, 604
- Samos, 595, 596
- Sample Statistics, 72-85, 504-522, 613-616
- Sandfly fever, 543
- Sanitary conditions in Greece, 617
in Italy, 548
in Italy, civilian, 558
- San Marino, 365 (Fig. 88)
refugees in, 559
- Scabies, 544, 557
- Scobie, General, 598, 599
- 'Shingle' Operation, 194, 222, 231
- Senigallia, 317, 384, 392, 403, 404, 428, 429, 430, 431, 432, 448, 454, 495 (Figs. 76, 96, 97, 98, 99, 114)
- Sicily, 92, 93, 102, 103, 118, 135, 164, 170, 174, 262, 324, 589 (Figs. 19, 20)
- Allied Land Forces in, Formations and Medical Units (see Part II of Index)
- campaign in, 1-90 (Plates 1-x, Figs. 1-18)
health of troops in, 47
invasion of, 17 (Figs. 2-5)
invasion of, medical cover for, 26 (Figs. 6-17)
medical intelligence concerning, 4
medical planning for, 9, 62
medical provision for, 64
operations in, administrative lessons learnt, 59-62
preparation for, 2
sample statistics in, 72
tactical plan, 5
terrain of, 3
hospitals in, July 1944, 446
medical base in, 100, 101
- Sick (see also Casualties and Sick)
- Sick in Eighth Army, statistics concerning, 507-513
- Siena, 308, 310, 320, 325, 333, 337, 338, 342, 343, 350, 374, 428, 447 (Figs. 77, 78, 82, 104)
- 'Slapstick', Operation, 96
medical planning for, 104
- Specialist departments in Italian campaign, 582
- Specialist services for 'Olive', 385
in Sicilian campaign, 55, 61
- 'Specialist Trinity', 183
- Stretcher-bearer chain, 422 (Plates xxvi-xxxviii)
- Surgery, forward, 339 (Plate xxiv)
- Surgery in Italian campaign, 582
- Surgical centres, advanced, in Italy, 183
- Surgical plan in 'Buckland', 471, 475 (Figs. 119, 120, 122, 125, 128)
- Surrendered Enemy Personnel, 497
- Taranto, 91, 96, 110, 114, 117, 118, 127, 131, 136, 155, 156, 161, 170, 171, 178, 188, 189, 192, 219, 220, 238, 240, 261, 264, 278, 423, 428, 443, 446, 455, 472, 499, 500, 523, 533, 554, 555, 557, 565 (Figs. 20, 36, 40, 114)
- Tents at Anzio, 235

- Termoli, 114, 125, 126, 127, 130, 131, 134, 155, 157, 171, 172, 174, 175, 176, 179, 181, 182, 193, 238, 240, 261, 264, 294, 334 (Figs. 20, 24, 25, 26, 38, 40, 41)
- Transfusion materials in Sicily, 69
- Transfusion Service in Sicily, 56, 65, 69
- Transfusion services, Operation 'Olive', 385
- Transfusion Units in Sicily, 56, 65
- Trasimene Line, 306
- Travois*, 170
- Trench foot (*see* Immersion Foot)
- 'Trident' Conference, 92
- Trieste, 456, 463, 465, 480, 483, 484, 486, 494, 500, 542, 551, 553, 561 (Figs. 176, 129, 130, 131)
- 'Tripbase' (*see* 'Fortbase')
- Typhoid fever, 557, 559
- Typhus, 55, 544, 562, 617
- U.N.N.R.A., 497, 610
- Vasto, 125, 128, 131, 151, 152, 155, 156, 159, 160, 162, 176, 179, 180, 181, 182, 183, 193, 238, 239, 240, 292, 334, 423, 446, 557, 564, 565 (Figs. 25, 31, 38, 40, 42)
- Veneral Diseases, 55, 385, 533, 616
- Penicillin therapy in, 538
- Canadian V.D. Control Officers, 539
- Venice, 456, 460, 468, 490, 494, 499, 551, 561 (Figs. 116, 125, 126, 128, 130, 139)
- Vitamin supplies in Austria, 570
- Wastage rate, relative, in Eighth Army in Italy, 508
- Water supplies in Greece, 617
- in Italy, 552, 557
- Weapons carrier bearing stretchers, 397 (Plate XXI)
- 'Weasels' for transport of wounded, 397
- West African section of general hospital, 178, 192, 297, 298
- Western Task Force, 5
- Winter Line, 91, 92, 125, 141, 144, 146, 148, 164, 167, 194
- advance to, medical cover, 130, 142
- assault on, medical cover, 150, 167
- Wireless set of 78th Div., 184
- Working parties for Casualty Clearing Stations, 184
- Yalta Conference, 375
- Yugoslav hospitals, 297
- Yugoslav refugees, 565
- Yugoslav troops in Istria, 463, 465, 484, 485

PART II

British and Allied Formations and Medical Units

(1) Sicily

British Formations

- Eighth Army, 5
- XIII Corps, 6, 25
- XXX Corps, 25
- 1st Airborne Division, 5, 17, 20
- 1st Division, 16
- 5th Division, 5, 17, 18, 19, 22, 25
- 50th Division, 5, 19, 25, 47, 80-85
- 51st Division, 5, 18, 19, 22, 25, 47, 79
- 78th Division, 22, 23, 25, 47
- 4th Armoured Brigade, 25
- 23rd Armoured Brigade, 19
- 231st Infantry Brigade, 5, 19, 21, 23

Special Units

- 2nd Commando Unit, 25
- 3rd Commando Unit, 21
- Special Raiding Squadron, 5

Canadian Formations

- Canadian 1st Division, 5, 8, 18, 19, 20, 21, 23, 25, 49
- Canadian Army Tank Brigade, 41

United States Formations

- U.S. Seventh Army, 5, 19
- U.S. Provisional Corps, 19, 22
- U.S. 1st Division, 14, 18, 23
- U.S. 2nd Armoured Division, 19, 23
- U.S. 3rd Division, 18, 19, 24, 25
- U.S. 9th Division, 23, 24, 25
- U.S. 45th Division, 18, 19, 23
- U.S. 82nd Airborne Division, 19
- U.S.A.A.C. 802 Medical Evacuation Squadron, 12

British Medical Units

General Hospitals

- 11 B.G.H., 39
- 33 B.G.H., 39
- 54 B.G.H., 36, 46
- 58 B.G.H., 39, 46
- 66 B.G.H., 36
- 70 B.G.H., 46
- 83 B.G.H., 46

Field Hospitals

- 2 Fd. Hosp., 39
- 6 Fd. Hosp., 39

Casualty Clearing Stations

- 3 C.C.S., 30, 34, 36, 37, 46 (Figs. 9, 10, 12, 16, 17)
- 4 C.C.S., 30, 32, 37 (Figs. 9, 10, 12)
- 5 C.C.S., 39, 40, 46 (Figs. 9, 12, 16)
- 7 C.C.S. (Lt. Sec.), 26, 28, 35, 46 (Figs. 12, 14, 15)
- 8 C.C.S., 16
- 15 C.C.S. (Lt. Sec.), 26, 27, 28, 46 (Figs. 6, 10, 12, 14, 15, 16)
- 21 C.C.S., 28, 30 (Figs. 10, 12)

Field Ambulances

- 2 Fd. Amb. (1st Div.), 16
- 3 Fd. Amb. (1st Div.), 16
- 11 Fd. Amb. (78th Div.), 38, 39 (Fig. 16)
- 14 Fd. Amb. (4 Armd. Bde.), 35 (Figs. 11, 12)
- 16 Fd. Amb. (Para.), 30 (Fig. 8)
- 132 Fd. Amb. (XIII Corps), 27, 28 (Figs. 12, 13, 14, 15)
- 137 Fd. Amb. (1st Div.), 16
- 140 Fd. Amb. (50th Div.), (Figs. 8, 11, 13, 17)
- 141 Fd. Amb. (5th Div.), 26 (Figs. 11, 13, 14, 15)
- 149 Fd. Amb. (50th Div.), 26, 27, 28, 32 (Figs. 6, 7, 8, 11, 13, 14, 16, 17)
- 150 Lt. Fd. Amb. (23 Armd. Bde.), (Fig. 17)
- 151 Lt. Fd. Amb. (Army), 38, 39 (Figs. 9, 10, 11, 12, 16)
- 152 Fd. Amb. (78th Div.), 39 (Fig. 16)
- 158 Fd. Amb. (5th Div.), 26, 31 (Figs. 8, 11, 13, 14, 15)
- 159 Fd. Amb. (XXX Corps), 28, 30, 34, 39 (Fig. 10)
- 164 Fd. Amb. (5th Div.), 32 (Figs. 11, 12, 13, 14, 15)
- 174 Fd. Amb. (51st Div.), (Figs. 16, 17)
- 175 Fd. Amb. (51st Div.), 30, 32 (Fig. 9)
- 176 Fd. Amb. (51st Div.), (Figs. 9, 16, 17)
- 178 Fd. Amb., 40
- 186 Fd. Amb. (50th Div.), 30, 31 (Figs. 6, 7, 8, 9, 10, 11, 13, 16, 17)
- 200 Fd. Amb. (231 Bde.), 32 (Figs. 9, 10, 16, 17)
- 217 Fd. Amb. (78th Div.), 39 (Figs. 16, 17)

Field Dressing Station

- 3 F.D.S., 30, 36 (Fig. 12)

Field Hygiene Sections

- 18 Fd. Hyg. Sec., 16
- 19 Fd. Hyg. Sec. (Figs. 11, 13, 14, 15)
- 24 Fd. Hyg. Sec., (Fig. 15)

Field Surgical Units

- 1 F.S.U., (Figs. 14, 15)
- 2 F.S.U., 31 (Figs. 13, 15)
- 3 F.S.U., (Fig. 15)
- 4 F.S.U., 31, 35 (Fig. 13)
- 5 F.S.U., 26, 35 (Figs. 13, 14, 15)
- 22 F.S.U., 39, 89
- 23 F.S.U., 16
- 24 F.S.U., 16
- 29 F.S.U., 39
- 35 F.S.U., 29, 32
- 36 F.S.U., 30, 32

Field Transfusion Units

- 3 F.T.U., (Figs. 13, 14)
- 4 F.T.U., 26, 31, 35 (Fig. 15)
- 7 F.T.U., 18
- 35 F.T.U., 29

Motor Ambulance Convoys and Ambulance Car Companies, R.A.S.C.

