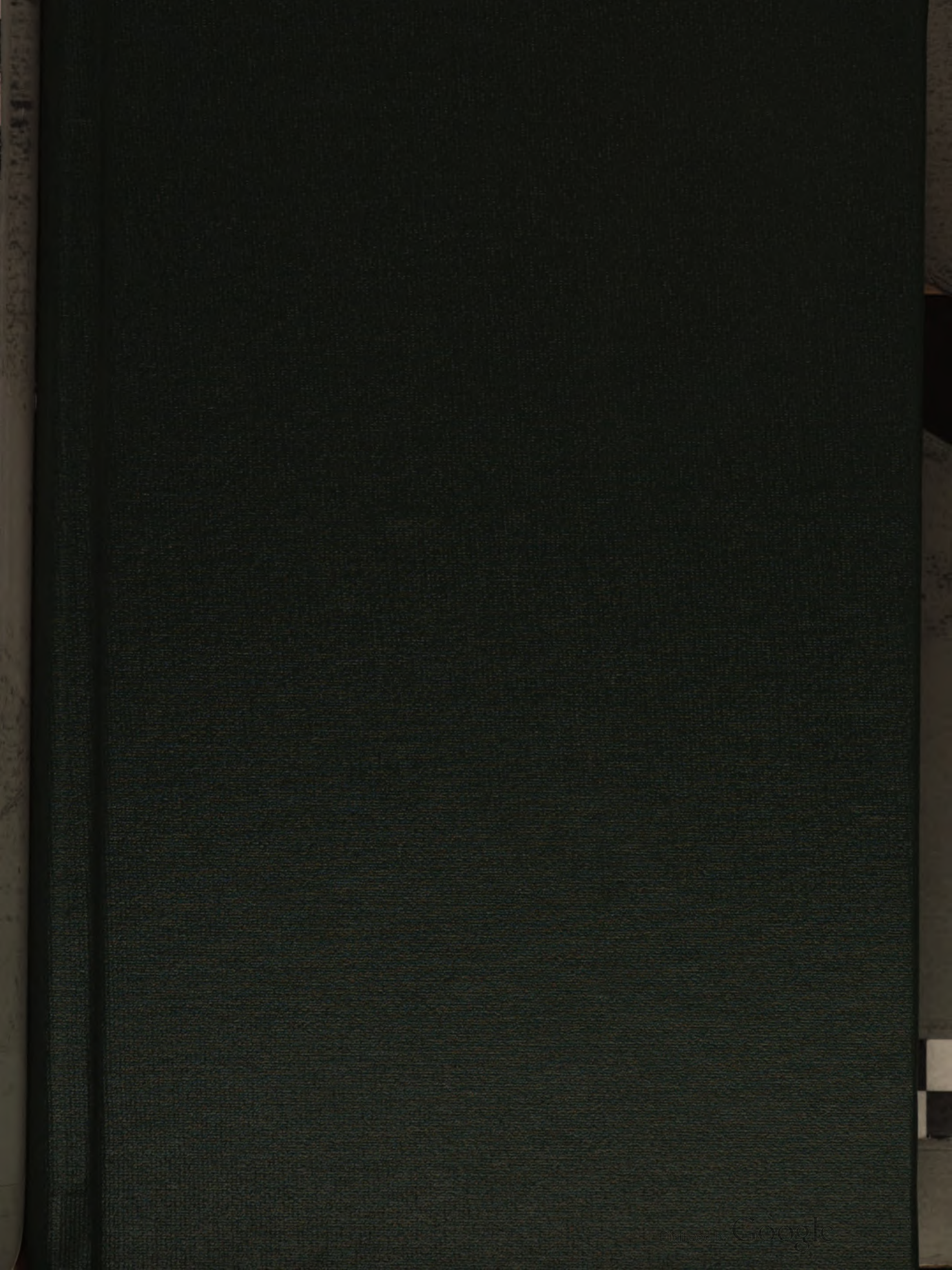

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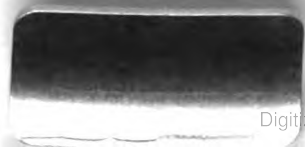


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HISTORY OF
THE SECOND WORLD WAR
UNITED KINGDOM MILITARY SERIES

Edited by SIR JAMES BUTLER

The authors of the Military Histories have been given full access to official documents. They and the editor are alone responsible for the statements made and the views expressed.



The defeat of the German Navy 1945

Top. U-boats entering Wilhelmshaven to surrender.

Bottom. The pocket-battleship *Scheer* capsized at Kiel. Parts of pre-fabricated U-boat hulls in foreground.

THE WAR AT SEA

1939-1945

BY

CAPTAIN S. W. ROSKILL, D.S.C., R.N.

VOLUME III

THE OFFENSIVE

Part II

1st June 1944 - 14th August 1945

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AUTHOR'S PREFACE

THE presentation to the public of this second and final part of the third volume of 'The War at Sea' completes the task to which I set my hand just over ten years ago. I have already, in earlier volumes, acknowledged the debt I owe to the staffs of the Admiralty's and Air Ministry's historical sections, and to the many senior officers of all three services who have read my drafts; and I will therefore only record here that the same unstinting interest and help has continued right to the end of my work. My colleagues who are engaged on the various campaign volumes of the British Military History Series have also given me constant and expert advice regarding events in the theatres with which they are particularly concerned. In particular I would thank Major L. F. Ellis for letting me exploit his knowledge of the invasion of Normandy in 1944, and for allowing me to base certain maps on those which have been prepared for his own forthcoming volume entitled 'Victory in the West'. Once again the United States Navy's historian Rear-Admiral S. E. Morison, U.S.N.R. (Retd.), his assistant Rear-Admiral Bern Anderson, U.S.N., and Rear-Admiral E. M. Eller, U.S.N., the head of the Navy Department's Office of Naval History, have given me the most friendly help in comparing American records with our own, and in advising me on the Pacific campaigns.

The appearance of each volume of 'The War at Sea' has brought me a considerable correspondence from all over the world, including the former enemy countries, in which my attention has been drawn to events of which the writers had special knowledge. In some cases these were only of minor significance; but others certainly justify amplification, and in a few cases correction of what I have recorded. Research into the ever-increasing material available in many different countries has also brought to light a few important facts of which I was unaware when my earlier volumes were sent to press. I would like to take this opportunity to thank my correspondents for the interest they have shown in my work, and would assure them that I intend to leave behind in this office material, which will include some of the points they have raised, for use in the preparation of a completely new edition of 'The War at Sea' when the time comes that supplies of the present imprints are approaching exhaustion. I would, however, emphasise that up to the present nothing has come to light which necessitates revision of any of the conclusions I have drawn.

I must acknowledge once again my debt to Colonel T. M. Penney,

who has directed the production of my maps, and to the skill and care with which Mr. D. K. Purle and Mr. M. J. Godliman have drawn them. Miss E. R. Frost and the staff of the Cabinet Office Typing Section have taken great pains to produce accurate typescripts from my drafts, and have shown unfailing patience in dealing with the innumerable amendments I have made to them. For the illustrations in this volume I am indebted primarily to the Imperial War Museum, the Admiralty, the National Maritime Museum (for permission to reproduce pictures by Admiralty War artists), and the U.S. Navy Department; but Mr. A. G. Ditcham has provided me with an excellent photograph which he took while serving in the Royal Navy, and Herr Franz Selinger has found me several of interest in his large collection of German photographs.

Though I will not deny that the completion of this volume has brought me a considerable sense of relief, it has been a great privilege to try to construct a record of the work of the Royal Navy and its comrades of the Royal Air Force which would stand the test of time. My final acknowledgements are therefore to the Board of Admiralty which originally suggested that I should undertake the task, and to Professor Sir James Butler who not only accepted the Admiralty's suggestion but has guided me throughout the whole process of creating this work.

S. W. ROSKILL

Cabinet Office,
London, S.W.1.

'But the English temper, when once aroused, was marked by a tenacity of purpose, a constancy of endurance, which strongly supported the conservative tendencies of the race.'

A. T. Mahan: *The Influence of Sea Power on the French Revolution and Empire*, Vol. II, p. 317.

**CHRONOLOGICAL SUMMARY
OF PRINCIPAL EVENTS
JUNE-DECEMBER 1944**

**CHRONOLOGICAL SUMMARY OF PRINCIPAL EVENTS
JUNE—DECEMBER 1944**

1944	Atlantic & Home Waters	Arctic	Mediterranean	South-East Asia	Pacific	Europe
June	Very few U-boats at sea in the Atlantic. U-boat activity confined to attempts to attack Allied invasion shipping in the Channel	Arctic convoys still suspended	4 Allies enter Rome 17 Allied assault on Elba	Japanese 15th Army routed at Imphal. Renewal of U-boat activity.	15 Americans assault Saipan in the Marianas 19-20 Battle of the Philippine Sea	6 Allied landings in Normandy 14 First flying bombs land in England 26 Allies capture Cherbourg Russians launch summer offensive
July	Schnorkel-fitted U-boats based on Biscay ports meet with little success against Allied Channel shipping		Allied advance in Italy reaches the 'Gothic Line' 19 Allies enter Leghorn	Rise in shipping losses 25 Eastern Fleet bombards Sabang Pursuit of Japanese 15th Army begins	21 Americans assault Guam	20 Attempt on Hitler's life 25 Allied offensive leads to breakout in Normandy 30 Russian advance reaches the Vistula
August	U-boats based on the Biscay ports begin to withdraw to Norway	Arctic convoys resumed 15-27 JW.59 22-29 Carrier aircraft of Home Fleet attack <i>Tirpitz</i> in Altenfjord	15 Allied landings in the south of France 22 Allies begin offensive against the 'Gothic Line'	Shipping losses continue	1 Japanese resistance in the Marianas ends	Russians overrun Roumania. Allies recapture most of western and southern France 25 Paris liberated

September	U-boats continue to withdraw to Norway. Start of U-boat campaign in inshore waters round the British Isles	15-23 JW.60	Germans begin to reduce their garrisons in the Aegean Islands	End of U-boat activity	Heavy American carrier raids on the Philippines 15 Americans assault the Palaus and Morotai	Russians overrun Bulgaria 3 Allies take Brussels 4 Allies take Antwerp 16 Second Quebec conference begins 17 Airborne assault launched on Arnhem
October	Very little U-boat activity. Reorganisation of U-boats continues in Norwegian bases	20-28 JW.61	3 Germans decide to withdraw from Greece 15 Allies enter Athens. Relief ships sent to Greece. Allied advance in Italy held up before Bologna		20 American landings in Leyte Gulf 24-25 Battles for Leyte Gulf Japanese first adopt suicide air attacks	Russians advance to the Baltic, and into Hungary and Yugoslavia
November	Reorganisation continues. All U-boats now fitted with Schnorkel. A few sail to operate off the British Isles	12 <i>Tirpitz</i> sunk in Tromsø by R.A.F. 29/11-7/12 JW.62	Unrest in Greece. British warships sent to principal ports	14th Army establishes bridgehead on the Chindwin 22 Formation of the British Pacific Fleet		1 Assault on Walcheren 28 First convoy arrives at Antwerp after clearance of the Scheldt
December	Germans begin to intensify their U-boat campaign in inshore waters round the British Isles		Civil war in Greece, involving British forces	14th Army advances to the Irrawaddy		16 Germans begin counter-offensive in the Ardennes 26 Counter-offensive halted

CHAPTER XIV

PRELUDE TO 'NEPTUNE'

'The soldiers shall be levied,
And thou, Lord Bourbon, our high Admiral,
Shall waft them over with the royal fleet.'
Shakespeare, *King Henry VI*, Act IV. 1.

THE British War Cabinet had never been under any illusion that, in order to accomplish the final downfall of Hitler's Germany, it would be necessary for the Allied armies to return to the continent of Europe and defeat the enemy's land forces in the field. Centuries of tradition, and of experience in combined operations, had taught us that by no other means could a maritime strategy be crowned by final victory. Planning for such an eventuality was actually begun quite soon after our total expulsion from the continent in 1940, even though it can at the time have seemed little more than an expression of hope and faith. Towards the end of 1941 the British Joint Planners produced 'an outline plan for landing a force on the continent in the final phase of the war'. This document was drafted before the United States had become an Ally, and therefore took no account of any assistance which that nation might give. At that time we hoped to launch the invasion, called Operation 'Round-up', in 1943; but we recognised that, unless German military power had deteriorated greatly in the meanwhile, it would stand little chance of success.

After the first Washington conference in December 1941 British and American staffs began to work together on the subject, but the entry of America into the war altered many factors affecting 'Round-up', and by the spring of 1942 the British planners had come to regard it only as a 'staff study'. In March 1942 the U.S. War Department, however, prepared 'a very simple sketch of operations' aiming at the invasion of Europe¹, and also a plan to build up American strength in Britain (called 'Bolero'). The British Chiefs of Staff next ordered the preparation of a new plan for the destruction of the German forces in the west, which they called 'Super-Roundup', and the Americans soon became closely associated with that work. On the 2nd of March 1942 the Combined Chiefs of Staff asked for a review of the various proposals under discussion, and for a report on the feasibility of launching an invasion during the current year.

¹ Matloff and Snell '*Strategic Planning for Coalition Warfare 1941-42*', p. 179 (U.S. War Department, 1953).