- 219 A.C.C., 39 (Fig. 12)
- 567 A.C.C., 39
- 60 M.A.C., 39
- 146 M.A.C., 28, 32 (Fig. 12)

Miscellaneous Special Units

- 1 Mobile Dental Unit, (Fig. 15)
- 8 Mobile Malaria Field Laboratory, 47 (Fig. 15)
- M.N.B.D.O. (a), 32
- 2 Mobile Ophthalmic Unit, 35

Canadian Medical Units**General Hospitals**

- 5 Cdn. G.H., 34, 41, 42
- 15 Cdn. G.H., 15, 43

Field Ambulances

- 2 Cdn. Lt. Fd. Amb., 41 (Figs. 11, 13, 15)
- 4 Cdn. Fd. Amb., 28, 30, 32, 41 (Figs. 9, 14)
- 5 Cdn. Fd. Amb., 28, 30, 31, 32, 36, 41 (Figs. 9, 15)
- 9 Cdn. Fd. Amb., 29, 30, 36, 37, 39 (Figs. 9, 14, 15)

Field Dressing Stations

- 1 Cdn. F.D.S., 29, 30, 31, 32, 34, 36, 37, 41 (Figs. 9, 14, 15)
- 2 Cdn. F.D.S., 30, 32, 36 (Figs. 9, 14, 15)

Field Surgical Units

- 1 Cdn. F.S.U., 30, 31, 32, 34 (Figs. 9, 14, 15)
- 2 Cdn. F.S.U., 30, 32, 37 (Figs. 9, 14, 15)

Field Transfusion Unit

- 1 Cdn. F.T.U., 30, 32

New Zealand Medical Unit

- New Zealand Surgical Team (with 21 C.C.S.), 28, 30, 89 (footnote)

(2) Italian Mainland**British Formations**

- Eighth Army**, 91, 94, 101, 108, 114, 123, 125, 142, 144, 150, 171, 186, 191, 194, 196, 238, 241, 244, 256, 261, 277, 295, 299, 301, 302, 314, 315, 320, 330, 332, 358, 364, 365, 367, 375, 379, 382, 388, 389, 391, 410, 432, 447, 456, 457, 463, 470, 474, 476, 512-14
- V Corps**, 104, 114, 119, 125, 127, 128, 130, 146, 149, 151, 171, 189, 191, 194, 238, 240, 244, 292, 295, 299, 301, 302, 315, 332, 334, 336, 356, 357, 364, 365, 367, 369, 370, 372, 374, 382-4, 388, 389, 391-397, 401, 419, 423, 427, 432, 438, 441, 448, 456-8, 460, 463, 474-7, 479, 484, 488, 501, 516, 517, 578
- X Corps**, 91-4, 110, 112-14, 119, 121, 123, 136, 138, 139, 141-3, 164, 166, 185-7, 189, 194, 196, 198, 200, 203, 207, 232, 241, 246, 261, 264, 277, 295, 299, 302, 303, 306, 310, 311, 314, 315, 330, 333, 334, 342, 344, 346, 348, 350, 356, 358, 365, 367, 379, 382, 384, 385, 388, 389, 392, 393, 416, 432, 448, 457, 458, 474, 475, 477, 502, 519-21, 546, 562, 568, 572
- XIII Corps**, 94, 108, 110, 113, 114, 119, 125, 127, 128, 130, 134, 146, 149, 171, 175, 177, 182, 185, 188, 191, 194, 239, 246, 249, 254, 256, 261, 262, 276, 279, 286, 288, 295, 300-3, 306, 308, 310, 311, 313-15, 330, 332, 333, 336, 337, 342, 344, 345, 352, 356, 357, 367, 374, 375, 377, 379, 382, 385, 410-13, 416, 428, 432, 443, 447, 457, 458, 460, 461, 463, 470, 471, 475-7, 480, 484, 485, 502, 514-16, 543
- XXX Corps**, 94, 98, 99, 185
- 1st Division**, 150, 196, 223, 226-9, 232, 234, 235, 258, 259, 291, 294, 300, 314, 332, 333, 336, 356, 375, 377, 379, 410, 412, 413, 415, 416, 428, 435, 447, 457
- 1st Armoured Division**, 302, 332, 357, 362, 364, 365, 367, 416-19, 423, 448, 501
- 1st Airborne Division**, 96, 104, 105, 108, 110, 119, 160, 171, 175, 189
- 4th Division**, 213, 244, 246, 249, 251, 252, 279, 285, 286, 290, 300, 302, 304, 306, 308, 310, 311, 313, 314, 332, 333, 336, 337, 357, 360, 362, 364, 365, 367, 369, 370, 372, 388, 401-3, 419, 423, 424, 428, 434, 440, 448
- 5th Division**, 94, 108, 110, 113, 119, 127, 128, 130, 132, 133, 148, 149, 162, 177, 185, 187, 188, 191, 196-8, 200, 207, 209, 210, 229, 230, 235, 238, 244, 258, 259, 291, 295, 300, 315, 397, 423, 457
- 6th Armoured Division**, 107, 213, 246, 256, 261, 286, 287, 300, 302, 304, 306, 308, 310, 311, 314, 315, 332, 333, 341, 342, 344, 347, 367, 375, 377, 379, 410, 412, 413, 415, 416, 420, 447, 461, 463, 477, 479, 482-4, 486, 488, 502
- 7th Armoured Division**, 95, 116, 120, 135, 136, 138, 141, 164, 185, 187
- 46th Division**, 94, 110, 113, 114, 116, 120, 138, 139, 141, 142, 164, 166, 185, 187, 197, 198, 200, 207, 211-13, 215, 244, 247, 280, 295, 315, 332, 357, 360, 362, 364, 365, 367, 369, 370, 372, 385, 394, 417, 423, 424, 426, 431, 434, 439, 448, 457, 484
- 56th Division**, 94, 110, 112-14, 120, 136-138, 141, 142, 164, 166, 186, 188, 197, 198, 200, 207, 208, 213, 227-9, 232, 234, 235, 244, 295, 315, 332, 357, 362, 364, 365, 367, 369, 372, 374, 394, 417, 419, 424, 427, 428, 448, 458-61, 463, 475, 476, 481, 484, 486, 489, 494, 501
- 78th Division**, 104-6, 114, 119, 125, 127, 128, 130, 131, 146, 148-51, 171, 172, 176, 191, 203, 206, 219, 222, 238, 241, 247, 251, 256, 288, 289, 295, 300, 302, 304, 306, 308, 315, 336, 342, 365, 412, 413, 415, 416, 422, 427, 428, 458, 460, 461, 475, 476, 481, 483, 484, 492, 496, 501
- 50th and 51st Divisions (in Sicily)**, 185
- 1st Guards Brigade**, 200, 213, 310, 365, 377, 412, 423, 496
- 2nd A.A. Brigade**, 365
- 2nd Commando Brigade**, 458, 459, 460, 475, 501
- 2nd Para. Brigade**, 295, 299, 458, 502
- 2nd Special Service Brigade**, 125, 200, 223
- 4th Armoured Brigade**, 104, 114, 125, 127, 146, 148, 150, 171, 188, 189, 295, 417
- 7th Armoured Brigade**, 292, 299, 302, 333, 357, 394, 448, 480, 502
- 9th Armoured Brigade**, 302, 304, 310, 314, 315, 365, 448, 458, 501
- 21st Tank Brigade**, 279, 336, 398, 447, 501
- 23rd Armoured Brigade**, 113, 114, 116, 138, 164, 186, 188, 197, 200, 207, 292, 295, 299
- 24th Guards Brigade**, 226, 229, 232, 277-279, 299, 308, 311, 342, 381, 410, 427, 443, 460, 461, 490
- 25th Tank Brigade**, 269, 274, 300, 302, 333, 357, 362, 394, 402, 423, 448
- 201st Guards Brigade**, 138, 141, 169, 188, 198
- 231st Brigade**, 94, 98, 108, 110, 117, 185

Miscellaneous Units

- 2nd Commando**, 95, 110, 458, 459, 460
- 3rd Commando**, 94, 108
- 9th Commando**, 223, 458, 460, 490
- 40th Commando**, 94, 459, 489
- 41st Commando**, 95, 110
- 43rd Commando**, 223, 458
- Special Boat Service Squadron**, 458
- Special Raiding Squadron**, 94
- 3rd Beach Group**, 119, 187, 231, 502
- 20th Beach Group**, 118
- 21st Beach Group**, 119, 187, 410

- 32nd Beach Group, 187, 188, 297
 33rd Beach Group, 187
 34th Beach Group, 187, 191, 192
 35th Beach Group, 119, 187, 297
 37th Beach Group, 410
- Jewish Brigade**, 416, 502
- Brazilian Expeditionary Force**, 379, 381, 447, 465, 469, 470
- Canadian Formations**
- Canadian I Corps, 135, 195, 237, 238, 239, 240, 251, 254, 256, 261, 265, 267, 273, 278, 288, 295, 300-2, 315, 334, 336, 356, 360, 364, 365, 369, 372, 374, 382, 384, 385, 388, 389, 391, 392, 396-401, 404-408, 417, 423, 428, 441, 447, 457
- Canadian 1st Division, 94, 108, 110, 112, 114, 117, 125, 127, 128, 130, 133, 148, 149, 151, 152, 162, 177, 187, 188, 191, 238-40, 244, 254, 267, 269, 275, 285, 295, 300, 315, 333, 336, 339, 360, 364, 365, 369, 372, 397, 398, 399, 401, 403, 405-7, 423, 429, 435, 447
- Canadian 5th Armoured Division, 135, 237-40, 254, 256, 267, 269, 273, 295, 298, 300, 304, 360, 364, 365, 367, 369, 372, 399-401, 403-7, 423, 447
- Canadian 1st Tank Brigade, 94, 127, 134, 191, 246, 247, 256, 295, 300, 332, 447
- French Formations**
- French Expeditionary Corps, 92, 164, 194-6, 198, 200, 201, 244, 246, 249, 252, 258, 294, 300, 317, 318, 320, 333, 356
- French 1st Motorised Division, 244, 249, 252, 300, 317, 318
- 2nd Moroccan Division, 167, 197, 249, 252, 295, 300, 318, 320
- 3rd Algerian Division, 197, 249, 252, 258, 295, 300, 317, 318, 320
- 4th Moroccan Mountain Division, 249, 252, 300, 320
- 1st Group, Tabors, 249, 252, 300
- 3rd Group, Tabors, 249, 252, 295, 300
- 4th Group, Tabors, 249, 252, 295, 300, 322
- Greek 3rd Mountain Brigade**, 362, 364, 365, 370, 388, 401, 447
- Indian Formations**
- Indian 4th Division, 150, 161, 162, 201, 203, 205, 206, 215, 218, 221, 244, 286, 292, 295, 299, 310, 314, 315, 334, 344, 345, 353, 357, 358, 362, 364, 365, 367, 370, 384, 424, 432, 434, 438, 448
- Indian 8th Division, 104, 114, 118, 127, 128, 130, 146, 148, 149, 153-7, 173, 191, 238, 239, 241, 244, 246, 249, 251, 256, 261, 267, 285, 286, 288-90, 295, 300, 302, 304, 306, 310, 311, 313-15, 322, 332, 333, 339, 346-52, 356, 374, 375, 377, 379, 410, 412, 413, 415, 416, 422, 435-7, 447, 458, 459, 461, 463, 476, 497, 500, 501
- Indian 10th Division, 292, 294, 299, 300, 302, 310, 314, 315, 345, 350-2, 355, 356, 365, 367, 369, 370, 372, 374, 400, 410, 424, 428, 431, 434, 437, 438-43, 448, 458, 460, 461, 475-7, 480, 484, 485, 492, 497, 502
- Indian 43rd Lorried Infantry Brigade, 374, 416, 431, 439-41, 460, 463, 477, 483, 494, 502
- Italian Formations**
- Italian 1st Motorised Group, 164, 167, 277, 294, 299
- Cremona Combat Group, 391, 407, 458, 459, 463, 501, 550
- Folgore Combat Group, 416, 475, 477, 550
- Fruili Combat Group, 391, 416, 520, 550
- Nembo Division, 334
- Uttili Division, 315, 334, 447
- Italian 228th Division, 529
- New Zealand Formations**
- New Zealand Corps (N.Z. 2nd Division and Indian 4th Division), 194, 201, 203, 215, 219, 221, 222, 244
- New Zealand 2nd Division, 127, 130, 135, 146, 148-50, 153-62, 196, 201, 203, 205, 206, 219, 221, 222, 238, 241, 261, 277, 278, 290, 294, 299, 302, 304, 310, 314, 322, 333, 337-9, 365, 367, 369, 372, 374, 382, 401, 403-5, 423, 428, 429, 431, 435, 441, 447-9, 460, 461, 463, 476, 477, 480, 481, 483, 484, 486, 492-5, 501, 522, 532, 541, 542
- Polish Formations**
- Polish II Corps, 194, 195, 240, 244, 246, 247, 249, 251, 252, 263, 277, 288-90, 300-2, 315, 317, 324, 330, 333, 334, 356, 358, 360, 365, 367, 369, 370, 372, 374, 382-5, 387, 389, 392, 394, 397, 416, 431, 447, 457, 458, 460, 461, 463, 469, 475, 502
- Polish 3rd Carpathian Division, 240, 247, 251, 295, 300, 360, 441, 447, 492, 502
- Polish 5th Kresowa Division, 247, 251, 295, 300, 369, 432, 447, 492, 502
- Polish 2nd Armoured Brigade, 300, 365, 447, 502
- South African Formation**
- South African 6th Armoured Division, 261, 272, 278, 299, 300, 302, 304, 306, 308, 310, 311, 313, 332, 333, 336, 338, 342, 356, 375, 377, 381, 411, 412, 443, 447, 461, 465, 468-70, 488
- United States of America Formations**
- U.S. Fifth Army, 91, 92, 94, 110, 114, 123, 136, 141, 143, 146, 150, 164, 171, 194, 196, 197, 203, 219, 220, 222, 238, 243, 244, 246, 256, 267, 277, 294, 300-2, 314, 315, 317, 318, 320, 322, 329, 339, 356, 365, 372, 374, 375, 379, 381, 411-413, 428, 443, 447, 456-8, 461, 468, 469

United States of America Formations

—cont.

- U.S. Seventh Army, 310, 317, 320, 322
 U.S. II Corps, 92, 164, 166, 194-8, 200, 203, 219, 246, 249, 254, 256, 258, 259, 294, 300, 317, 357, 375, 379, 381, 413, 443, 447, 457, 465, 468-70, 485
 U.S. IV Corps, 244, 254, 300, 317, 322, 375, 377, 381, 443, 447, 456, 457, 465, 468-70
 U.S. VI Corps, 91, 92, 93, 95, 113, 136, 138, 141, 164, 166, 167, 194-6, 199, 222, 229, 230, 254, 258, 291, 294, 300, 303, 317, 318
 U.S. 1st Armoured Division, 164, 196, 201, 223, 226-8, 258, 259, 294, 300, 317, 320, 322, 379, 447, 465, 468-70
 U.S. 3rd Division, 138, 139, 141, 164, 198, 223, 226, 228, 230, 258, 259, 294, 300, 318, 320
 U.S. 10th Mountain Division, 381, 456, 465, 468, 469
 U.S. 34th Division, 95, 138, 139, 141, 164, 167, 177, 197, 201, 258, 259, 294, 300, 317, 320, 322, 375, 381, 447, 465, 469, 470
 U.S. 36th Division, 95, 110, 138, 164, 166, 197, 201, 254, 258, 259, 294, 300, 317, 318, 320
 U.S. 45th Division, 95, 138, 139, 141, 164, 167, 196, 201, 223, 226, 228, 229, 258, 259, 294, 300, 320
 U.S. 82nd Airborne Division, 96, 113, 116, 164
 U.S. 85th Division, 244, 249, 254, 258, 259, 300, 317, 375, 377, 381, 428, 447, 468, 469
 U.S. 88th Division, 249, 254, 258, 259, 300, 317, 320, 322, 375, 379, 381, 447, 465, 468-70
 U.S. 91st Division, 322, 375, 377, 381, 447, 465, 469, 470, 485
 U.S. 92nd Division, 374, 381, 465, 469, 470
 U.S. 1st Special Service Force, 197, 228, 258, 259, 294
 U.S. Task Force 45, 379
 U.S. Rangers, 95, 110, 114, 119, 223, 226

British Medical Units

General Hospitals

- 1 Mobile Military Hospital, 297, 449, 455
 2 B.G.H., 216, 220, 240, 242, 263, 298, 446, 449, 454
 5 B.G.H., 323, 331, 332, 385, 387, 393, 448, 452, 454, 472, 473, 474, 478
 11 B.G.H., 296, 323, 332, 383, 385, 387, 388, 392, 393, 428, 446, 448, 452, 453, 454
 15 B.G.H., 432
 22 B.G.H., 297, 446, 449, 450, 455, 484, 485
 31 B.G.H., 323, 332, 334, 387, 388, 411, 448, 452, 453, 454
 33 B.G.H., 135, 290, 446, 449, 455
 45 B.G.H., 297, 446, 449, 455

- 48 B.G.H., 261, 322, 327, 329, 349, 446, 449, 454
 50 B.G.H., 171, 172, 173, 178, 181, 192, 238, 290, 296, 446, 449, 455
 54 B.G.H., 178, 192, 207, 327, 329, 331, 355, 384, 387, 388, 390, 391, 392, 393, 433, 446, 448, 450, 454, 473, 474, 478, 481, 483, 485, 495, 502
 58 B.G.H., 98, 186, 192, 261, 265, 266, 298, 330, 338, 385, 387, 446, 448, 452, 454
 59 B.G.H., 178, 193, 227, 298, 324, 327, 328, 329, 330, 331, 390, 391, 392, 393, 411, 430, 443, 446, 448, 450, 454, 473, 474, 475, 478, 485, 502
 64 B.G.H., 449, 455
 65 B.G.H., 169, 170, 178, 179, 193, 263, 298, 446, 449, 454
 66 B.G.H., 296, 323, 332, 391, 392, 393, 446, 448, 450, 454, 473, 474, 478, 502
 67 B.G.H., 298, 446, 449, 454
 69 B.G.H., 261, 298, 446, 449, 454
 70 B.G.H., 118, 119, 170, 171, 178, 192, 240, 263, 298, 446, 449, 454, 485
 71 B.G.H., 179, 297, 332, 383, 385, 387, 388, 392, 393, 428, 446, 448, 452, 453, 454
 72 B.G.H., 261, 298, 446, 449, 454
 76 B.G.H., 101, 178, 179, 192, 297, 446, 449, 455
 82 B.G.H., 156
 83 B.G.H., 118, 170, 171, 172, 178, 192, 297, 332, 388, 389, 390, 391, 392, 393, 403, 430, 443, 446, 448, 450, 454, 473, 474, 485, 502
 84 B.G.H., 178, 179, 192, 297
 92 B.G.H., 144, 145, 169, 170, 178, 179, 193, 263, 298, 446, 449, 454
 93 B.G.H., 192, 297, 446, 449, 455
 95 B.G.H., 449, 455
 97 B.G.H., 449
 98 B.G.H., 100, 101, 136, 178, 192, 296, 446, 449, 455
 99 B.G.H., 454
 100 B.G.H., 261, 446, 449, 454
 103 B.G.H., 101, 298, 446, 449, 455
 104 B.G.H., 101, 240, 263, 298, 322, 446, 449, 454
 Expansions, 297, 298, 450, 452, 453, 454