Meanwhile the need to take some of the weight of German land and air strength off Russia had become urgent, and on the 10th of March 1942 the British Chiefs of Staff considered ways and means of accomplishing such a purpose. One proposal was to establish a bridgehead on the continent with the object of provoking a large-scale air battle. These discussions marked the genesis of operation 'Sledgehammer', which differed from the earlier 'Roundup' in that it was an emergency plan to seize and hold a lodgement in France in order to force the enemy to commit substantial forces to its containment, rather than a large-scale invasion aiming to defeat the main German armies and to liberate Europe from the Nazi yoke. The reader should, however, note that 'Sledgehammer', like its predecessor 'Roundup', was a British conception.

In May 1942 a body known as the 'Combined Commanders' was formed to come to grips with the problem of invading north-west Europe. It consisted of Lieutenant-General D. D. Eisenhower, U.S. Army, the Commanders-in-Chief, Home Forces, and Fighter Command, the Chief of Combined Operations, and Vice-Admiral Sir Bertram Ramsay. On the 18th of June the Admiralty, looking further ahead, appointed Ramsay 'Naval Commander Expeditionary Force', and described his duties as 'planning [the naval side of] the invasion of France and the Low Countries', and 'the general direction of all naval forces engaged in large-scale landing operations, for the transport of the Expeditionary Force across the sea, and its landing and establishment on the enemy coast'. Thus, almost exactly two years before any such intention was actually carried out, were the duties of the naval commander who was ultimately to execute it first defined. In fact Admiral Ramsay's association with the plans to invade France was interrupted, firstly by the use of his services to direct the planning of operation 'Torch' in November 1942¹, and secondly by his appointment to command the Eastern Task Force in the invasion of Sicily in July of the following year.² But his diversion to other rôles in the gradual unfolding of Allied strategy did not reduce the need to achieve continuity in planning the invasion of France. In May 1943 Admiral Sir Charles Little, then Commander-in-Chief, Portsmouth, was therefore ordered to act as Naval Commander-in-Chief (designate) for the invasion of Europe, with Commodore J. Hughes-Hallett, from the staff of the Chief of Combined Operations, as his Chief of Staff. Experience showed, however, that an officer who already carried the heavy burden of a home naval command could not easily discharge this new and rapidly growing duty. In the following October Admiral Ramsay therefore resumed the responsibilities first allocated to him a year earlier.

¹ See Vol. II, pp. 312-313.

² See Vol. III, Part I, p. 118.

To return to the early growth of the plan, it soon became apparent that the forces which would be available and trained would be nothing like adequate for the invasion of France to be launched in 1942—unwilling though the Americans were to accept any postponement of what they believed to be both practicable and the only way of ending the war quickly.¹ Long discussions ensued; but the American Chiefs of Staff held to their view so tenaciously that only after a ruling had been obtained from President Roosevelt did they accept that the strategy all along favoured by the British—namely to re-open the Mediterranean first by expelling the Axis armies from Africa—was the only offensive which could be undertaken in 1942 with reasonable prospects of success. Moreover, following the conclusion of the first stage of the British strategy, it was only after long and patient negotiation at the Casablanca conference of January 1943 that the Americans accepted that it should next be exploited by invading Sicily.² That decision made the postponement of the cross-Channel invasion until 1944 inevitable. In fact no knowledge which has since come to light has produced any sound reasons for believing that, even had the Mediterranean strategy not been adopted, we could have landed and maintained an army in France earlier than we did; for shortage of shipping, and still more of landing craft³, and the state of training of the larger number of men of all services needed to take part in such an assault, would have prevented its earlier execution.

While the Anglo-American negotiations were in progress, and the Allied forces were bringing their first strategic offensives to a successful conclusion in Africa and Sicily an enormous amount of hard, unspectacular planning work was being carried out in London by a Combined Allied Staff working under Lieutenant-General F. E. Morgan. This body produced the 'C.O.S.S.A.C. Plan'⁴ for the invasion of France, which was presented to the Allied leaders at the first Quebec conference in August 1943 and then received the approval of the Combined Chiefs of Staff. On the 26th of May the code word describing the invasion of France had been altered to 'Overlord', and on the 7th of September the Admiralty informed all authorities that 'the naval operation within "Overlord" would be known as operation "Neptune"'. ←

¹ See L. F. Ellis *Victory in the West*, Vol. I, J. M. A. Gwyer and J. R. M. Butler *Grand Strategy*, Vol. III, and M. Howard *Grand Strategy*, Vol. IV (all in preparation) for a full account of these discussions.

² See Churchill, Vol. IV, pp. 619–620, for a summary of the decisions taken at Casablanca.

³ The decision to invade North Africa in 1942 caused the Americans to reduce the priority given to construction of landing craft; and they were not again given first priority until after the Quebec conference in August 1943. Thus it could be argued that had a date in 1943 been agreed for the invasion of North-West Europe the shortage of landing craft would not have been so acute.

⁴ From the initials of the 'Chief of Staff to the Supreme Allied Commander (designate)'.

The C.O.S.S.A.C. staff had long since chosen the stretch of Normandy coast between the rivers Orne and Vire as the scene of the assault.¹ Many factors had affected the choice, such as the beach gradients, tidal conditions, the distance from ports of embarkation and from home fighter stations, the proximity of ports which could be captured, and the strength of the enemy's defences. The C.O.S.S.A.C. staff had, however, to tailor their plans to the strength which the Combined Chiefs of Staff had allocated to the purpose. Thus although General Morgan would have greatly preferred a heavier initial assault on a wider front, he was compelled to accept that the first landings would be made by only three divisions, with two more following up the assault forces. It will be told later how the strength of the invasion forces came to be increased, and the assault front widened.

As there was no major port on the chosen part of the French coastline, and the success of the whole undertaking plainly depended on our ability to reinforce the assault troops quickly and to keep them adequately supplied, the C.O.S.S.A.C. staff stated that they considered the construction of two artificial harbours off the beaches essential to success. This would, moreover, relieve us of the necessity to attack in the immediate vicinity of a major port, where the enemy defences were bound to be strongest; and would also greatly reduce the hazards of supplying an army over beaches exposed to all the vagaries of the English Channel weather.

Such, in brief outline, was the background to the immense undertaking, which finally bore fruit in the fateful month of June 1944.² If, in telling the story of the maritime side of the operation, we are here concerned chiefly with the work of Admiral Ramsay's forces, the reader should bear constantly in mind that the whole purpose of the operation was to land and support the Allied armies; and that neither the naval nor the military sides of the undertaking could have prospered had not the British and American air forces previously secured command of their own element, and had not the aircraft controlled by Air Chief Marshal Sir Trafford Leigh-Mallory, the Air Commander-in-Chief of the expedition, and Air Chief Marshal Sir Sholto Douglas's Coastal Command given that constant and unceasing co-operation and support without which no modern combined operation can prosper.

The appointment of the Supreme Commander for the whole undertaking was, however, left until a very late date. Not until the 6th of December 1943 did President Roosevelt announce that General Dwight D. Eisenhower was to undertake that heavy responsibility,

¹ See Map 24. The reasons for this choice are discussed in Churchill, Vol. V, p. 65.

² For a fuller account see J. Ehrman, *Grand Strategy*, Vols. V and VI (H.M.S.O., 1956).

and this delay produced serious and avoidable repercussions on the construction of the final plans. When General Eisenhower studied the C.O.S.S.A.C. plan he decided that it provided for too weak an assault on too narrow a front—a view in which he was supported by the British Prime Minister and also by General Sir Bernard Montgomery, who was appointed to command the military assault forces in December. General Montgomery represented that five divisions should be landed on a fifty-mile front, instead of only three on a front of about thirty miles, and that the initial assault should include landings at the base of the Cotentin Peninsula, in order to achieve the early isolation and quick capture of the port of Cherbourg.¹ These proposals accorded closely with the views which General Morgan had always held, but until a Supreme Commander had been appointed it was impossible to represent them sufficiently forcibly to obtain the allocation of the additional forces. It thus came to pass that the main problem facing the service planners during the early weeks of 1944 was to find the extra divisions, and to collect the increased amount of assault shipping needed. The outcome was that the subsidiary assault in the south of France ('Anvil'), which was originally to have been launched simultaneously with 'Overlord', was postponed in order to provide the additional shipping for the main operation, which itself was put off from May to June.² This latter decision gained for the assault forces an additional month's production of landing craft from British and American yards. But the late-hour changes in the plans seriously affected the administrative side of the whole undertaking. For example to land the two extra divisions required not only additional assault ships and craft, but more escorts, minesweepers and naval support ships; and more of all the innumerable ancillary vessels associated with such an undertaking. Furthermore additional assembly ports and training grounds had to be found in a small and highly congested country, the southern part of which was, by the beginning of 1944, already beginning to wear the appearance of one vast military cantonment. If there be a lesson to learn from the troubles which arose through General Eisenhower's justifiable insistence on greater strength, it is that the appointment of the whole hierarchy of command needed to launch and prosecute a combined offensive must be made at an early date, that the first duty of the high command must be to decide the strength needed, and that once the latter has been agreed only the most compelling reasons should be allowed to cause fundamental changes in the plan.

¹ See Map 23.

² For a full discussion of the difficulties which stemmed from the 'Eureka' conference at Teheran in November–December 1943, and the complex causes which led to the postponement of operation 'Anvil' the reader is referred to J. Ehrman, *Grand Strategy*, Vol. V, pp. 231–259 (H.M.S.O. 1956).

As it was, the consequences of the addition of the two extra divisions rippled and spread throughout the whole complex of the 'Overlord' plan during the early months of 1944, like a tidal wave sweeping into a shallow estuary and causing violent and often unforeseen effects in sheltered creeks many miles from the source of the original disturbance.

One of the greatest difficulties facing all the British services at this time was the acute shortage of man-power. The Admiralty estimated their additional needs for 'Neptune' at 35,000 men and 10,000 women; and other commitments for 1944, such as the commissioning of new escort carriers and the build-up of the Eastern Fleet, were producing yet higher demands for the fleet. In the end the Admiralty decided to lay up four of the older battleships, five small cruisers and forty destroyers to release their crews. The First Minelaying Squadron was also disbanded¹, and the last of the Armed Merchant Cruisers were recalled and paid off.² But even these measures were not enough, and to meet the additional requirements for 'Neptune' some soldiers and airmen had to be transferred to the Navy. Then the decision to increase the assault forces and widen the front made it plain that, in spite of recalling ships from the Mediterranean, stopping the flow of reinforcements to the Eastern Fleet and stripping the Atlantic convoys of their escorts, the Royal Navy would need more help from the Americans than had been envisaged at the time of the Quebec conference in August 1943. The decision then taken had been that the escort, covering and support forces would be British, but would receive 'some augmentation from the United States'. In particular a larger number of bombarding ships was now needed, and an appeal for reinforcements was therefore made to our American Allies.

One of the more difficult questions which arose out of the increase in the naval forces needed for 'Neptune' was the strength which should be retained at the Home Fleet's main bases in the north. The German surface forces were known to be weak, but our intelligence suggested that although the battle-cruiser *Gneisenau* was out of action, the pocket-battleships *Scheer* and *Lützow*, the heavy cruisers *Hipper* and *Prinz Eugen*, the light cruisers *Leipzig*, *Köln*, *Nürnberg* and *Emden*, besides a number of destroyers, torpedo-boats and U-boats, might all be used on forays into the eastern approaches to the Channel—if the enemy was really determined to stake everything on interrupting the invasion convoys. Although we now know that the contemporary assessments of the German Navy's effective strength were too high, it was obvious to the planners that the Home Fleet should not be run down to such an extent that it could not cope

¹ See Vol. I, pp. 263–264, and Part I of this volume, p. 61.

² See Vol. I, pp. 46, 270–271 and 454, and Part I of this volume, p. 62.

with such a counter-attack.¹ Furthermore the Home Fleet's aircraft carriers had for some months been making offensive sweeps off the Norwegian coast, in order to interrupt the important German inshore traffic and to implement the Allies' strategic deception plan, which aimed to make the enemy expect a landing in Norway simultaneously with or soon after the assault in France²; and those operations were to be continued during 'Neptune'. Another responsibility was that the Arctic convoys, which had been suspended since JW.58 had reached Murmansk early in April³, were to be restarted as soon as the success of the invasion seemed assured. The *Tirpitz* and five destroyers were still in Altenfiord, and recent attempts to inflict further damage on the battleship had been frustrated by bad weather and the improved defences.⁴ By June she might have repaired the damage done to her by the midget submarines and Fleet Air Arm bombers sufficiently to make another foray into the Barents Sea. Thus very strong escorts were needed to cover and accompany the Arctic convoys. Some of the Home Fleet's ships were also earmarked to join the British Eastern and Pacific Fleets as soon as possible; and, finally, it was not considered justifiable to risk the most modern of the heavy ships in the densely mined waters of the Channel.

It was, perhaps, understandable that the Americans should not at once have appreciated the extent and variety of the commitments falling on the Home Fleet.⁵ To them the retention of three modern battleships, six cruisers and half a score of destroyers (in addition to the three fleet carriers, which were not needed in 'Neptune') seemed excessive, and it was probably this that caused Admiral King initially to refuse our request for reinforcements. When, however, in April 1944 the needs were fully explained to him he agreed to send across three of his old battleships, two cruisers and twenty-two destroyers—which was more than we had originally asked for.