Field Hospitals

- 2 Fd. Hosp., 135, 266, 296, 446
 6 Fd. Hosp., 186

Casualty Clearing Stations

- 1 C.C.S., 152, 173, 174, 175, 179, 180, 181, 191, 192, 239, 240, 292, 296, 334, 384, 386, 387, 388, 389, 390, 392, 393, 395, 396, 397, 424, 434, 435, 450, 474, 475, 476, 477, 478, 479, 481, 483, 485, 491, 502
 2 C.C.S., 231, 232, 234, 235, 236, 265, 266, 276, 277, 326, 327, 328, 329, 331, 332, 333, 337, 342, 386, 410, 411, 412, 450

- 3 C.C.S., 98, 171, 172, 173, 174, 175, 176, 179, 180, 181, 186, 192
- 4 C.C.S., 117, 118, 171, 173, 174, 175, 176, 179, 180, 181, 186, 191, 192, 265, 266, 277, 297, 326, 327, 329, 331, 333, 336, 337, 338, 410, 411, 412, 413, 414, 415, 417, 421, 436, 451, 473, 474, 476, 479, 481, 483, 485
- 5 C.C.S., 98, 151, 152, 155, 156, 162, 172, 174, 175, 180, 181, 182, 186, 191, 193, 238, 296, 334, 384, 386, 387, 388, 392, 393, 395, 396, 424, 428, 433, 450, 473, 474, 475, 476, 477, 478, 485, 498, 499, 502
- 7 C.C.S., 97, 117, 118, 132, 171, 172, 173, 174, 175, 177, 180, 181, 186, 188, 191, 192, 193, 238, 240, 262, 276, 287, 296
- 8 C.C.S., 120, 121, 144, 145, 169, 187, 189, 190, 193, 207, 208, 282, 296, 299, 322, 331, 411, 412, 413, 415, 416, 417, 437, 451, 475, 477
- 9 C.C.S., 105
- 12 C.C.S., 241, 265, 266, 287, 296, 326, 327, 328, 329, 330, 331, 385, 386, 387, 388, 390, 391, 392, 393, 450, 473, 481, 483, 485, 502, 538
- 14 C.C.S., 120, 121, 135, 143, 145, 169, 187, 189, 190, 193, 207, 208, 241, 296, 299, 329, 330, 331, 354, 383, 386, 387, 388, 389, 401, 403, 450
- 15 C.C.S., 97, 117, 118, 132, 134, 162, 171, 172, 173, 174, 175, 176, 177, 181, 186, 188, 191, 193, 207, 231, 234, 235, 236, 238, 264, 266, 277, 327, 328, 329, 330, 331, 385, 386, 387, 388, 390, 391, 392, 450
- 18 C.C.S., 107, 130, 173, 174, 175, 180, 181, 191, 193, 208, 238, 241, 265, 266, 296, 328, 329, 330, 331, 383, 384, 385, 386, 387, 388, 390, 391, 392, 393, 395, 419, 426, 450, 473, 474, 485, 502
- 19 C.C.S., 105, 173, 174, 175, 180, 181, 191, 193, 238, 263, 266, 267, 276, 277, 287, 296, 326, 329, 331, 352, 353, 355, 386, 387, 389, 390, 391, 392, 403, 450, 478, 479, 480, 481, 482, 483, 484, 485, 486, 502
- 21 C.C.S., 120, 121, 143, 144, 145, 169, 187, 189, 190, 193, 207, 231, 296, 299, 322, 452, 453
- 52 F.D.S., 329, 331, 332, 333, 337, 342, 410, 411, 412, 413, 414, 415, 417, 435, 436, 443, 452, 475, 477, 480, 482, 483, 484, 485
- 53 F.D.S., 329, 331, 386, 387, 388, 390, 392, 393, 450
- 54 F.D.S., 329, 331, 333, 336, 410, 411, 412, 413, 414, 435, 445, 452
- 55 F.D.S., 412, 413, 415, 417, 452, 475, 477, 478, 479, 480, 481, 482, 483, 484, 486
- 56 F.D.S., 413, 415, 417, 421, 452, 474, 475, 477, 478, 479, 480, 481, 485
- 57 F.D.S., 386, 392, 393, 394, 395, 396, 397, 424, 431, 439, 440, 441, 442, 450, 473, 475, 476, 477, 478, 479, 481, 483, 485, 486, 498, 502
- 58 F.D.S., 386, 392, 393, 394, 395, 396, 424, 439, 450, 473, 474, 475, 476, 479, 481, 483, 485, 491, 498, 502
- 62 F.D.S., 393, 397
- 64 F.D.S., 393, 482, 485, 502
- 65 F.D.S., 393, 475, 476, 483, 485, 502
- 66 F.D.S., 393, 483, 484, 485, 486, 502
- 67 F.D.S., 475, 476, 481, 483, 485
- 70 F.D.S., 485
- 865 F.D.S. (called 'A' at Anzio), 120, 121, 122, 124, 143, 144, 145, 169, 187, 190, 193, 207, 208, 241, 277, 278, 296, 299, 326, 327, 329, 331, 345, 346, 348, 349, 350, 353, 386, 392, 393, 438, 450, 502, 592
- 866 F.D.S. (called 'B' at Anzio), 120, 121, 122, 143, 144, 145, 169, 187, 190, 193, 207, 277, 296, 299, 327, 329, 331, 345, 353, 355, 386, 388, 393, 450, 485, 502

Field Surgical Units

- 1 F.S.U., 132, 172, 173, 174, 177, 187, 188, 191, 193, 207, 208, 219, 238, 296, 384, 386, 410, 450, 502
- 2 F.S.U., 151, 154, 172, 174, 187, 188, 189, 191, 193, 236, 334, 410, 412, 452, 482
- 3 F.S.U., 98, 120, 143, 174, 187, 190, 193, 207, 231, 296, 299
- 4 F.S.U., 98, 130, 172, 186, 188, 191, 240, 296
- 5 F.S.U., 132, 133, 162, 173, 174, 177, 182, 187, 191, 193, 207, 208, 210, 211, 231, 238, 296, 299, 383, 386, 402, 450, 502
- 6 F.S.U., 98, 144, 187, 190, 193
- 7 F.S.U., 176, 181, 191, 296, 297, 384, 450, 502
- 8 F.S.U., 118, 161, 191, 192, 219, 220, 238, 296, 338, 410, 411, 412, 445, 452
- 9 F.S.U., 120, 144, 155, 187, 189, 190, 193, 207, 296, 299, 330, 412, 443, 452
- 10 F.S.U., 119, 120, 143, 144, 188, 190, 207, 231, 296, 384, 386, 412, 428, 436, 443, 452, 479, 483

Field Dressing Stations

Improvisations (usually out of field ambulances)

- 'A' F.D.S., 326, 327
- 'B' F.D.S., 327
- 'C' F.D.S., 327
- 'D' F.D.S., 411, 413, 414
- 'E' F.D.S., 411, 413, 414
- 'F' F.D.S., 384, 387, 433, 434, 435
- 'G' F.D.S., 384, 387, 426, 434
- 3 F.D.S., 231, 232

British Medical Units*Field Surgical Units—cont.*

- 19 F.S.U., 191
 20 F.S.U., 98
 21 F.S.U., 98, 186, 191, 296, 384, 386, 450, 502
 22 F.S.U., 186, 191, 192, 296, 297, 410, 412, 452
 23 F.S.U., 144, 187, 190, 207, 231, 296, 383, 386, 410, 450, 502
 24 F.S.U., 120, 144, 187, 190, 191, 207, 266, 296, 299, 342, 502
 25 F.S.U., 120, 143, 144, 187, 190, 193, 231, 232, 240, 296, 384, 386, 425, 450, 502
 26 F.S.U., 191, 238, 296, 386, 450, 502
 28 F.S.U., 120, 151, 154, 191, 193, 217, 296, 412, 428, 479, 483
 29 F.S.U., 98, 130, 172, 186, 188, 238, 240, 296, 386, 450, 482, 484, 502
 30 F.S.U., 207, 296, 299, 386, 452
 31 F.S.U., 105, 106, 133, 164, 173, 177, 191, 193, 240, 296, 384, 386, 412, 452
 32 F.S.U., 162, 191, 296, 384, 386, 450, 502
 35 F.S.U., 98, 172, 176, 181, 186, 191, 192, 193, 297, 410, 412, 416, 452, 480
 36 F.S.U., 120, 143, 144, 187, 190, 193, 231, 232, 384, 386, 450, 502