During the closing weeks of 1943 and early in 1944 small reconnaissance operations were carried out on the French coast by special teams known as Combined Operations Pilotage Parties. To avoid compromising our intentions some took place far to the east of the true scene of the assault, notably in the Dover Straits, to which we wished to attract the enemy's attention. In Seine Bay one series, for which the special parties went across in landing craft, was designed

¹ In fact at the end of May 1944 the *Hipper* and *Köln* were in dock, and all the other major surface ships mentioned were training in the Baltic. Some were not fully operational; but this could hardly have been realised at the time.

² See Part I of this volume, p. 279.

³ *Op. cit.*, pp. 279–280.

⁴ *Op. cit.*, p. 281.

⁵ *Cf. Morison, Vol. XI, pp. 55–56.*

to secure accurate information about the tides; but in January 1944 an urgent need to ascertain the state of the beaches in the American sector arose, and a special expedition was organised. It consisted of the midget submarine X.20, two trawlers and two motor launches, under Lieutenant-Commander H. N. C. Willmott. The X-craft, commanded by Lieutenant K. Hudspeth, R.A.N.V.R., who had taken part in the attack on the *Tirpitz* in September 1943¹, had on board three naval officers and two soldiers. She was towed from Portsmouth about half-way across the Channel, after which she proceeded under her own power to a position off the beaches. Meanwhile the trawlers and M.Ls patrolled in mid-Channel. To carry out what the Commander-in-Chief, Portsmouth, described as a 'sustained and impudent reconnaissance under the very nose of the enemy' was a most exacting task. Willmott's description of the conditions encountered during the passage merits preservation. 'It was' he wrote in his report 'found desirable for the officer on watch on the casing to be able to lift his head above water for breathing purposes. He is strapped to the induction pipe, and has a bar to which he clings with fervour, while floating on his front like a paper streamer on the bosom of the ocean. . . Legs are liable to considerable injury. There is a vacancy in the complement for an intelligent merman to fill this rôle.' None the less X.20 arrived safely off the beaches, and on two successive nights the soldiers swam ashore. They gained valuable intelligence regarding the possibility of heavy vehicles using the beaches, the state of the sand and shingle, the gradients encountered, and the enemy's defensive measures. The X-craft's periscope several times came under small-arms fire, but she returned safely to her rendezvous with the towing trawler.

In the middle of February 1944 Admiral Ramsay issued an outline naval plan to all authorities, and this formed the basis for the preparations which the local authorities had since been pressing ahead. On the 10th of April the Naval Commander distributed his final plan. It comprised an enormous volume of about 700 foolscap pages, with numerous plans and appendices. Its dimensions were, at first sight, so daunting that the Admiralty later circulated a message pointing out that it was generally necessary for commanding officers to study only the sections which specifically concerned them. None the less it cannot have been easy for the captains of all the 4,000 ships and craft involved, many of whom were quite junior officers, to master the details of their own share in the great enterprise and also gain the broad knowledge of the operation needed to co-operate intelligently in its execution when, as was virtually certain, the unexpected happened.

¹ Operation 'Source'. See Part I of this volume, pp. 66-68.

The opening words of Ramsay's orders were 'The object of operation "Neptune" is to . . . secure a lodgement on the continent from which further offensive operations can be developed'. Within the lodgement area port facilities ultimately capable of maintaining between twenty-six and thirty divisions were to be created from nothing.

The functions of the naval forces were defined in traditional words. They were to provide for 'the safe and timely arrival of the assault forces at their beaches, the cover of their landings, and subsequently the support and maintenance and the rapid build-up of our forces ashore'. The naval commander continued with a long list of his intentions, which included sweeping the channels and anchorages clear of mines, the provision of 'maximum naval gun support' for the advancing armies, the construction with sunken ships of five landing-craft shelters, two of which were later to be enlarged and incorporated in artificial harbours, the delivery of fuel in bulk by pipeline and tanker, and every form of repair, salvage and rescue organisation.

The main features of the 'Overlord' plan catered for the dropping of two airborne divisions inland of the beaches shortly before the assaults from the sea, the landing of five infantry divisions and Commandos or U.S. Rangers from ships and craft between Ouistreham and Varreville¹, and a rapid follow-up of the assault forces on the second tide of 'D-Day'. The rest of the follow-up forces were to land on the following day, and thereafter we would aim to build up the land forces at a rate of one-and-a-third divisions per day. After gaining a firm lodgement the objects included the early capture of the port of Cherbourg, and we hoped in addition to occupy the Brittany ports as far south as Nantes within five to six weeks. Finally the planners named the destruction of the German armies in the west, the capture of Paris, and the liberation of southern France as the more remote purposes. 'The operation' continued Admiral Ramsay 'is a combined British and American undertaking by all services of both nations.'

In the special command organisation set up to plan and execute the operation in its revised and extended form Admiral Ramsay was, under the Supreme Commander's directions, to 'exercise general command and control over all naval forces other than those providing distant cover . . .' and also to 'exercise direct command within the assault area off the French coast'. Except inside that zone the Commanders-in-Chief of the home naval commands at Portsmouth, Plymouth, Chatham and Rosyth were to continue to carry their normal responsibilities for the control of movements by sea. Though the conduct of the operation was Admiral Ramsay's responsibility,

¹ See Map 24.

and the limelight was bound to fall chiefly on his sea-going forces, an enormous amount depended on the work of the home naval commands, and on the subordinate officers in charge of the lesser ports. Training areas had to be established, exercises carried out, accommodation found for large additional numbers of ships and crews, and facilities provided for supplying stores, fuel and ammunition wherever they were needed. Admiral Ramsay later paid warm tribute to the co-operation he received from Admirals Sir Ralph Leatham (Plymouth), Sir John Tovey (the Nore), Sir Charles Little (Portsmouth) and Sir Wilbraham Ford (Rosyth), all of whom were senior to him in the Navy List; and it is right that the immense burden unobtrusively borne by the shore naval authorities, and the great contribution they made to the success of the operation should be remembered.

As in every combined operation, measures to deceive the enemy regarding our intentions occupied an important place in the plans. Thus our state of preparedness was designed to suggest a later date for the assault than was actually intended; and when we were nearly ready diversionary moves by air and naval forces were to suggest a landing in the neighbourhood of Calais. 'It is however' warned Ramsay 'manifestly difficult to attain any high degree of surprise in the attack.' His cautious realism was however, to be proved unduly pessimistic; for in fact a high degree of both strategic and tactical surprise was achieved.

To carry out the plan two naval Task Forces, called the Eastern (British) and the Western (American), were to be formed under Rear-Admiral Sir Philip Vian and Rear-Admiral A. G. Kirk, U.S.N., respectively. The former was to land the three divisions of the British Second Army in three areas (called, from east to west, 'Sword', 'Juno' and 'Gold') on a front of about thirty miles between the River Orne and the small harbour of Port en Bessin; while the latter was to land the U.S. First Army on a twenty-mile front immediately to the west in two areas called 'Omaha' and 'Utah'.¹ A fourth area to the east of the British assault (called 'Band') was never actually used. The commanders of the three British naval assault forces were Rear-Admiral A. G. Talbot (Sword), Commodore C. E. Douglas-Pennant (Gold) and Commodore G. N. Oliver (Juno), while Rear-Admirals J. L. Hall and D. P. Moon, U.S.N., had command of the Omaha and Utah forces in the western assault. In addition to the foregoing, two follow-up forces, under Rear-Admiral W. E. Parry (Force L) and Commodore C. D. Edgar, U.S.N. (Force B), were to come in immediately behind the main assaults to ensure a rapid start to the all-important build-up. In order to avoid any

¹ See Map 24.

misunderstanding in the chain of command the military forces were placed under the orders of the naval force commanders while at sea. In the plan the warships and the merchantmen taking part were all allocated individually to the various assault forces, and to the particular duties which they were to carry out. In general the British ships, which greatly preponderated, were to transport, escort and support the British assaults, and the American ships those of their own countrymen; but so closely were the two navies integrated that duties and allocations were exchanged without the slightest difficulty arising.

We expected that, once the enemy realised that an invasion was in progress, he would 'expend his forces ruthlessly', using light craft against the flanks of the assault area and U-boats against the convoys, laying many mines (including new types) in the shallow offshore waters, and sending midget submarines, aircraft and human torpedoes against the invasion forces. The strength available to the Germans was closely studied, and contemporary estimates did not differ greatly from the enemy's actual dispositions, shown in the table on page 16.

The Germans were not, however, relying only on their meagre naval forces to defeat an invasion, though they did hope that patrolling light craft and their coastal radar stations would give early warning of the approach of the assault forces. But Allied command of the air over the Channel was so complete that they soon found it almost suicidal to send out the sea patrols except on dark nights. Thus the possibility of gaining early warning of Allied intentions was never good. Defensive minefields were laid off the French coast, but owing to our bombing raids not enough mines to make the fields really effective had arrived. The Germans realised that the best weapon available to them was the new pressure-operated mine, which was in fact almost impossible to sweep; but they refused to risk compromising the invention by using it prematurely, and in fact no pressure mines were laid before D-Day. The Germans hoped that the powerful and very extensive coastal fortifications and defences, on which they had expended such prodigious energy and effort, would hold up the first assaults long enough for their mobile reserves to come into action and drive the invaders back into the sea. Meanwhile the Luftwaffe, though it had been greatly weakened by the Allies' strategic air offensive, would attack our assault shipping and support their own land forces, while U-boats from the Biscay bases came into the Channel and worked against our convoys. Though it is hard to see what more they could have done with the forces available to them, the weakness of the German counter-invasion plan, and especially its reliance on intelligence which they were unlikely to gain, is obvious.

Table 21

*The Disposition of German Naval Forces in the West, June, 1944**I Surface vessels—Channel coast*

Base	Fleet Torpedo-Boats	Motor Torpedo-Boats	Mine-Sweepers (all types)	Patrol Vessels	Artillery Barges
Ijmuiden	—	6	—	—	—
Bruges	—	—	12	13	—
Ostend	—	5	35	—	—
Dunkirk	—	—	11	—	—
Boulogne	—	8	11	—	16
Dieppe	—	—	12	—	—
Fécamp	—	—	—	—	15
Le Havre	5	—	50	21	—
Ouistreham to St. Vaast .	—	—	12	—	11
Cherbourg	—	15	—	—	—
St. Malo	—	—	20	23	—
TOTAL	5	34	163	57	42

NOTE: Five additional M.T.B's which were not operational on D-Day were present in various ports.

II Surface vessels—Atlantic coast

Base	Destroyers	Mine-sweepers (all types)	Patrol Vessels	Fleet Torpedo-boats
Brest	—	36	16	1
Benodet	—	6	—	—
Concarneau	—	19	—	—
Lorient	—	—	16	—
St. Nazaire, Nantes	—	16	15	—
Les Sables d'Olonne	—	20	—	—
La Pallice	1	—	—	—
Gironde	4	49	—	—
Bayonne	—	—	12	—
TOTAL	5	146	59	1

III U-boats allocated to anti-invasion duty

Base	Normal Strength	Number fitted with Schnorkel	Not immediately ready for sea	Sailed before midnight 6th June
Brest	24	8	9	15
Lorient	2	1	—	2
St. Nazaire	19	—	5	14
La Pallice	4	—	—	4
TOTAL	49	9	14	35

NOTE: The large U-boats, normally used on the ocean routes and stationed at Lorient and Bordeaux, took no part in anti-invasion operations.

To return to our own plans, the escort vessels (in all 286 destroyers, sloops, frigates, corvettes and trawlers) were to be provided by stripping the other naval commands to the bare minimum. Though the great majority came from the Royal and United States Navies, and especially from the former, the Canadian Navy was also represented, there were a few Dutch ships, and French, Greek, Polish and Norwegian crews manned others. The proportion of combatant ships, excluding landing ships and craft and auxiliary vessels, finally provided by the chief participants in 'Neptune' was British and Canadian 79 per cent, American 16½ per cent, and other nations 4½ per cent.¹ For the assault phase Admiral Ramsay divided the escorts between the naval authorities at Portsmouth, Chatham, Plymouth, Portland, Dover, Falmouth and Milford Haven in proportions based on the size and number of the convoys to be sailed from each base. Coastal craft were allocated on the same principles, and according to the very wide range of duties (minelaying, minesweeping, escorting, patrol and striking forces, and harbour defence) which fell to them. For the actual assaults some of the escorts were to be lent to the two Task Force Commanders, but once the Army was established ashore and the assault phase was over, all escorts and coastal craft were re-allocated to the home bases to meet the needs of the build-up. The naval commander's policy was, however, to keep escort groups together as far as possible throughout the operation; for we had long since learnt that tactical cohesion was only obtained when the ships thoroughly understood their group commander's methods, and had been trained by him.²

In addition to the escort vessels and coastal craft a large number of warships were allocated to the two Task Force Commanders to meet their requirements for long and close-range fire support, for defence of the great assembly of shipping lying exposed off the beaches, and for all the multifarious needs which arise in any great combined operation. These allocations are shown in Table 22 (page 18); but it should be remembered that a proportion of the escort vessels were, as mentioned earlier, also to serve the Home Commands during the preliminary convoy movements.

The Landing Ships and Landing Craft needed to transport the soldiers and to disembark them and all their equipment on the other side were also divided between the two Task Force Commanders, and sub-divided according to the needs of the five main assaults as shown in Table 23 (page 19).

Much depended, of course, on the success of the preparatory measures taken by the Allies. Chief among these was the air offensive

¹ See Table 22.

² See Vol. I, pp. 358-360, and Vol. II, p. 357.

Table 22

Operation 'Neptune'—Allocation of Warships for the Assault phase

(All ships were British or Commonwealth except where otherwise stated)

	<i>Western Naval Task Force</i> (Rear-Admiral A. G. Kirk, U.S.N.)	<i>Eastern Naval Task Force</i> (Rear-Admiral Sir P. Vian)	<i>Home Commands</i>	<i>Reserve</i> (under Admiral Ramsay)	<i>Total</i>
Battleships . . .	3 (U.S.)	3	—	1	7
Monitors . . .	1	1	—	—	2
Cruisers . . .	10 (3 U.S., 2 French)*	13 (1 Polish)*	—	—	23
Gunboats . . .	1 (Dutch)	2 (1 Dutch)	—	—	3
Fleet Destroyers . . .	30 (U.S.)	30 (2 Norwegian)	20 (4 U.S., 2 Polish)	—	80
<i>Hunt-class Destroyers</i> . . .	5	14 (2 Polish, 1 Norwegian, 1 French)	6	—	25
Sloops . . .	—	4	10	—	14
Fleet Minesweepers . . .	56 (9 U.S.)	42	—	—	98
Other Minesweepers and Danlayers . . .	62 (16 U.S.)	87	—	40	189
Frigates and Destroyer Escorts . . .	12 (6 U.S., 2 French)	19 (2 French)	32	—	63
Corvettes . . .	4 (2 French)	17 (2 Greek)	50 (3 Norwegian, 1 French)	—	71
Patrol Craft . . .	18 (U.S.)	—	—	—	18
A/S Trawlers . . .	9	21	30	—	60
Minelayers . . .	—	2	2	—	4
Coastal Craft (all types)	113 (81 U.S.)	90 (30 U.S.)	292 (8 French, 13 Dutch, 3 Norwegian)	—	495
Seaplane Carrier . . .	—	1	—	—	1
Midget Submarines . . .	—	2	—	—	2
A/S Groups . . .	—	—	58	—	58
TOTAL:					1213

* 3 Cruisers became depot ships after the assault phase.

designed to disrupt the enemy's land communications, disorganise his early warning system and destroy the capacity of the Luftwaffe to retaliate against our invasion forces. All our normal measures to deal with U-boats and light surface forces were to be intensified as the day of the assault approached, a heavy programme of mine-laying off the enemy bases was to be carried out; and finally, a great force of bombarding ships was to neutralise or destroy the principal batteries on that stretch of Hitler's 'Atlantic Wall' before the first soldier landed in France. In fact these preliminary measures had started long before the plans were issued; and, as was told earlier, our aircraft and naval forces laid many mines off the French coast during the early months of 1944, while the Strike Wing of No. 18 Group had come south in April to strengthen the defence of the flanks of the

assault forces.¹ The minelaying preparations, conducted by the Home Naval Commands and Bomber Command, were to pass through six successive phases, starting about six weeks before the assault and

Table 23

Operation 'Neptune'—Allocation of Landing Ships and Craft to the Eastern and Western Task Force Commanders for the Assault Phase

	Western Naval Task Force (Rear-Admiral A. G. Kirk, U.S.N.)	Eastern Naval Task Force (Rear-Admiral Sir P. Vian)	Totals
I FOR THE ASSAULT (All ships and craft were manned by the British or Commonwealth Navies except where otherwise stated)			
Landing Ships Headquarters (L.S.H.)	2 (U.S.)	4	6
Landing Ships Infantry (L.S.I.) and Attack Transports (A.P.A.)	18 (10 U.S.)	37	55
Landing Ships Emergency Repair (L.S.E.) and Landing Ships Dock (L.S.D.)	3	3	6
Landing Craft Assault (L.C.A.)	94 (54 U.S.)	408	502
Landing Craft Vehicle (Personnel) (L.C.V.P.)	189 (U.S.)	—	189
Landing Craft Headquarters (L.C.H.) and Landing Craft Control (L.C.C.)	15 (U.S.)	11	26
Landing Craft Infantry (L.C.I.)	93 (U.S.)	155 (25 U.S.)	248
Landing Ships Tank (L.S.T.)	106 (U.S.)	130 (37 U.S.)	236
Landing Craft Tank (L.C.T.)	350 (Approx. 230 U.S.)	487	837
Landing Craft Flak (L.C.F.)	11 (U.S.)	18	29
Landing Craft Gun (L.C.G.)	9 (U.S.)	16	25
Landing Craft Support (L.C.S.)	38 (36 U.S.)	83	121
Landing Craft Tank (Rocket) (L.C.T. (R))	14	22	36
Landing Craft Personnel (Smoke and Survey) (L.C.P.)	54 (48 U.S.)	100	154
II FOR FERRY SERVICES (Vessels and craft not divided according to nationality)			
Landing Barges Flak (L.B.F.)	—	15	15
Landing Barges Vehicle (L.B.V.)	108	120	228
Landing Barges Emergency Repairs (L.B.E.) and similar types	67	114	181
Fuelling Trawlers	14	21	35
'Rhino' Ferries	31	41	72
Landing Craft Vehicle Personnel (L.C.V.P.)	260	396	656
Landing Craft Mechanised (L.C.M.)	224	240	464
Landing Craft Emergency Repair (L.C.E.)	—	5	5
	<hr/> 1,700	<hr/> 2,426	<hr/> 4,126

¹ See Part I of this volume, p. 286.

thereafter gradually introducing new types of mine which, so we hoped, would produce particular difficulties for the German mine-sweeping service.

The plans to protect the expedition against the U-boats took the form of an extension and intensification of the measures already in operation in the Battle of the Atlantic; but because the chief requirement plainly was to prevent U-boats reaching the invasion routes from the Bay of Biscay bases, great emphasis was placed on patrolling the south-western approaches to the Channel with surface ships and aircraft. Four support groups were allocated to the Commander-in-Chief, Plymouth, for this purpose; while six more groups and three escort carriers from the Western Approaches Command were to provide more distant cover to the west of Land's End.

The special organisation produced by Coastal Command was equally comprehensive, and on the 18th of April Air Chief Marshal Sir Sholto Douglas issued his broad intentions to all the squadrons in his command. The waters between southern Ireland and Land's End, and between that promontory and the Brest peninsula, were to be patrolled at such an intensity that every position in the whole area was to be under observation at least once in every half hour, by night as well as by day. The C.-in-C's purpose was to destroy any U-boats caught on the surface, and to force the enemies to stay submerged for such long periods that their batteries would be exhausted before they reached the invasion routes.¹ The air patrols could all be shifted laterally to the east or west as enemy movements might necessitate, and No. 19 Group was reinforced to a total strength of twenty-one squadrons, additional to those needed to protect our coastal convoys and attack the enemy's merchant shipping. On the eastern flank of the invasion routes the chief threat came from the enemy's light surface ships, and No. 16 Group was therefore given seven anti-shipping squadrons to deal with them. If, however, U-boats endeavoured to pass down-Channel from the east, four of No. 19 Group's heavy squadrons were to be transferred to No. 16 Group. In spite of the great concentration of aircraft in the south, sufficient were left to Nos. 15 and 18 Groups to continue their watch on the transit routes from Norway round the north of Scotland.² In fact it was these northern patrols which struck the first blows against the U-boats which Dönitz had ordered to concentrate in the Bay of Biscay in anticipation of a cross-Channel invasion being launched; for, as was told in our previous volume³, between the 16th of May, when the U-boats' movement from Norway to the Bay of Biscay

¹ See Map 22.

² Vol. II, Map 37, shows the boundaries of Coastal Command's four groups which were responsible for British home waters.

³ See Part I of this volume, pp. 261-262.

started, and the 3rd of June they sank seven of the twenty-two enemies sighted. This was a splendid start to the campaign, and a fair reward to the squadrons which had patrolled those remote and unfriendly waters for so many arduous and exacting months. The U-boats which successfully reached the Biscay ports can have been under no illusions regarding the hazards which would face them when they put to sea to attack the invasion convoys.

The assembly of all the great armada of warships, merchantmen, and ancillary vessels of many types, and the arrangements for loading them demanded very careful organisation in all the ports of southern Britain; for the vessels had to be allocated in accordance with the capacity of each port and the purposes for which the ships had been detailed. Thus the five assault forces, which needed to make the shortest possible crossings, were to load on the south coast at ports between Plymouth and Newhaven, the two follow-up forces were to assemble in rather more distant ports, and the first of the ships carrying troops for the build-up were to load in the Thames and Bristol Channel.¹ The naval covering forces were ordered to Plymouth, Dartmouth, Portsmouth and Dover, and the heavy bombardment forces mostly to Belfast and the Clyde. All the escort and mine-sweeping forces were to concentrate with the convoys which they were to look after. The local naval authorities at each port were responsible for berthing the ships as they arrived; but because the ports could not cope with such heavy traffic, 130 additional 'hards' were constructed to enable tanks and vehicles to embark straight off beaches. The two Task Force Commanders accepted responsibility for the actual embarkation of the very carefully planned loads which every ship was to carry, and for sending them on their way when the executive order to carry out the operation was given. Finally every ship was to start with full fuel tanks.

As D-Day approached the main concentration of shipping in the Solent and Spithead increased until those great stretches of sheltered water had scarcely a berth empty. Every ship ordered to assemble there was shown on a large berthing plan, which bore a remarkable resemblance to the setting for one of the many Royal Reviews held in those historic waters. The process of collecting and preparing all the ships, and of despatching them to their ports of final departure involved a heavy increase in coastal traffic. These convoys were escorted and covered by sea and air forces in the normal manner; and throughout the whole, long preliminaries the Royal Air Force continued to give 'the maximum protection against surface, air and U-boat attacks'. The loading and assembly plan is summarised in Table 24 (pages 22-23).

¹ See Map 23.

THE ORGANISATION FOR LOADING

Table 24. Operation 'Neptune'—Organisation, Loading and Assembly of Assault Forces

Assault Force or Group	Landing Sector	Headquarters Ship	Naval Commander	Troops Embarked	Loading Ports	Assembly Ports	Remarks		
'Sword' S1 S2 S3	Ouisstreham	<i>Largs</i> <i>Locust</i> <i>Dacres</i> <i>Goathland</i>	I. EASTERN NAVAL TASK FORCE				—	Reserve Group Intermediate Group Assault Group	
			Rear-Admiral A. G. Talbot		3rd (British) Division:				
			Captain W. R. C. Leggatt	9th Inf. Brigade Group	Portsmouth	Portsmouth Spithead Newhaven Shoreham			
Captain R. Gotto	185th Inf. Brigade Group	Newhaven							
			Captain E. W. Bush	8th Inf. Brigade Group	Shoreham				
'Juno'	Courseulles	<i>Hilary</i> <i>Lawford</i> <i>Waverley</i> <i>Royal Ulsterman</i>	3rd (Canadian) Division and No. 48 R.M. Commando:				—	Assault Group Assault Group Reserve Group	
			Commodore G. N. Oliver		7th (Can.) Inf. Brigade Group				
			Captain A. F. Pugsley		8th (Can.) Inf. Brigade Group				Southampton Portsmouth
			Captain R. J. O. Otway-Ruthven		9th (Can.) Inf. Brigade Group				
J1			Commodore C. E. Douglas-Pennant	50th (British) Division and No. 47 R.M. Commando:	Southampton Solent	Assault Group Assault Group Reserve Group			
J2			Captain J. W. Farquhar	231st Inf. Brigade Group					
J3			Captain F. A. Ballance	60th Inf. Brigade Group					
'Gold'	Asnelles	<i>Bulolo</i> <i>Nith</i> <i>Kingsmill</i> <i>Albrighton</i>	56th and 151st Inf. Brigade Groups				Southampton Solent	Assault Group Assault Group Reserve Group	
			Commodore C. E. Douglas-Pennant		50th (British) Division and No. 47 R.M. Commando:				
			Captain G. V. M. Dolphin		60th Inf. Brigade Group				

THE ORGANISATION FOR LOADING

		II. WESTERN NAVAL TASK FORCE					
'Omaha' O1 O2 O3 O4	St. Laurent	U.S.S. <i>Ancon</i> <i>Samuel Chase</i> (U.S.) <i>Charles Carroll</i> (U.S.) <i>Anne Arundel</i> (U.S.) <i>Prince Charles</i>	Rear-Admiral J. L. Hall, U.S.N. Captain E. H. Fritzsche, U.S.C.G. Captain W. O. Bailey, U.S.N. Captain L. B. Schulten, U.S.N. Commander S. H. Dennis	1st (U.S.) Division: 116th R.C.T. 16th, 115th R.C.Ts 18th R.C.T. 2nd and 5th Ranger Bns.	{ Portland Weymouth Poole }	Assault Group { 16th R.C.T. Aslt. Gp. 115th Reserve Group Reserve Group } { 2nd Bn. Assault 5th Bn. Reserve }	
	'Utah' Green Red	Varreville	U.S.S. <i>Bayfield</i> L.C.H. 530 L.C.I.(L) 321 L.C.H. 10 L.C.I.(L) 217	Rear-Admiral D. P. Moon, U.S.N. Commander A. L. Warburton, U.S.N. Commander J. A. Bresnan, U.S.C.G. Commander E. W. Wilson, U.S.N.R. Lieut.-Cmdr. R. G. Newbegin, U.S.N.R.	4th (U.S.) Division: 8th, 12th and 22nd R.C.Ts	{ Torbay Brixham Dartmouth Salcombe }	8th R.C.T. Assault Group 12th and 22nd R.C.Ts Reserve Group
		British Follow-up	Headquarters ashore at Southwold	Rear-Admiral W. E. Parry	III. FOLLOW-UP FORCES 7th (British) Armoured Division: 22nd Armoured and 153rd Inf. Brigade Groups	{ Torquay Dartmouth Brixham Plymouth East }	5 Groups of L.S.Ts and L.C.Is
		U.S. Follow-up	U.S.S. <i>Maloy</i>	Commodore C. D. Edgar, U.S.N.	29th (U.S.) Division: 26th, 175th and 359th R.C.Ts	Tilbury Felixstowe Falmouth Plymouth West	Southend Sheerness Harwich Falmouth Fowey Plymouth

NOTE: R.C.T. = Regimental Combat Team (U.S.A.) R.M. Commando = Royal Marine Commando.