Field Transfusion Units

- 1 F.T.U., 120, 144, 187, 190, 207, 231, 296, 410, 411, 412, 452
 3 F.T.U., 186, 187, 188, 191, 192, 296, 384, 386, 450, 502
 4 F.T.U., 132, 133, 162, 164, 173, 174, 177, 182, 187, 188, 191, 193, 207, 208, 210, 211, 231, 238, 296, 385, 386, 450
 7 F.T.U., 181, 186, 191
 9 F.T.U., 181, 191, 193, 266, 297, 326, 330, 331, 385, 386, 387, 450, 473, 474, 502, 567
 10 F.T.U., 231, 232, 384, 386, 450, 502
 11 F.T.U., 98, 172, 186, 191, 296, 410, 412, 452, 482
 12 F.T.U., 120, 114, 144, 187, 190, 193, 231, 232, 266, 296, 386, 412, 452, 480
 15 F.T.U., 386, 450, 502
 19 F.T.U., 155
 23 F.T.U., 240, 296, 410, 411, 412, 445, 452
 25 F.T.U., 120, 143, 187, 189, 190, 193, 207, 296, 299, 384, 386, 450, 502
 26 F.T.U., 154, 191, 193, 384, 386, 426, 450, 502, 567
 28 F.T.U., 162
 33 F.T.U., 208, 296, 299, 410, 412, 452, 479, 483
 34 F.T.U., 105, 106, 155, 176, 191, 192, 296, 297, 384, 386, 450, 502
 35 F.T.U., 98, 118, 172, 174, 177, 181, 186, 191, 480

Base Transfusion Units

- 4 B.T.U., 297
 5 B.T.U., 186, 192, 297, 298, 325, 567

Field Ambulances

- 1 Fd. Amb., 213, 332, 341, 342, 421, 422, 423, 452, 486
 1 Lt. Fd. Amb., 416, 418, 419, 420, 451, 457, 496
 2 Lt. Fd. Amb., 145, 187
 2 Fd. Amb., 231, 232, 234, 235, 291, 415, 428, 452
 3 Fd. Amb., 231, 232, 236, 291, 437, 452
 5 Lt. Fd. Amb., 143, 145, 169, 183, 188, 207, 208, 210, 269, 270, 272, 277, 384, 387, 394, 395, 396, 402, 423, 434, 451
 6 Lt. Fd. Amb., 279, 336, 388, 392, 398, 399, 400, 401, 402, 451, 490
 10 Fd. Amb., 279, 282, 283, 284, 285, 337, 402, 423, 424
 11 Fd. Amb., 104, 130, 131, 150, 188, 189, 422, 427, 428, 452, 496
 12 Fd. Amb., 279, 282, 284, 285, 337, 402, 423, 424
 13 Lt. Fd. Amb., 394, 395, 396, 501
 14 Fd. Amb., 117, 171, 172, 175, 186, 189, 191, 192, 296, 341, 342, 413, 421, 422, 423, 452, 479, 486, 487, 501
 14 Lt. Fd. Amb., 104, 171, 172, 173, 174, 189
 15 Fd. Amb., 297
 16 Para. Fd. Amb., 104, 118, 178, 189
 127 Fd. Amb., 104, 118, 159, 178, 189, 410
 131 Fd. Amb., 120, 145, 187
 132 Fd. Amb., 97, 98, 131, 134, 171, 172, 173, 174, 175, 177, 182, 186, 188, 191, 192, 266, 287, 288, 296, 326, 327, 329, 331, 411, 413, 414, 452
 133 Para. Fd. Amb., 104, 118, 189
 137 Fd. Amb., 231, 232, 236, 291, 342, 412, 427, 443, 445, 452, 490
 140 Fd. Amb., 98, 169, 170, 188, 190, 207, 208, 231, 392, 396, 427, 451
 141 Fd. Amb., 116, 132, 133, 162, 175, 177, 187, 188, 207, 208, 210, 211, 231, 291
 149 Fd. Amb., 98, 185
 150 Lt. Fd. Amb., 144, 145, 169, 170, 188, 190, 207, 208
 151 Lt. Fd. Amb., 118, 170, 171, 172, 174, 175, 180, 186, 191, 192, 267, 297, 326, 327, 330, 331, 383, 385, 386, 387, 388, 389, 390, 392, 393, 451, 502
 152 Fd. Amb., 104, 130, 131, 150, 151, 188, 189, 427, 428, 452
 158 Fd. Amb., 117, 132, 162, 164, 173, 174, 177, 182, 187, 188, 208, 210, 211, 231, 235, 236, 291
 159 Fd. Amb., 118, 170, 178, 186, 188, 192, 297, 337, 402, 423, 424
 164 Fd. Amb., 132, 133, 162, 166, 177, 182, 187, 188, 207, 208, 210, 211, 212, 231, 291

- 165 Lt. Fd. Amb., 341, 342, 421, 422, 433, 451, 452, 486
 166 Lt. Fd. Amb., 284, 342, 394, 396, 451, 490
 167 Fd. Amb., 145, 169, 170, 188, 208, 231, 427, 451, 490
 174 Fd. Amb., 98, 185
 175 Fd. Amb., 185
 176 Fd. Amb., 98, 99, 185
 181 A/L Fd. Amb., 104, 118, 178, 189
 183 Fd. Amb., 120, 145, 169, 170, 187, 207, 280, 424, 426, 451
 184 Fd. Amb., 120, 145, 169, 170, 187, 424, 425, 426, 451
 185 Fd. Amb., 120, 145, 169, 170, 187, 191, 207, 280, 282, 283, 284, 285, 424, 425, 426, 451
 186 Fd. Amb., 98, 185
 200 Fd. Amb., 98, 99, 185, 187, 207
 214 Fd. Amb., 120, 142, 169, 170, 188, 208, 231, 233, 427, 451, 490, 491
 216 Fd. Amb., 104, 105, 106, 151, 152, 174, 176, 180, 189, 191, 239, 292, 296, 394 (transformed into 57 and 58 F.D.Ss.)
 217 Fd. Amb., 104, 130, 131, 150, 188, 189, 422, 423, 427, 428, 452
 220 Fd. Amb., 120, 178, 190, 153, 207, 208, 210, 298, 299
 226 Fd. Amb., 278, 279, 298, 342, 416, 418, 419, 420, 451

Field Hygiene Sections

- 1 Fd. Hyg. Sec., 193, 298
 3 Lt. Fd. Hyg. Sec., 341, 423, 452
 4 Fd. Hyg. Sec., 279, 282, 296, 450
 8 Fd. Hyg. Sec., 104, 105, 106, 189, 191, 296, 386, 450, 502, 564
 11 Fd. Hyg. Sec., 186, 191, 297, 386, 387, 450, 502, 529
 13 Fd. Hyg. Sec., 180, 191, 296, 412, 417, 452, 564
 15 Fd. Hyg. Sec., 187, 424, 425, 426, 450
 17 Fd. Hyg. Sec., 297
 18 Fd. Hyg. Sec., 231, 452
 19 Fd. Hyg. Sec., 97, 173, 174, 177, 182, 186, 188, 191, 296, 386, 450, 502, 529
 20 Fd. Hyg. Sec., 192, 297
 22 Fd. Hyg. Sec., 185
 24 Fd. Hyg. Sec., 177, 187, 188
 25 Fd. Hyg. Sec., 241, 296
 29 Fd. Hyg. Sec., 185
 32 Fd. Hyg. Sec., 296
 34 Fd. Hyg. Sec., 192, 297
 36 Fd. Hyg. Sec., 192, 297
 47 Fd. Hyg. Sec., 104, 188, 189, 427, 450, 452, 496
 51 Fd. Hyg. Sec., 188, 208, 231, 427, 450
 52 Fd. Hyg. Sec., 187, 190, 193, 207, 296, 299, 386, 450, 502
 62 Fd. Hyg. Sec., 179, 193, 298
 69 Fd. Hyg. Sec., 416, 450
 70 Fd. Hyg. Sec., 187
 86 Fd. Hyg. Sec., 501

43*

Motor Ambulance Convoys

- 25 M.A.C., 144, 145, 169, 190, 207, 264, 265, 277, 299, 333, 451
 29 M.A.C., 383
 45 M.A.C., 175, 180, 298, 411
 60 M.A.C., 98, 171, 172, 176, 180, 181, 186, 191, 240, 241, 263, 265, 266, 297, 451
 74 M.A.C., 298
 88 M.A.C., 176, 180, 181, 191, 240, 241, 263, 265, 266, 451
 112 M.A.C., 105, 106, 155, 175, 176, 191, 240, 418, 420, 426, 451
 146 M.A.C., 98, 109, 119, 131, 134, 172, 175, 176, 180, 186, 191, 263, 265, 266, 288, 410, 413, 452
 683 M.A.C., 383
 219 A.F.S., 297, 298
 485 A.F.S., 144, 207, 231, 263, 265, 298, 299, 410, 451, 453
 567 A.F.S., 133, 171, 172, 173, 174, 175, 180, 191, 240, 264, 265, 266, 277, 383, 385, 391, 426, 451, 452

Laboratories

- 1 Mob. Bact. Lab., 180, 186, 191, 296, 297, 386, 394, 450, 502, 525, 529
 2 Mob. Bact. Lab., 296, 326, 385, 386, 450, 529
 3 Mob. Bact. Lab., 452
 5 Mob. Bact. Lab., 180, 186, 191, 296, 410, 412
 1 Mob. Hyg. Sec. Lab., 298
 3 Mob. Hyg. Lab., 180, 191, 297, 386, 450, 502
 1 Mob. Mal. Lab., 297
 5 Mob. Mal. Lab., 453
 8 Mob. Mal. Lab., 97, 186, 191, 326, 386, 450, 524, 529, 530
 9 Mob. Mal. Lab., 179, 193, 298, 386
 10 Mob. Mal. Lab., 298