The safety of all the invasion convoys was to be secured not only by the escorts which accompanied them, but by light forces patrolling on their flanks, and by more distant forces from the Home Fleet, Western Approaches and Plymouth commands.¹ For close cover inside the Channel two dozen destroyers and frigates and about twenty-two flotillas of British and American coastal craft (motor torpedo-boats, motor and steam gunboats, and motor launches) were allocated to the southern naval commands. Finally the Admiralty retained control of certain north Atlantic convoy support groups, which were to be transferred to the south if U-boats entered the Channel.

Fighter protection for the 'Neptune' convoys, and for the beaches after the assault troops had landed, was to be provided on a massive scale. No less than 171 squadrons of Allied fighters—nearly 2,000 aircraft—were allotted to various duties connected with the invasion. The plan provided for five squadrons to patrol the invasion routes continuously, and for another ten to keep the sky over the beaches clear.² Control of these aircraft was to be exercised firstly from ground stations in Britain, and then from L.S.Ts which had been specially equipped and converted to serve as fighter direction tenders. Two were to be stationed in the British and American assault areas, while a third operated further to seaward off the northern entrance to the swept channels. The function of these ships was to extend the Royal Air Force's well-tried system of control far out to sea. After the assault had succeeded ground stations would be established in France for the same purpose.

Admiral Ramsay's order to 'carry out operation "Neptune"' would set the whole intricate organisation into movement. The assault forces, screened by the escort vessels allocated to each group, would then sail from their points of assembly in accordance with the special routes allotted to them; and the various naval forces would proceed on the orders of the Commanders-in-Chief, Home Commands, to carry out their particular rôles such as bombardment or minesweeping. To assist accurate navigation the approach routes to the swept channels were to be marked either by motor launches or by sonic beacons specially laid for the purpose.³ Meanwhile two midget submarines (X.20 and X.23) from Portsmouth, the tiny vanguard of the great invasion fleet, were to cross to the other side to mark the narrow beaches where Forces 'Juno' and 'Sword' were to land. Then, during the night before the main assault, the troops of the 6th (British) Airborne Division were to drop to the east of Caen

¹ See Map 23, for the general disposition of the covering forces.

² See Map 22.

³ See Map 23.

52°

5°

4°

3°

Milford Haven

Swansea

Cardiff

Bristol

51°

ANTI-SUBMARINE PATROLS

COASTAL CONVOY COVER PATROLS

Portland

Plymouth

Dartmouth

Falmouth

50°

ANTI-SUBMARINE PATROLS

ANTI-SUBMARINE PATROLS

Guernsey

49°

Jersey

ANTI-SUBMARINE PATROLS

ANTI-SUBMARINE PATROLS

ANTI-SHIPPING SWEEPS

Ushant

Brest

48°N

ANTI-SUBMARINE PATROLS

5°

4°

3°

6

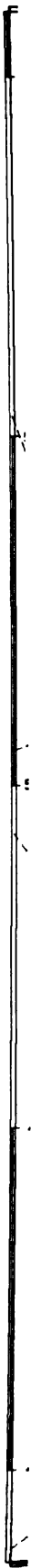
• brass

and

100

1





52°

51°

50°

49°

48°N

5°

4°

3°

6°

5°

4°

3°

One Anti-Submarine Support Group (Reserve)

BRISTOL CHANNEL

FOLLOW-UP FORCE 'B'

ASSAULT FORCE 'U'

ASSAULT FORCE 'O'

Three Escort Carriers & Six Anti-Submarine Escort Groups about 130 miles to westward

Lands End
Scilly Is.
Wolf Rock

Two Anti-Submarine Support Groups

One Anti-Submarine Support Group (Reserve)

Four Destroyers (U.S.)

Six Groups of Coastal Forces

Two Frigate

Four Destroyers (Hurd Deep Patrol)

Four Destroyers (Western Patrol)

Alderney
Ca del Hag

Guernsey

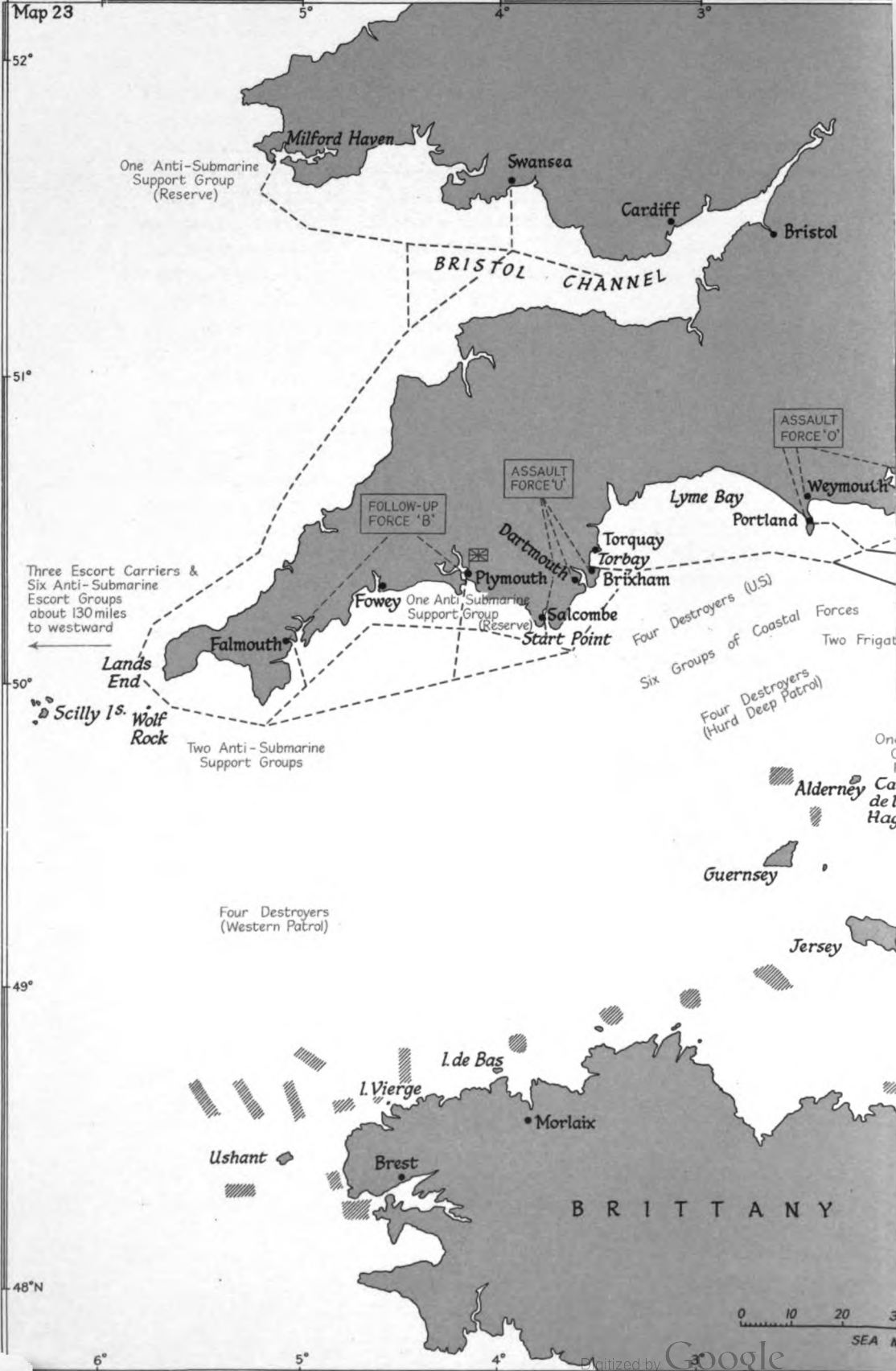
Jersey

Ushant
I. Vierge
I. de Bas
Brest

Morlaix

BRITTANY

0 10 20 30
SEA MILES



and astride the crossings of the River Orne to secure the open flank of the main assault, while American paratroops from about 1,000 aircraft and gliders were dropped at the foot of the Cotentin peninsula to expedite its capture and hinder the enemy's reinforcements. On the evening of D-Day 250 gliders were to be towed across with the first reinforcements for the British paratroops, and further similar missions, though on a smaller scale, were planned for the succeeding nights. The routes along which the slow and vulnerable transport aircraft were to fly were not easily settled; for the Navy's need to guard against surprise attack by low-flying aircraft clashed with the Air Force's request for a 'corridor' within which anti-aircraft fire should be prohibited. The heavy losses suffered by the airborne troops in the invasion of Sicily had not been forgotten.¹ In the end the routes for the British troop-carrying aircraft were shifted further east to avoid flying directly over the assault beaches, and Admiral Ramsay then accepted that naval gunfire should be prohibited in the 'corridor'. To reduce the risk of ships firing on friendly aircraft, which had marred previous combined assaults, the importance of training in aircraft recognition was impressed on all warship crews, and specially trained officers of the Royal Observer Corps were embarked in merchantmen.

We will now consider in greater detail the design and construction of the artificial harbours (called 'Mulberries') which, in Admiral Ramsay's words, formed 'an essential part of the plan' because 'the expeditionary force can have no real security until they are working'. Though many government departments and hundreds of individuals, civilians as well as service men, contributed something to this highly original idea, the main responsibility lay with the Admiralty and War Office. The amount of construction and engineering work involved was enormous and, coming after more than four years of war, strained British industrial capacity to the limit. Many shipbuilding yards and dockyards in the country, and hundreds of engineering works—many of them far inland—were involved in greater or less degree; and, not for the first time in their history, the British people had cause for thankfulness that nature had endowed their country with an unusually large number of fine harbours on a comparatively short stretch of coastline. Without those harbours the project could never have been carried out.

The outline of the scheme for the artificial harbours had been presented and ratified at the Quebec conference in August 1943, even though at that time the final shape which they would take was far from clear. Numerous novel ideas had been put forward from many sources, notably from Admiral Mountbatten's staff at

¹ See Part I of this volume, pp. 135-136.

Combined Operations Headquarters, and many experiments were in progress to decide which suggestions were the best.

One important issue which arose in the early stages was the division of responsibility between the Admiralty and the War Office. It was by tradition the Navy's job to take over, restore and work all captured ports; but the War Office pointed out that the artificial harbours could hardly be described as captured ports. Towards the end of 1943 the question was referred to the Chiefs of Staff, who directed General Morgan to settle it. The final decision upheld the Admiralty's claim to responsibility for the design and layout of the harbours, and for the maintenance of the breakwaters; but the War Office remained responsible for construction of the hollow concrete caissons (called 'Phoenix' units) which were to form part of the breakwaters, and for the components of the floating piers and pier-heads (collectively called 'Whale' units).¹

Early in January 1944 Rear-Admiral W. G. Tennant was appointed to Admiral Ramsay's staff to take charge of the whole naval side of the assembly and towage across-Channel of the components of the artificial harbours, and for the actual creation of the harbours on the other side. He was also made responsible for the arrangements to supply the large quantities of petrol needed by the armies, regarding which more will be said later. He was in due course to command the most oddly assorted fleet which can ever have fallen to a flag officer.

As the planning of the artificial harbours progressed doubts were expressed in naval circles whether the 'Phoenix' caissons would withstand even a moderate gale; for that service had behind it centuries of experience of the vagaries of the Channel weather and the way in which far more solid and permanent structures could be broken up or swept away by the pounding of the short, steep seas often encountered. Admiral Tennant therefore suggested that, in addition to the breakwaters already planned, blockships should be sunk to provide shelters. Admiral Ramsay favoured the idea, and in January 1944 the plans were amended to include the provision of five such shelters (called 'Gooseberries'), which were to be completed by the fourth day after the assault. Two of them were to form part of the 'Mulberry' breakwaters, while the other three were to be placed closer inshore, at Varreville in the American sector, and at Cour-suelles and Ouistreham in the British sector², to provide shelter for small craft. Fifty-five elderly merchantmen (twenty-three of them American) and four obsolete warships, collectively known as 'Corn-

¹ As 'Phoenix' units were completed they were submerged, to avoid taking up valuable berthing space in harbours. In May 1944 the Navy had to take over the refloating of them, because the Army lacked the salvage equipment needed to pump them out.

² See Map 24.

cobs', were finally prepared for these purposes. Most of them assembled in Scottish ports a month before D-Day, and then steamed in convoy to Poole, proceeding west-about round Scotland, before starting out on their final journey of self-immolation on the day of the assault.¹ Having arrived at their destinations they were to be manoeuvred into position and sunk by teams of officers appropriately called 'Planters', and the entire 'Gooseberry' scheme was to be completed within three days of the assault.

To return to the other components of the artificial harbours, the 'Phoenix' units for the breakwaters were 200 feet long, and displaced between 2,000 and 6,000 tons. They were to be placed end to end, on the two-and-a-half fathom line, about a mile offshore from St. Laurent and Arromanches in the American and British sectors respectively. At the ends of the breakwaters other 'Phoenix' units were to be placed as extensions to the main arms, reaching further inshore and enclosing the area of sheltered water more completely.² About half a mile to seaward of the breakwaters, floating steel structures about 200 feet long and of cruciform section (called 'Bombardons') were to be moored in line so as to provide a sheltered deep-water anchorage. The design of these supplementary breakwaters had been arrived at after experiments with a number of projects whose purpose it was to interrupt the surging motion of waves. There was a good deal of justifiable scepticism in Army circles regarding their effectiveness; and in fact, by breaking adrift and sweeping inshore on the crest of the waves whose motion they had been designed to interrupt, they proved a source of considerable danger later. The design and placing of the 'Bombardons' was an Admiralty responsibility.

Centrally placed inside the main breakwaters of the 'Mulberries' was to be the main stores pier, connected to the shore by two floating roadways each half a mile long. Here coasters would discharge straight into trucks. To the west was to be built a much shorter pier for use by the barges into which large ships were to unload their cargoes. To the east was to be the L.S.T. pier, whose main use was for landing vehicles which had not been water-proofed. All the pier-heads were designed, in Mr Churchill's famous words, 'to move up and down with the tide'. The lay-out of the piers and pier-heads was a military responsibility; and the unloading capacity of the artificial harbours, which we aimed to complete within three weeks, was to be 7,000 tons daily through each of them.

As with the breakwater components, the final design of piers and pier-heads was only arrived at after prolonged experiments with

¹ The old French battleship *Courbet* was the only blockship which had to be towed across Channel.

² See Map 27.

various alternative proposals. That finally accepted was produced by the War Office, and consisted of flexible steel bridges mounted on concrete or steel pontoons, with pier-heads mounted on adjustable legs (or 'spuds'). In the middle of 1943 two miles of this type of pier were ordered, and after trials had been satisfactorily completed, the order was given to build ten more miles and fifteen pier-heads.¹ Though there was for a time some anxiety whether enough 'Whale' equipment would be ready by D-Day, in fact the minimum requirements were met.

The artificial harbours in their final form were to protect an area of shallow water (two-and-a-half fathoms or less) for landing craft, to provide a deeper shelter (up to five-and-a-half fathoms) inside the breakwaters, and a still deeper anchorage for big ships further to seaward between the breakwaters and the Bombardons. These last were to be moored on the ten-fathom line. In the British 'Mulberry' off Arromanches berthing within the breakwaters was provided for seven ships of deep draught, twenty coasters, 400 tugs and auxiliary vessels and 1,000 small craft. Additional accommodation for big ships existed between the breakwaters and the Bombardons.

The towage of all the unwieldy units comprising breakwaters, piers and pier-heads firstly from the construction sites to the points of assembly on the south coast, and then across-Channel, was an undertaking of unusual complexity.² In all the 'Mulberry' project comprised 400 units, totalling one-and-a-half million tons. Ten thousand men were involved in the work of towing and placing them, and 160 tugs were needed to take across about thirty-five heavy tows daily. The shortage of tugs was not the least of the difficulties which beset the planners. Under Rear-Admiral Tennant and his Chief of Staff, Captain H. Hickling, the responsibility for the construction of the American 'Mulberry' and of their two craft shelters rested with Captain A. D. Clark, U.S.N.; while Captain C. H. Petrie, and later Captain Hickling, carried a similar responsibility for the artificial harbour and shelters in the British assault area.

It will be convenient next to describe briefly the arrangements for the supply of the Army's petrol. A special naval force 'Pluto' was formed under Captain J. F. Hutchings to carry out this task in conjunction with the War Office and the Ministry of Fuel and Power, and a special depot was opened at Southampton for the assembly of the vessels and devices needed. There were two main projects, each of which had several variations. The first was to establish an im-

¹ Later increased to twenty-three pier-heads.

² 'Phoenix' breakwater units were to assemble in the Thames, off Dungeness, and off Selsey where a special 'park' was established. 'Whale' pier-head units were to assemble in the Solent, off Dungeness and in the Selsey 'park'. 'Bombardons' were all to assemble at Portland.

provided fuel depot at Port en Bessin, near the junction of the British and American assault areas, to serve both armies. Tankers were to anchor offshore, and pick up connections attached to flexible steel pipes, which had either been run out from the shore, or had been towed across-Channel and then sunk on the other side. Four pipe-lines of these types were to be completed within eighteen days, and large tankers would then be able to discharge 600 tons per hour. This method of discharge was similar to that ordinarily used by tankers in many commercial ports; but the second method of meeting the Army's needs was more original. It consisted of laying 'pipe-lines under the ocean' (whence derived the code-name 'Pluto') between Sandown in the Isle of Wight and the small port of Querqueville near Cherbourg. These pipe-lines were of two types. The first was similar to a trans-oceanic telegraph cable, except that it was hollow, and was to be laid in the ordinary manner by cable ships; while the second consisted of flexible steel piping coiled round drums fifty feet in diameter, from which it unwound as the drums were towed across Channel. The drums could carry seventy miles of pipe.¹ It was intended that the first of ten pipes of both types should be ready within twenty days of the assault, and the last within seventy-five days. The total capacity of these pipes was to be about 2,500 tons per day; but in fact this scheme never fulfilled its purpose during the assault phase. Other pipe-lines of the same type, which were subsequently laid across narrower parts of the Channel, helped however to keep the advancing armies supplied.²

To return to the 'Neptune' plan, the minesweeping organisation was, perhaps, the most intricate of all the many measures taken to ensure the safety of the invasion convoys. All shipping was to use the normal swept channels during the preliminary movements along the British coast, but once the convoys turned towards France they were to proceed by routes which had been specially cleared and marked. Initially four channels were established to lead into a swept area five miles in radius, whose centre was about eight miles south-east of St Catherine's Head in the Isle of Wight.³ From that circle eight channels (collectively known as 'the Spout') led due south towards the mine barrier which we knew that the Germans had laid south of the fiftieth parallel. These channels, three of which were reserved for 'Mulberry' tows, would not be swept unless we gained evidence of minelaying in them. Next ten channels through the mine barrier, each four to twelve hundred yards wide, were to be cleared and marked with lighted buoys by the fleet minesweepers steaming ahead

¹ The drums were called 'Conundrums'. Their unwieldiness and the difficulty experienced in towing and handling them fully justified the pun.

² See pp. 137-138.

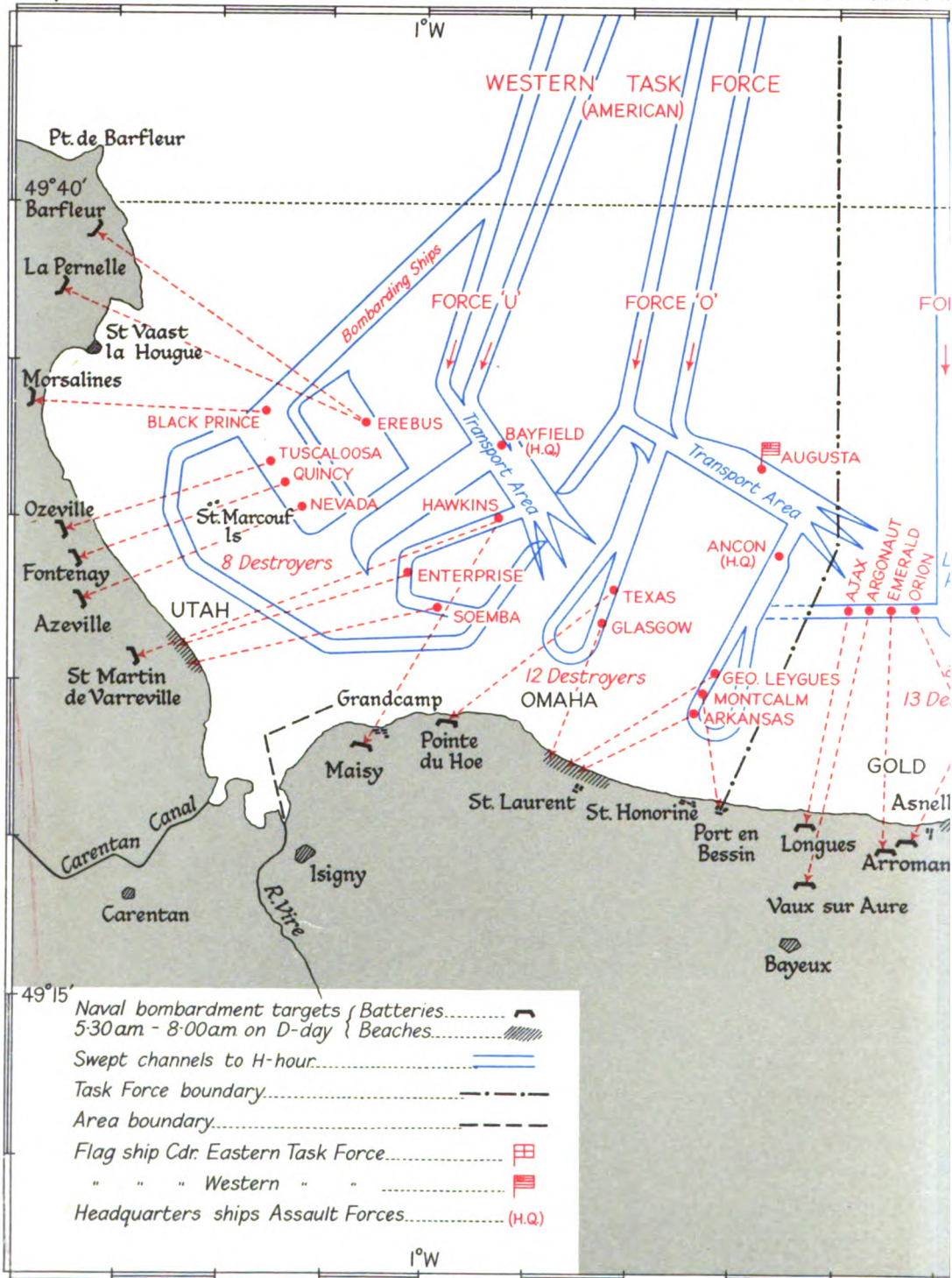
³ See Map 23.

of the invasion convoys. Radiating out from the ends of these approach channels towards the assault beaches were a number of lanes for the bombarding warships.¹ Finally the waters where the assault ships were to anchor had to be swept, and arrangements were also made for the rapid clearance of all types of mine which the enemy might lay after the invasion had been launched. No less than 287 vessels of various types were allocated 'to give our ships the maximum of freedom with the minimum of loss', and the whole programme demanded a high degree of good seamanship and accurate navigation on the part of their crews.

The orders provided for no less than seventy-six separate 'serials' in the minesweeping programme, and as each one was completed the Eastern and Western Task Force Commanders were to order the next one to be taken in hand. The first serials provided for clearing, marking and lighting the ten approach channels. That work was to be continued even if the sweepers were heavily engaged by the enemy; for the assault forces 'relied for their safe arrival' on the clearance of the waters through which they had to pass. Lastly ten flotillas of sweepers were placed at the disposal of the Task Force Commanders to deal with any mines which might be laid within their assault areas. Two British officers (Captain R. B. Jennings and Commander J. G. B. Temple) were placed in charge of this important part of the plan, under Admiral Vian and Admiral Kirk, U.S.N., respectively. After the assault the approach channels were to be progressively widened, to produce a broad passage leading into each Task Force sector. At a later stage the buoys used initially to mark swept waters were to be replaced by light buoys, the laying of which was shared between naval and Trinity House ships.

The object of the naval bombardment plan was 'to assist in ensuring the safe and timely arrival of our forces by the engagement of hostile coastal defences, and to support the assault and subsequent operations ashore'. The programme was carefully dovetailed with the air bombardment by the heavy and medium bombers. These latter were to strike against certain selected enemy batteries well before D-Day. Then the heavy night bombers were to attack ten of the principal coast defences during the night before the invasion, while medium bombers dealt with six other batteries shortly after daylight on D-Day. Lastly, as the air bombardment rose in ever increasing crescendo, the heavy and medium bombers would concentrate on the beach defences during the last forty-five minutes before the assault, dropping about 4,200 tons of bombs; and as soon as the bombers had completed their part, the support landing craft were to move close inshore, engage the beach defences, and launch their salvos of rockets

¹ See Map 24.



just before the assault craft touched down. In none of our previous combined operations had such carefully co-ordinated steps been taken to shatter the defences before ever a soldier stepped ashore; but in no previous assault had we been up against such powerful fortifications as Hitler's 'Atlantic Wall'.