Specialist Medical Units

- 1 M.F.S.U., 155, 172, 180, 181, 191, 297, 385, 387, 391, 451, 502
 1 Mob. Ophthalm. Unit, 190, 207, 299, 328, 331
 2 Mob. Ophthalm. Unit, 155, 172, 180, 181, 186, 191, 192, 266, 297, 326, 327, 329, 410
 2 Chest Surgery Team, 193
 3 Mob. Ophthalm. Unit, 296, 387
 4 M.F.S.U., 298, 327, 328, 329, 330, 331, 387, 452
 4 M.N.S.U., 155, 172, 180, 181, 191, 192, 297, 385, 387, 391, 451, 503
 5 M.N.S.U., 208, 298, 327, 328, 329, 330, 331, 387, 452
 Ophthalmic Sections
 50 B.G.H., 385, 391, 451
 54 B.G.H., 331, 412, 452
 58 B.G.H., 331, 394, 502
 59 B.G.H., 300
 68 B.G.H., 451
 83 B.G.H., 502

British Medical Units*Specialist Medical Units—cont.*

- 5 Corps Psychiatric Team, 394
- 11 Corps Psychiatric Team, 386, 387, 451, 503
- 12 Corps Psychiatric Team, 331, 386, 503
- 13 Corps Psychiatric Team, 331, 337, 412, 413, 452
- 7 Base Psychiatric Wing, 385, 453, 454
- 5 V.D.T.C., 172, 175, 191, 192, 296, 533
- 6 Combined V.D.T.C., 297, 453
- 12 V.D.T.T., 451, 503, 538
- 13 V.D.T.C., 412, 452, 538
- 14 V.D.T.T., 390, 451, 503, 538
- 'W', 'Y', 'Z' V.D.T.Ts., 386
- X Corps Exhaustion Centre, 190, 207, 241, 296, 299, 349
- 3 Entomological Field Unit, 298, 451, 503
- Traumatic Shock Team, 326, 451, 502
- 4 Orthopaedic Centre, 297, 298
- Base Ophthalmic Centre, 298
- 2 Mob. X-ray Unit, 297
- Operational Research Team of Directorate of Medical Research, 298, 533
- 1 and 2 Mobile Medical Units, 503
- 32 Reception Station, 453, 454

Convalescent Depots

- 7 Con. Depot, 179, 193, 261, 298
- 8 Con. Depot, 330, 332, 384, 386, 387, 390, 391, 392, 393, 451, 503
- 9 Con. Depot, 101, 255, 297, 298, 323, 327, 329, 330, 331, 332, 384, 453
- 10 Con. Depot, 100, 261, 298, 322
- 11 Con. Depot, 100, 192, 297

Depots of Medical Stores

- 1 Adv. Depot Medical Stores, 297
- 3 Adv. Depot Med. Stores, 105, 106, 181, 191, 192, 266, 296, 326, 327, 329, 330, 387, 410, 411, 412, 452, 567
- 4 Adv. Depot Med. Stores, 297
- 7 Adv. Depot Med. Stores, 160, 180, 186, 191, 296, 297, 386, 387, 394, 395, 450, 502, 566
- 10 Adv. Depot Med. Stores, 101, 102, 179, 193, 241, 296, 453
- 2 Base Depot Med. Stores, 298, 323, 453, 567
- 4 Base Depot Med. Stores, 136, 297
- 10 Base Depot Med. Stores, 100, 101, 102, 298

Hospital Ships and Carriers

- Aba*, 100
- Amra*, 100, 324
- Amarapoora*, 100
- Atlantis*, 324
- Dinard*, 117
- Dorsetshire*, 170
- John L. Meany* (U.S.), 324
- Leinster*, 100, 223, 324
- Maine*, 100
- Newfoundland*, 100, 121

- Oxfordshire*, 100
- Oranje*, 324
- Perak*, 324
- Principessa Giovanna*, 324
- St. Andrew*, 324
- St. David*, 100, 223, 236
- St. Julian*, 100
- Somersetshire*, 100, 324
- Tairea*, 100, 324
- Toscana*, 324
- Vita*, 100
- Wanganella* (N.Z.), 324

Field Sanitary Sections

- 11 Fd. San. Sec., 412, 452
- 12 Fd. San. Sec., 296, 453
- 13 Fd. San. Sec., 323, 453
- 20 Fd. San. Sec., 453

Miscellaneous Medical Units

- Beach Brick Medical Sections, 97, 118, 119, 120, 187, 188, 191, 192, 231, 297
- 4 British S.S., 329, 330, 331, 411, 412, 452
- 19 Br. S.S., 298
- 32 Reception Station, 454
- 6 Port Detachment, 179, 297
- 7 Port Detachment, 297
- 11 Port Detachment, 298
- 'X' Port Detachment, 297
- Malaria Control Units (M.C.U.s. and A.M.C.U.s.), 179, 187, 188, 190, 192, 193, 207, 208, 215, 231, 238, 296, 297, 298, 323, 410, 416, 423, 427, 450, 452, 453
- P.A.Cs., 297, 323, 412, 451, 452, 453, 539
- Ambulance Trains, 298, 325, 326, 334

Army Dental Units

- Fd. Dent. Labs., 179, 192, 297, 298, 394, 412, 413, 450, 452, 453, 502
- Fd. Dent. Centres, 298, 412, 452, 453
- M.D.U.s., 105, 106, 132, 133, 143, 144, 164, 173, 174, 176, 177, 180, 186, 187, 188, 189, 190, 191, 192, 193, 207, 208, 238, 277, 282, 296, 297, 298, 299, 341, 410, 412, 423, 424, 427, 451, 452, 453, 502
- 2 Dent. Surg. Team, 298

Canadian Medical Units*General Hospitals*

- 1 Cdn. G.H., 135, 152, 179, 239, 240, 261, 267, 273, 297, 323, 325, 332, 336, 383, 384, 387, 388, 390, 392, 397, 398, 399, 401, 403, 404, 406, 408, 409, 428, 446, 448, 452, 453, 454
- 2 Cdn. G.H., 408
- 3 Cdn. G.H., 239, 265, 267, 275, 276, 298, 326, 336, 388, 391, 392, 403, 404, 405, 406, 407, 408, 446, 448, 450, 454

- 5 Cdn. G.H., 134, 135, 239, 240, 261, 267, 273, 297, 322, 325, 327, 329, 330, 408, 409, 446, 449, 454
- 14 Cdn. G.H., 152, 179, 239, 240, 267, 272, 273, 276, 298, 325, 332, 335, 336, 387, 388, 397, 398, 402, 408, 409, 446, 448, 452, 454
- 15 Cdn. G.H., 134, 239, 240, 267, 272, 273, 298, 325, 335, 336, 402, 408, 409, 446, 449, 454
- 28 Cdn. G.H., 408
- 1 Cdn. Fd. Hosp. (from 3 Cdn. F.D.S.), 408
- Casualty Clearing Stations**
- 4 Cdn. C.C.S., 135, 180, 181, 191, 238, 239, 265, 267, 268, 269, 270, 271, 272, 275, 296, 326, 335, 384, 386, 387, 388, 392, 398, 399, 400, 402, 403, 404, 405, 406, 407, 408, 423, 429, 450
- 5 Cdn. C.C.S., 135, 237, 239, 240, 265, 267, 268, 269, 270, 271, 272, 275, 276, 326, 334, 335, 336, 384, 386, 387, 388, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 409, 423, 429, 450
- Field Dressing Stations**
- 1 Cdn. F.D.S., 97, 117, 133, 151, 152, 156, 157, 172, 187, 189, 240, 268, 269, 270, 271, 272, 296, 335, 399, 400, 401, 403, 406, 450
- 2 Cdn. F.D.S., 97, 117, 134, 152, 172, 173, 174, 177, 187, 189, 239, 267, 268, 269, 270, 271, 272, 296, 326, 333, 335, 398, 399, 400, 401, 402, 406, 407, 418, 419, 450
- 3 Cdn. F.D.S., 135, 180, 240, 265, 267, 268, 269, 270, 271, 272, 326, 334, 335, 386, 387, 398, 399, 400, 402, 403, 404 (becomes 1 Cdn. Fd. Hosp.), 408, 450
- 8 Cdn. F.D.S., 135, 237, 239, 240, 265, 267, 269, 270, 271, 272, 326, 334, 335, 336 (becomes 8 Lt. Fd. Amb.), 450
- 13 Cdn. F.D.S., 135, 237, 239, 240, 268, 269, 270, 271, 272, 326, 335, 384, 386, 387, 392, 398, 399, 400, 402, 403, 404, 406, 407, 450
- 16 Cdn. F.D.S., 135, 237, 239, 240, 268, 269, 270, 271, 272, 326, 335, 384, 387, 392, 398, 399, 400, 402, 403, 404, 405, 406, 450
- Field Surgical Units**
- 1 Cdn. F.S.U., 117, 134, 151, 152, 173, 174, 177, 187, 189, 191, 296, 335, 384, 386, 398, 399, 400, 402, 450
- 2 Cdn. F.S.U., 117, 134, 151, 152, 173, 174, 177, 187, 189, 191, 268, 269, 270, 334, 335, 384, 386, 400, 402, 450
- 3 Cdn. F.S.U., 135, 190, 207, 208, 268, 269, 270, 296, 297, 334, 335, 384, 386, 400, 402, 450
- 4 Cdn. F.S.U., 135, 180, 269, 270, 296, 335, 384, 386, 398, 399, 400, 402, 450
- Field Transfusion Units**
- 1 Cdn. F.T.U., 117, 132, 134, 151, 152, 173, 174, 177, 187, 189, 191, 296, 384, 386, 398, 399, 400, 402, 450
- 2 Cdn. F.T.U., 135, 191, 269, 270, 334, 335, 384, 386, 400, 402, 450
- 3 Cdn. F.T.U., 135, 190, 207, 208, 268, 269, 270, 296, 297, 384, 386, 399, 403, 450
- Field Ambulances**
- 2 Cdn. Lt. Fd. Amb., 134, 151, 152, 173, 174, 177, 187, 189, 239, 287, 296, 404, 451
- 4 Cdn. Fd. Amb., 117, 133, 151, 152, 173, 174, 177, 187, 188, 239, 267, 268, 269, 270, 271, 272, 296, 355, 398, 399, 401, 402, 404, 405, 406, 407, 451
- 5 Cdn. Fd. Amb., 117, 133, 134, 151, 152, 173, 174, 177, 186, 188, 238, 239, 268, 269, 270, 271, 272, 335, 392, 398, 399, 400, 401, 402, 405, 407, 451
- 7 Cdn. Lt. Fd. Amb., 135, 239, 240, 269, 270, 271, 335, 398, 400, 403, 405, 407, 451.
- 8 Cdn. Lt. Fd. Amb., 334, 398, 400, 401, 402, 403, 405, 406
- 9 Cdn. Fd. Amb., 117, 134, 152, 172, 173, 174, 177, 187, 188, 238, 267, 268, 269, 270, 271, 272, 296, 235, 335, 398, 399, 400, 401, 402, 406, 451
- 24 Cdn. Fd. Amb., 135, 239, 240, 267, 269, 270, 271, 272, 335, 398, 400, 401, 402, 406, 407, 451
- Field Hygiene Sections**
- 2 Cdn. Fd. Hyg. Sec., 173, 174, 177, 187, 189, 296, 335, 398, 450
- 5 Cdn. Fd. Hyg. Sec., 135, 335, 386, 398, 450
- 11 Cdn. Fd. Hyg. Sec., 335, 450
- 13 Cdn. Fd. Hyg. Sec., 135
- Miscellaneous Units**
- 1 Cdn. Con. Depot, 134, 239, 240, 261, 273, 297, 298, 334, 387, 392, 404, 408, 451, 453
- 1 Cdn. Depot. Med. Stores, 135, 272, 298, 386, 398, 450, 453
- 1 Cdn. M.A.C., 135, 239, 240, 265, 269, 276, 336, 383, 399, 405, 408, 423, 451
- Specialist Medical Units**
- 1 Cdn. Mob. Hyg. Lab., 135, 180, 276, 386, 450
- 1 Cdn. Mob. Bact. Lab., 135, 276, 296, 334, 335, 386, 404, 450