The warships allocated to bombardment duties, which had assembled in the Clyde and at Belfast, were to reach their initial positions off the French coast before daylight on D-Day. They were divided into five groups, each of which was responsible for giving fire support to one of the assault forces. Their initial targets were to be the twenty-three German batteries which overlooked the beaches on which our troops were to land, or which could fire on the offshore transport anchorages; and each major warship was given one of them as her priority target.¹ The German batteries were of several different types, the most formidable of which were those specially designed for coast defence purposes. They consisted generally of four guns (4·9-inch to 6·1-inch) sited to fire to seaward, and mounted in strong gunhouses with seven feet of reinforced concrete on the roof and sides. Magazines and living quarters for the guns' crews were equally well protected, and the battery sites were themselves heavily defended by minefields, wire and entrenchments. Secondly there were field guns or howitzers of similar calibres to the coast defence batteries, but on wheeled mountings. These were mounted in reinforced concrete casemates of great thickness, and could fire to seaward or on to the beaches. There were six coast defence batteries and two of guns in casemates facing the British sector. Lastly the Germans had installed many guns in open, unprotected positions from which they could enfilade the beaches. In June 1944 the enemy had not, however, completed all the concrete gun protection which he had planned. From the Allied point of view this was fortunate; for whereas a direct hit with a heavy shell was necessary to put a gun in a seven-foot thick gunhouse or casemate out of action, blast or splinters could neutralise or damage the unprotected weapons. The counter-battery fire by the Allied bombarding ships was to continue until the enemy guns had definitely been put out of action, or had been captured. As our troops advanced inland the larger ships would continue to support them, whenever a call for fire was received, right to the limit of their weapons' ranges. The organisation and composition of the bombardment forces are shown in Table 25 (page 32).

In the 'Neptune' plan great attention was given to the problem of establishing an efficient naval organisation on the beaches as quickly as possible. In all assaults from the sea against a heavily defended

¹ See Map 24.

Table 25. Operation 'Neptune'—Bombardment Forces

(All ships British unless otherwise stated)

Bombardment Force	To Support	Flag or Senior Officer	Composition			
			Battle-ships	Monitors	Cruisers	Destroyers
D	'Sword' Assault	Rear-Admiral W. R. Patterson	2	1	5 (1 Polish)	13 (1 Polish, 2 Norwegian)
E	'Juno' Assault	Rear-Admiral F. H. G. Dalrymple-Hamilton	—	—	2	11 (2 Canadian, 1 French, 1 Norwegian)
K	'Gold' Assault	Captain E. W. L. Longley-Cook	—	—	5 (1 Dutch)	13 (1 Polish)
C	'Omaha' Assault	Rear-Admiral C. F. Bryant, U.S.N.	2 (U.S.)	—	3 (2 French)	12 (9 U.S.)
A	'Utah' Assault	Rear-Admiral M. L. Deyo, U.S.N.	1 (U.S.)	1	6 (2 U.S., 1 Dutch)	8 (U.S.)
Reserve	As required	Under ANCXF's Control	2	—	3 (1 U.S.)	17 (U.S.)

NOTE: Destroyers which acted as escorts in the approach phase were allocated to support duties on becoming available.

coastline some confusion is likely to arise during the first few hours, especially if the weather is at all unfavourable; and the experience gained in North Africa, in Sicily, and at Salerno had emphasised the need for strong 'Naval Beach Parties' to land with the assault troops. Their functions were to organise the heavy boat traffic, to establish communications between the beaches and the headquarters ships lying offshore, and to see that the Army's multifarious needs were met with the least possible delay. In 'Neptune' a Naval Officer in Charge was therefore appointed to each British assault force; and under them served the Principal and Assistant Beachmasters, and also strong parties of men styled Naval Beach Commandos. These latter were the spearhead of the full organisation, which would take perhaps four hours to establish itself on shore. In the American task force a different system was used, and a completely new organisation took over responsibility from the special beach battalions, who had gone ashore with the assault troops, some days after the landings. Each system had certain advantages, but the British one avoided the inevitable difficulties in the transition from the initial to the final organisation.

The effectiveness of the bombarding ships' gunfire depended greatly on efficient air and ground observation of the fall of shot, and

arrangements to provide this were worked out in great detail. During preliminary practices the observers trained with the ships to which they were attached. For air observation 104 specially trained Mustangs and Spitfires were to work in pairs—one to observe and one to escort the observing plane—while thirty-nine 'Forward Observers Bombardment' (F.O.Bs) landed with the British assault troops and set up positions ashore, to communicate fall of shot reports or signal the Army's needs out to the waiting warships. In the American sector Shore Fire Control Parties fulfilled a similar function. A unique feature of the bombardment plan was that British and American ground and air observers were all trained to work with either nation's warships. We expected that ammunition expenditure would be very heavy, and therefore made arrangements for the rapid replenishment of ships' magazines in their home ports or, in the case of the smaller vessels, from ammunition carriers in the assault forces.

The Navy's responsibilities did not, of course, end with the successful disembarkation of the assault troops. 'It is' said Admiral Ramsay 'on the rapid follow-up of reserves, and on the swift unloading of stores that the attack relies for the impetus which alone can sustain it'. Thus the quick return of all the ships and craft which had taken part in the initial assaults was as important as the prompt arrival of the two follow-up forces (Forces L and B from the Thames and Plymouth). These together consisted of eight groups of L.S.Ts, L.C.Is, L.C.Ts, stores coasters, pontoon causeways, and large numbers of barges of various types, including the invaluable 'Rhino ferries', which were built up from sections of pontoons and fitted with outboard motors.¹ The greater part of Forces L and B was to discharge on the second tide of D-Day, but some ships would have to await the next tide.

After the follow-up forces would come the first convoys of the build-up, consisting of Personnel Ships, Mechanised Transport (M.T.) ships, and coasters. At the same time the L.S.Ts, L.C.Ts and L.C.Is which had landed their first loads were to start running a ferry service to and from British ports to help accomplish the rapid build-up on which so much depended. A special 'Build-Up Control Organisation' (B.U.C.O.) had been set up in Combined Headquarters to control the re-loading of ships and craft, while 'Turn-Round Control Organisations' (T.U.R.C.Os) at Portsmouth, Plymouth and Chatham were to arrange for replenishment of fuel and stores, and to despatch the ships on their next outward journeys with the least possible delay. Other specially formed bodies were the 'Combined Operations Repair Organisation' (C.O.R.E.P.), which

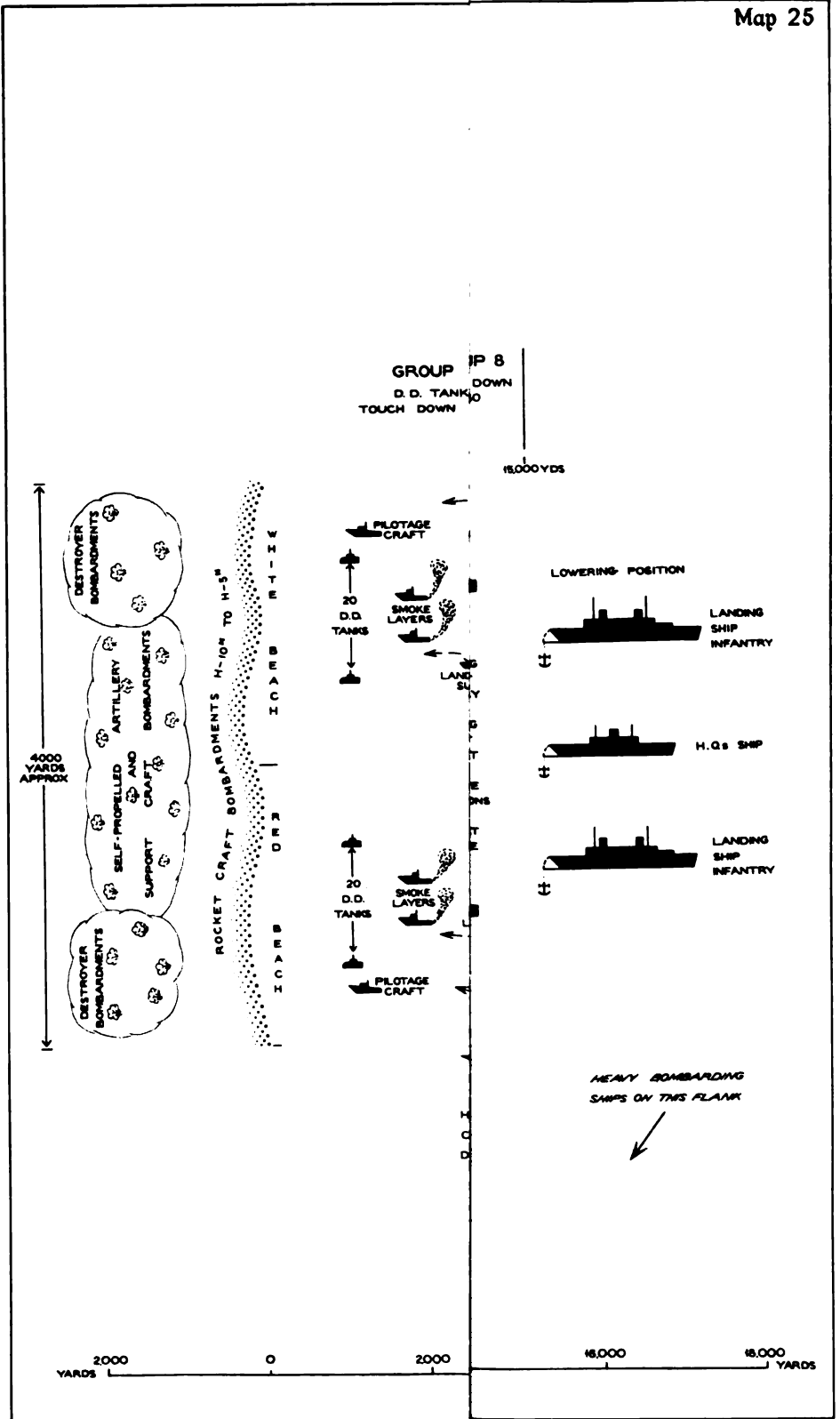
¹ See Part I of this volume, pp. 132, 173 and 305, regarding the use of pontoon causeways in combined operations.

had headquarters in the Admiralty and co-ordinated the distribution of all repair work needed by ships and craft, and the 'Combined Operations Tug Organisation' (C.O.T.U.G.), which dealt with all the towing problems of the operation.

The general scheme for the build-up was that ports to the east of Southampton should meet the British needs, while those to the west of that port, as far round as the Bristol Channel, served the American forces. The great commercial port of Southampton itself was shared by the two nations. Except for the craft employed on ferry services all re-loaded ships were at once to be formed into new convoys and sailed south-bound under escort, as arranged by the Home Port Commanders-in-Chief. Discharge of their cargoes on the other side was controlled by the Task Force Commanders, but Admiral Ramsay laid down the broad principles on which the beaching of coasters, L.S.Ts and L.C.Ts was to be carried out. Thus certain types of landing craft and the 'Rhino ferries' were to discharge the M.T. ships, while others served the personnel carriers. His object was to impress on everyone that 'speed in discharge is paramount'. Once vessels had been discharged they were to be formed into return convoys and sailed by the Task Force Commanders. We expected that by the third day after the assault the convoy programme would become stabilised, with a steady flow in both directions. By about the same date we hoped to start what Ramsay aptly described as 'sustained movement' by L.S.Ts, L.C.Ts and L.C.Is, all ferrying to and from the ports allocated to them, and re-loading at the same 'hards' under the control of the T.U.R.C.Os.

We have so far considered only the organisation and functions of the warships, merchantmen and landing craft needed to carry the invading armies and their equipment across Channel; but the plans for operation 'Neptune' provided also for an enormous number of 'ancillary ships' of every conceivable type, each of which contributed some important part to the whole. Thus special ships were needed to lay the moorings of the 'Mulberry' units, while buoy-laying vessels (mostly belonging to Trinity House) marked the channels; rescue tugs and salvage vessels were to bring in damaged ships, and wreck dispersal vessels were detailed to blow up sunken ships which obstructed the anchorages or fairways. Colliers, oilers and water-tankers carried the cargoes of their peace-time trades; telephone cable-laying vessels and despatch boats provided communications; and smoke-making trawlers could shroud the assault area against marauding aircraft. Provision was made for the A-A. defence of the anchorages by the specially armed 'Eagle ships', which we had first introduced in 1940¹, and by mounting guns on the 'Mulberry' break-

¹ See Vol. II, p. 148.



waters. It is pleasant to find among the 'Eagle ships' several, such as the ex-Solent passenger steamer *Whippingham*, which had taken part in the evacuation from Dunkirk in 1940¹, and were now to play their part in the re-entry of the Allied armies on to the continent. Rescue craft would be present to pick up aircrews who had come down in the sea, and a number of depot and repair ships were to provide floating workshops for the multitude of landing craft. The list of 'ancillary vessels' is, indeed, almost inexhaustible; for no branch of the maritime services was unrepresented, and Ramsay's orders established the initial movements and duties of each one of them. Indeed the vast variety and almost infinite capabilities of the ships and craft of the British maritime services could not be better demonstrated than the catalogue of ancillary vessels which played a part in 'Neptune'.