Canadian Medical Units*Specialist Medical Units—cont.*

- 1 Cdn. Medical Research Lab., 267, 384, 386, 450
- 1 Cdn. Ophthal. Unit, 451
- 2 Cdn. Exhaustion Unit, 334, 398, 401, 404, 451
- 1 Cdn. N.P. Team, 386
- 2 Cdn. V.D.T.T., 276, 334, 386, 404, 451
- 1, 4, 5 Cdn. A.M.C.U.s., 451
- 2, 3 Cdn. A.M.C.U., 296, 451

Dental Units

- 1 Cdn. Army Dental Centre, 453
- 3 Cdn. Dental Company, 450

Greek Medical Units

- Greek G.H., 388, 448
- Greek F.S.U., 402

Indian Medical Units*Hospitals*

- 11 I.G.H., 155, 297, 443, 446, 449, 455
- 14 C.G.H., 106, 107, 118, 131, 136, 155, 171, 178, 192, 219, 296, 297, 443, 446, 449, 455
- 16 C.G.H., 162, 215, 219, 240, 241, 261, 290, 298, 351, 446, 449
- 18 I.G.H., 261, 323, 332, 334, 387, 388, 411, 437, 438, 442, 446, 448, 452, 453, 454
- 30 I.G.H., 106, 107, 118, 131, 136, 155, 170, 171, 178, 192, 219, 261, 297, 322, 349, 351, 442, 446, 449, 454
- 31 C.G.H., 261, 332, 388, 389, 391, 392, 393, 442, 443, 446, 448, 452, 453, 454, 500

Casualty Clearing Stations

- 2 (Ind.) C.C.S., 162, 215, 219, 220, 262, 263, 266, 287, 288, 290, 296, 326, 327, 329, 331, 348, 349, 350, 352, 353, 354, 355, 386, 438
- 3 (Ind.) C.C.S., 327, 328, 329, 331, 333, 348, 349, 350, 410, 411, 412, 413, 414, 415, 417, 423, 436, 437, 443, 451, 474, 475, 477, 478, 479, 480, 482, 484, 485, 486
- 9 (Ind.) C.C.S., 106, 118, 119, 131, 155, 162, 170, 171, 172, 173, 174, 175, 176, 180, 181, 182, 191, 193, 266, 276, 277, 292, 297, 330, 331, 334, 346, 350, 351, 384, 386, 387, 388, 392, 393, 394, 395, 396, 431, 432, 434, 435, 439, 441, 442, 443, 450, 474, 475, 476, 477, 481, 483, 498, 499, 500, 502

Field Surgical Units

- 1 (Ind.) M.S.U., 105, 106, 155, 176, 193, 297, 384, 386, 410, 412, 450, 452, 478, 480
- 3 (Ind.) M.S.U., 384, 502
- 24 (Ind.) M.S.U., 298

Field Ambulances

- 3 (Ind.) Lt. Fd. Amb., 351, 416, 418, 419, 420, 427, 439, 440, 441, 442, 451
- 14 (Ind.) Fd. Amb., 294, 345, 351, 352, 353, 354, 355, 438, 439, 440, 441, 442, 443, 451, 501
- 17 (Ind.) Fd. Amb., 161, 162, 215, 216, 217, 219, 292, 293, 334, 345, 346, 353, 432, 433, 434, 435
- 21 (Ind.) Fd. Amb., 294, 351, 352, 353, 354, 355, 438, 439, 440, 441, 442, 443, 451, 501
- 26 (Ind.) Fd. Amb., 161, 162, 215, 216, 217, 219, 292, 293, 334, 345, 346, 353, 432, 433, 435
- 29 (Ind.) Fd. Amb., 104, 118, 131, 153, 154, 155, 156, 189, 286, 287, 289, 296, 348, 350, 422, 423, 435, 437, 498, 499
- 30 (Ind.) Fd. Amb., 294, 351, 352, 353, 354, 355, 438, 439, 440, 441, 442, 443, 451, 501
- 31 (Ind.) Fd. Amb., 104, 118, 131, 151, 153, 154, 155, 189, 286, 287, 289, 296, 347, 348, 350, 351, 435, 436, 437, 452, 498, 500
- 32 (Ind.) Fd. Amb., 162, 215, 292, 293, 334, 345, 346, 432, 433, 434, 435
- 33 (Ind.) Fd. Amb., 104, 118, 131, 153, 154, 155, 156, 189, 286, 287, 289, 296, 348, 350, 422, 423, 435, 436, 437, 452, 499, 500

Field Hygiene Sections

- 12 (Ind.) Fd. Hyg. Sec., 450
- 14 (Ind.) Fd. Hyg. Sec., 294
- 15 (Ind.) Fd. Hyg. Sec., 161, 293, 345
- 20 (Ind.) Fd. Hyg. Sec., 104, 118, 131, 153, 154, 189, 296, 452

Miscellaneous Units

- 3 Ind. M.A.S., 451, 478, 480
- 6 Ind. M.A.S., 106, 107, 155, 174, 191, 410, 452
- 9 Ind. M.A.S., 354
- 18 Ind. M.A.S., 161, 216, 219, 263, 288
- 1 Ind. Dent. Surg. Unit, 453
- 2 Ind. Dent. Mech. Unit, 155, 453
- 3 Ind. Mob. Dent. Mech. Unit, 105, 106, 191, 398
- 11 Ind. Dent. Surg. Unit, 450
- 12 Ind. Dent. Surg. Unit, 161, 296, 350
- 15 Ind. Dent. Surg. Unit, 105, 106, 191, 296, 450
- 'D' Ind. Dent. Surg. Unit, 412, 452
- 'E' Ind. Dent. Surg. Unit, 450, 502
- 7 Ind. V.D.T.C., 330, 331, 351, 386, 451, 453, 503
- 2 Ind. A.M.C.U., 293, 451
- 8 I.S.S., 298
- 18 I.S.S., 181, 298, 327, 329, 331, 351, 385, 386, 387, 388, 389, 391, 443, 451, 503
- 30 I.S.S., 105, 106, 118, 174, 191, 192, 298

- 39 I.S.S., 296, 329, 330, 331, 352, 355, 386, 391, 451, 503
 48 I.S.S., 181, 296, 334, 453
 6 (Ind.) Fd. Lab., 298
 11 (Ind.) Fd. Lab., 453
 12 (Ind.) Fd. Lab., 106, 107, 182, 297
 14 (Ind.) Fd. Lab., 297
 16 (Ind.) Fd. Lab., 192, 297
 51 (Ind.) Fd. Lab., 453
 1 (Ind.) Mob. X-ray Unit, 297
 9 (Ind.) Mob. X-ray Unit, 297
 41 (Ind.) Mob. X-ray Unit, 453
 7 Ind. Depot Med. Stores, 297, 329, 387, 453
 3 Ind. Con. Depot, 297
 25 Ind. Ophthal. Unit, 155, 191, 298
 24 Ind. E.N.T. Surg. Unit, 155, 191
 13 Ind. Mule Company, 128
 14 Ind. Mule Company, 128
- New Zealand Medical Units**
- General Hospitals*
- 1 N.Z.G.H., 159, 161, 220, 290, 340, 388, 403, 404, 428, 429, 430, 432, 446, 448, 452, 454, 495
 2 N.Z.G.H., 220, 240, 241, 263, 290, 298, 338, 339, 340, 341, 429, 446, 449, 454, 494, 495
 3 N.Z.G.H., 136, 161, 176, 178, 297, 340, 341, 429, 432, 446, 449, 455, 495
- Casualty Clearing Station*
- 1 (N.Z.) C.C.S., 136, 155, 156, 159, 161, 176, 180, 182, 191, 193, 219, 220, 238, 263, 264, 266, 277, 290, 296, 326, 327, 328, 331, 333, 337, 338, 339, 340, 386, 388, 392, 393, 396, 405, 414, 429, 430, 431, 432, 450, 454, 473, 474, 475, 476, 478, 481, 482, 483, 485, 492, 493, 494, 495
- Field Surgical Units*
- 1 (N.Z.) F.S.U., 156, 182, 191, 238, 296, 337, 338, 340, 386, 428, 429
 2 (N.Z.) F.S.U., 450
 3 (N.Z.) F.S.U., 450, 492, 494
- Field Transfusion Unit*
- 2 (N.Z.) F.T.U., 135, 156, 161, 182, 191, 221, 238, 290, 296, 337, 338, 386, 428, 429, 430, 450, 472, 494, 502
- Field Ambulances*
- 4 (N.Z.) Fd. Amb., 135, 136, 154, 156, 157, 158, 159, 160, 177, 182, 220, 290, 337, 338, 339, 404, 428, 429, 430, 431, 432, 451, 492, 493, 494
 5 (N.Z.) Fd. Amb., 136, 156, 157, 158, 159, 160, 220, 221, 290, 337, 338, 339, 402, 428, 429, 430, 431, 451, 492, 493, 494, 495
 6 (N.Z.) Fd. Amb., 135, 136, 156, 157, 158, 159, 160, 182, 219, 220, 221, 264, 290, 337, 338, 339, 428, 429, 430, 431, 451, 492, 493, 494
- Field Hygiene Section*
- 4 (N.Z.) Fd. Hyg. Sec., 135, 161, 450
- Miscellaneous Units*
- N.Z.M.A.C., 136, 191, 264, 337, 429, 451, 494
 1 N.Z.M.D.U., 136, 161, 296, 450
 14 N.Z. Optician Unit, 428, 451, 502
 102 N.Z. V.D.T.C., 136, 156, 161, 219, 296, 386, 428, 451
 N.Z. Depot Med. Stores, 432, 453
 1 N.Z. Con. Depot, 136, 297, 341, 432, 453, 495
- Polish Medical Units**
- General Hospitals*
- 1 Pol. G.H., 297, 446, 449, 455
 2 Pol. G.H., 264, 334
 3 Pol. G.H., 238, 240, 247, 297, 446, 449, 455
 6 Pol. G.H., 263, 264, 393, 473, 474, 502
 7 Pol. G.H., 393, 502
 161 Pol. G.H., 383, 384, 387, 388, 446, 448, 452, 453, 454
 162 Pol. G.H., 383, 384, 387, 391, 392, 446, 448, 450, 454
- Casualty Clearing Stations*
- 3 (Pol.) C.C.S., 238, 263, 264, 296, 384, 386, 387, 392, 393, 450, 473, 474, 475, 502
 5 (Pol.) C.C.S., 263, 264, 296, 384, 386, 387, 392, 393, 450, 473, 474, 475, 502
- Field Surgical Units*
- 45 (Pol.) F.S.U., 263, 384, 386, 450, 502
 46 (Pol.) F.S.U., 263, 384, 386, 450, 502
 47 (Pol.) F.S.U., 263, 296, 384, 386, 450, 502
 48 (Pol.) F.S.U., 263, 384, 386, 450, 502
- Field Transfusion Units*
- 49 (Pol.) F.T.U., 263, 386, 450, 502
 50 (Pol.) F.T.U., 263, 296, 386, 450, 502
- Field Ambulances*
- 1 (Pol.) Fd. Amb., 451
 2 (Pol.) Fd. Amb., 384, 451
 3 (Pol.) Fd. Amb., 473, 475
 4 (Pol.) Fd. Amb., 473, 474, 475
 5 (Pol.) Fd. Amb., 451, 474
 6 (Pol.) Fd. Amb., 384, 451
 7 (Pol.) Fd. Amb., 451
 9 (Pol.) Lt. Fd. Amb., 451
 31 (Pol.) Fd. Amb., 296, 451, 502
 32 (Pol.) Fd. Amb., 386
- Field Hygiene Sections*
- 3 (Pol.) Fd. Hyg. Sec., 450
 7 (Pol.) Fd. Hyg. Sec., 450
 32 (Pol.) Fd. Hyg. Sec., 386, 450

Polish Medical Units—cont.*Miscellaneous Units*

- 3, 5, 34 (Pol.) M.C.U., 451
 29 (Pol.) M.A.C., 264, 265, 383, 451
 344 (Pol.) Adv. Depot Med. Stores, 296, 386, 450, 502
 1 Pol. Con. Depot, 264, 297
 Pol. Mob. Bact. Lab., 386, 502
 Polish extensions of General Hospitals
 'C', 'D', 'E', 'F', 452

South African Medical Units*General Hospitals*

- 102 S.A.G.H., 136, 279, 446, 449, 455
 106 S.A.G.H., 261, 279, 446, 449, 454
 107 S.A.G.H., 323, 412, 449, 451, 454
 108 S.A.G.H., 411, 412, 413, 443, 448, 452, 454

Casualty Clearing Station

- 8 (S.A.) C.C.S., 266, 277, 279, 326, 327, 331, 332, 333, 337, 410, 411, 412, 413, 414, 445, 451, 488, 489

Field Surgical Units

- 1 (S.A.) F.S.U., 278, 410, 411, 412, 445, 452
 2 (S.A.) F.S.U., 412, 445, 452

Field Ambulances

- 19 (S.A.) Fd. Amb., 278, 279, 342, 343, 412, 443, 445, 452, 488
 20 (S.A.) Fd. Amb., 278, 342, 343, 412, 445, 452, 488, 489
 29 (S.A.) Fd. Amb., 452

Field Hygiene Section

- 6 (S.A.) Fd. Hyg. Sec., 278, 412, 452

Miscellaneous Units

- 6 (S.A.) M.D.U., 278, 412, 452
 2 (S.A.) Con. Depot, 332, 384, 453

Yugoslav Medical Units, 446, 449, 455**(3) Greece****British Formations**

- III Corps, 594, 598, 599
 X Corps, 600
 4th Division, 599, 601, 606, 607, 610, 623
 13th Division, 608, 623
 46th Division, 605, 606, 610, 624
 2nd Independent Para. Brigade, 599, 620, 624
 10th Brigade, 610
 12th Brigade, 610
 23rd Armoured Brigade (in infantry rôle), 599, 606, 607, 622
 28th Brigade, 608, 610
 128th Brigade, 606
 129th Brigade, 606
 139th Brigade, 599, 601, 604, 605

Other Units

- 4th Buffs, 594, 596
 1st D.L.I., 594
 1st King's Own, 594
 L.R.D.G., 594
 K.D.G., 600
 2nd R.I.F., 594, 596
 2nd R.W.K., 594
 S.A.S. Regt., 594, 596

Indian Formations

- Indian 4th Division, 599, 604, 607, 608, 623
 Indian 8th Division, 594
 Indian 5th Brigade, 599, 601
 Indian 7th Brigade, 599
 Indian 11th Brigade, 599, 604, 605

Greek Formations

- Greek 3rd Mountain Brigade, 600
 Greek Sacred Heart Squadron, 594, 608

British Medical Units*General Hospitals*

- 53 B.G.H., 600, 604, 608
 72 B.G.H., 603, 604, 607
 97 B.G.H., 599, 600, 603, 607, 608, 616

Hospital Ships

- H.S. *Empire Clyde*, 604
 H.S. *Gradisca*, 597
 H.S. *Maine*, 600, 603, 604
 H.S. *Toscana*, 605

Field Dressing Stations

- 68 F.D.S. (23rd Armd. Brigade), 608, 622
 865 F.D.S. (13th Division), 609
 867 F.D.S. (with 'Force 292'), 595

Field Ambulances

- 11 Fd. Amb. (13th Div.), 609
 12 Fd. Amb. (4th Div.), 603, 608
 127 Para. Fd. Amb. (2nd Indep. Para. Bde.), 600, 603
 150 Lt. Fd. Amb. (23rd Armd. Bde.), 599, 608, 610
 159 Fd. Amb. (4th Div.), 607, 608, 610, (Fig. 135)
 161 Fd. Amb. (234th Bde.), 595, 596, 597
 183 Fd. Amb. (46th Div.), 600, 605 (Fig. 136)
 184 Fd. Amb. (46th Div.), 605, 610 (Fig. 136)
 185 Fd. Amb. (46th Div.), 605, 610 (Fig. 136)

Field Hygiene Section

- 21 Fd. Hyg. Sec., 595, 600, 612

Field Surgical Units

- 4 F.S.U., 607
- 12 F.S.U., 596
- 15 F.S.U., 596

Field Transfusion Units

- 4 F.T.U. (Blood Bank) at 97 B.G.H.,
607
- 33 F.T.U. (with 'Force 292'), 595

Staging Section

- 12 B.S.S., 607

Anti-Malaria Units

- 2 A.M.C.U., 595
- 26 A.M.C.U., 612
- 29 A.M.C.U., 612

Malaria Field Laboratory

- 2 Mal. Fd. Lab., 595

Indian Medical Units**General Hospital**

- 16 Indian General Hospital, 600, 604,
607, 608

Casualty Clearing Station

- 2 Indian Casualty Clearing Station, 600,
602, 603, 608

Field Ambulances

- 17 Ind. Fd. Amb. (Ind. 4th Div.), 600
- 26 Ind. Fd. Amb. (Ind. 4th Div.), 601,
602
- 30 Ind. Fd. Amb. detach. (with 'Force
292'), 595
- 32 Ind. Fd. Amb. (Ind. 4th Div.), 600,
605

Field Hygiene Sections

- 15 Ind. Fd. Hyg. Sec., 600, 612
- 32 Ind. Fd. Hyg. Sec. (Ind. 4th Div.), 600

Stanford University Libraries



3 6105 015 624 468

D807

G7

C73

v. 3



**Stanford University Libraries
Stanford, California**

Return this book on or before date due.

--	--	--