During the planning of the operation no matter was more often or more thoroughly debated than the choice of 'D-Day' and of 'H-Hour'. Accurate pilotage by the assault craft during the final approach, and accurate fire by the bombarding warships could only be achieved if the assault took place in daylight; and it was these naval needs which overruled the Army's preference for an assault in darkness. The correctness of the decision was placed beyond doubt when, in February, the enemy was seen to be placing obstructions below high water-mark off the Normandy coast. The clearance of narrow lanes to the beaches, which was all that we planned to do during the first tide after H-Hour, was only possible if the obstacles stood in less than two feet of water; and the special teams provided by the Royal Navy and Royal Engineers, who had to land with the assault waves, needed daylight to carry out this hazardous task. It was therefore decided to assault between three and four hours before high water, and about forty minutes after 'nautical twilight'.² Further complications arose from the fact that tidal conditions were not identical in all five assault areas, and that a moonlight night was desirable for the passage and approach of the many convoys and for the airborne landings. All the required conditions only coincided on three or four days in each month; and the weather conditions which, even though special reporting ships were sent out into the Atlantic, could never be forecast far ahead, were always bound to be an overriding consideration. Thus although the target date of the 31st of May was settled quite early, it was always known in the high command that, even if the weather proved propitious, a day during the first week of June would have to be chosen.³ On the 8th of May General Eisenhower

¹ See Vol. I, p. 225

² This begins when the sun is twelve degrees below the horizon.

³ See L. F. Ellis *Victory in the West*, Vol. I (in preparation) for a full discussion of the choice of D-Day and H-Hour.

provisionally fixed D-Day for Monday the 5th of June, and on the 23rd he informed all Commanders-in-Chief accordingly. This order set in motion the preliminary movements described earlier in this chapter.

Meanwhile the assault forces, which had for some months been carrying out individual and combined training, had begun to assemble in the south of England. In late April and early May a series of final exercises took place, with the troops embarked in the ships and craft allotted to them for the actual assault. We saw earlier how they were marred by the losses suffered in the German E-boat attack on one of the 'Utah' Force convoys off Portland in the early hours of the 28th of April.¹ The 'Gold' and 'Utah' forces, which had only been formed when the scale of the operation was expanded², remained however short of the desired amount of training. Indeed some units destined for the 'Utah' assault did not arrive in Britain until April. A more serious matter was that the end of the exercise programme found many craft in urgent need of repairs; but so well did the southern dockyards rise to the occasion that on D-Day 97·3 per cent of the British and 99·3 per cent of the American craft were ready. These figures were far higher than Admiral Ramsay had anticipated.

It may help the reader to understand what follows if we conclude this account of the preparations to invade Normandy with a brief description of the course of events when a naval assault force arrived on the other side. We will take Rear-Admiral Talbot's 'Sword' force, which was to carry the 3rd British Division and Commandos to attack near Ouistreham, as typical; and Map 25 (opposite p. 35) shows the approximate positions of the craft carrying one brigade of that force at H-Hour minus twenty minutes.

When the Headquarters Ship and the Landing Ships Infantry (L.S.Is) arrived at the lowering position about seven miles offshore they would anchor, and at once hoist out the Assault Landing Craft (L.C.As) in which the troops were embarked. These and also the various other types of landing craft in the assault convoys, would then deploy into their several groups, and prepare to move towards the beaches in the prescribed order and at the proper intervals. Because the speeds of which different craft were capable varied considerably, the groups could not form up in the order in which they were to arrive at the beaches. Instead the slowest craft had to move off first, the faster ones overtaking them on the way inshore.

¹ See Part I of this volume, pp. 293-294.

² See p. 9.

Two hours before H-Hour the first Tank Landing Craft (L.C.Ts), in which amphibious (DD) tanks were embarked would move off, accompanied by control vessels and light support craft. The amphibious tanks would be launched about 5,000–6,000 yards offshore, and arrive on the beaches five minutes before H-Hour. While they were moving in, the support landing craft would take station on their flanks and engage the beach defences. Three thousand yards behind the DD tanks came a very important group composed of various types of landing craft. Some were equipped with bomb-throwers which were intended to clear a way through enemy wire and land minefields¹; some carried the Royal Engineers' special tanks fitted with flails to detonate mines; others carried tanks fitted with bulldozers, or with weapons for breaking through concrete defences. This group's broad function was to create passages for the assault infantry clear of land mines and obstructions. Directly astern of it came the first landing craft with the assault brigade, which was to touch down at H-Hour. Next came L.C.Ts fitted with banks of rocket projectors, which were to be fired on to the beaches just before the infantry arrived.

About three thousand yards astern of the assault brigade were other L.C.Ts carrying the army's self-propelled artillery, which was embarked so as to enable the guns to fire on the beach defences during the passage inshore. Meanwhile destroyers had taken station on either flank of the assault force, and their guns would engage strong points and defences overlooking the beaches, while the more distant heavy bombarding ships were neutralising the enemy's principal coast defence batteries.

While the assault brigade was landing, the other two brigades in the division forming the assault force would be moving steadily inshore in nine more groups of L.C.Is and L.C.Ts, and in the first L.S.Ts. To achieve exactitude in timing and in pilotage by the 327 landing ships and craft comprising the assault force demanded a high degree of training, and the most accurate co-ordination of movements.

On the evening of the 25th of May, two days after General Eisenhower had informed the Commanders-in-Chief that D-Day would be the 5th of June, Admiral Ramsay ordered all holders of the naval orders to open them. Although the spacing of the different H-Hours to meet the varying tidal conditions in the five assault areas had long since been established, the fact that high water occurred about forty minutes later as each day passed meant that the actual times of

¹ The 'Hedgerow' bomb-thrower was actually not very successful.

the H-Hours could not be firmly decided until D-Day was fixed irrevocably; and when all Commanding Officers began to study the orders that condition had not yet been fulfilled.

The opening of the operation orders necessitated bringing into force the security measures which had already been planned. These were quite exceptionally severe. All outgoing mail from the ships was impounded, the use of telephones and cables was forbidden to their crews, and after the 28th of May (when the actual date of the assault was promulgated) they were all held 'sealed' in their ships. None the less a few breaches of security did occur. For example, charts of the Bay of Seine were prematurely issued to tugs, which then dispersed to various ports. They were promptly given a large-scale chart of Boulogne marked 'Immediate. Top Secret'. A few indiscreet signals, connecting D-Day with the 5th of June, were also made; but none of the mishaps had important repercussions, and the enemy remained quite unaware of where and when we intended to strike.¹

On the last day of the month the naval Commander-in-Chief issued a special order of the day to each officer and man serving in the Allied Naval Expeditionary Force. It merits preservation in full:

'It is to be our privilege to take part in the greatest amphibious operation in history—a necessary preliminary to the opening of the Western Front in Europe which in conjunction with the great Russian advance, will crush the fighting power of Germany.

This is the opportunity which we have long awaited and which must be seized and pursued with relentless determination: the hopes and prayers of the free world and of the enslaved peoples of Europe will be with us and we cannot fail them.

Our task in conjunction with the Merchant Navies of the United Nations, and supported by the Allied Air Forces, is to carry the Allied Expeditionary Force to the Continent, to establish it there in a secure bridgehead and to build it up and maintain it at a rate which will outmatch that of the enemy.

Let no one underestimate the magnitude of this task.

The Germans are desperate and will resist fiercely until we out-manoeuvre and out-fight them, which we can and will do. To every one of you will be given the opportunity to show by his determination and resource that dauntless spirit of resolution

¹ Towards the end of May the discovery that three of the *Daily Telegraph* crossword puzzles each contained a clue whose solution was a code-word used in operation 'Overlord' (e.g. 'Mulberry', 'Neptune') caused some concern. Investigation revealed that the puzzles had been independently composed by two schoolmasters, neither of whom had any knowledge of the pending operation nor of the code-words used in it. The selection of those puzzles from the considerable stock available in the newspaper office for publication so shortly before the assault was a pure coincidence. At the time, however, it looked as though a serious breach of security might have occurred.



Operation 'Neptune': the invasion of Normandy

The invasion fleet passing in review before H.M. King George VI in Spithead, 24th May, 1944. Taken from H.M.S. *Bulolo*.

A 'Neptune' invasion convoy leaves Spithead for France, 5th June, 1944.





The Invasion of Normandy, 6th June, 1944

Dawn of D-Day. Bombarding ships (H.M.Ss *Warspite* (left) and *Ramillies*) take up station off 'Sword' assault area, while towed gliders pass overhead.

**The scene ashore in the assault area on 7th June, 1944.
Note removed beach obstacles in foreground.**





The Invasion of Normandy, June 1944

Placing 'Phoenix' breakwater caissons in the British 'Mulberry'.

The great gale, 19th–22nd June, 1944. Damage to a 'Whale' pier.

Note landing craft driven ashore in left foreground.





The Invasion of Normandy, 1944

The British 'Mulberry' nearing completion, showing blockships and 'Phoenix' caissons in foreground and 'Whale' piers in background.



The bombardment of Cherbourg, 25th June, 1944. German shore batteries hit H.M.S. *Glasgow*.

which individually strengthens and inspires and which, collectively, is irresistible.

I count on every man to do his utmost to ensure the success of this great enterprise which is the climax of the European war.

Good luck to you all and Godspeed."

At noon on the 1st of June Admiral Ramsay assumed operational command of the 'Neptune' forces and general control over all movements in the Channel from his 'Battle Headquarters' at Southwick House near Portsmouth. Next evening the first of the bombarding forces sailed from the Clyde, and the two midget submarines mentioned earlier left Portsmouth. Thus was the vast and complicated organisation of the naval plan, over which so many weeks of toil had been expended, set into motion. Like the giant flywheel of a power plant its first movement was barely perceptible, but with every revolution it gained further momentum until it was running smoothly at the speed for which it had been designed. There remained, however, the possibility that unfavourable weather might make it necessary to slow down, or even to stop the whole machinery. As some of the assault convoys had to sail before we knew whether the weather was suitable for the landings, careful arrangements to recall them had been included in the plans. Early on Sunday morning, the 4th of June, the forecast was so bad that General Eisenhower took advantage of the option still open to him to postpone the operation for twenty-four hours. The necessary signal went out at 5.15 a.m., and by the evening all except one of the convoys which had sailed had re-anchored. The exception was a large American convoy of 138 vessels, most of them L.C.Ts, which failed to receive the postponement signal and was still heading for France at 9 a.m. An aircraft from Portsmouth and two destroyers from Plymouth were sent at full speed to turn the convoy. In this they succeeded, and after a very difficult passage against heavy head seas it struggled into Weymouth Bay in the small hours of the 5th.

Rarely can one man have carried as great a responsibility as rested on General Eisenhower during the hours following on the decision to postpone the operation. The crucial matter was that, if the weather remained too bad to launch the assault on the 6th, about a fortnight would elapse before tide and moon were again suitable. Moreover the troops could not be kept waiting on board for a prolonged period, and if they were disembarked the risk to security would be serious. At the evening meeting on the 4th conditions were still bad, but the meteorologists forecast that some improvement was likely by the morning of the 6th. General Eisenhower decided to go ahead with the assault, subject to confirmation early next morning. Admiral Ramsay, however, left the evening meeting clear in his own mind that a definite decision had been taken, and gave the necessary

orders. The final fixing of the H-Hours could now be given. They were as follows¹:

'Sword' and 'Gold': 7.25 a.m.

'Juno' right wing: 7.35 a.m.

'Juno' left wing: 7.45 a.m.²

'Omaha' and 'Utah': 6.30 a.m.

At 4 a.m. on the 5th of June General Eisenhower confirmed the decision of the previous evening, thus making it 'final and irrevocable'. 'The invasion of France' noted Ramsay in his diary 'would take place the following day'.

¹ For the general purpose of sailing all convoys and timing all aspects of the operation which depended on H-Hour, that fixed for the 'Sword' and 'Gold' assaults was taken as the standard. On 6th June 1944 off the Normandy coast the full moon set and the sun rose almost exactly at 6 a.m. (Double Summer Time, i.e. 2 hours fast on G.M.T.). High water on the beaches occurred between 9.45 a.m. and 12.45 p.m.

² The left wing assault in the 'Juno' area was delayed ten minutes because air reconnaissance had revealed what appeared to be rocks very near the surface in that sector, and it was desired to give the tide that much extra time to cover them. In fact we later discovered that it was only long strands of seaweed floating near the surface which appeared in the photographs. The precaution was thus proved to have been unnecessary.

CHAPTER XV
THE ASSAULT ON NORMANDY
6th June—3rd July 1944

‘Then came Neptunus in the way
Which hath the se [sea] in governaunce’.
John Gower, *De confessione amantis*.
(John Caxton, 1483)

EARLY on the 5th of June the first groups of the ‘Neptune’ assault forces sailed from Spithead and the Solent, and before the day was far advanced a steady stream of ships and craft of the Eastern (British) Task Force was proceeding to sea either past the Nab Tower or by the Needles channel.¹ Admiral Ramsay came out in a motor torpedo-boat to see the convoys form up and leave on their great mission. The wind was blowing freshly from the west, force 5 on the Beaufort scale², and the sea and swell at once began to tax the seamanship of the crews of the smaller vessels; but they pressed steadily ahead. Admiral Vian in the cruiser *Scylla* sailed in the afternoon, and watched the progress of the convoys as they turned south to enter ‘the Spout’. Meanwhile Admiral Kirk’s Western Task Force had also put to sea from ports further west, and they too reached the approaches to the swept channels without any untoward incidents. It was the American ‘Utah’ Force which had been most seriously affected by the twenty-four hour postponement, and by the long struggle to make port after the convoys had been turned back³; but the crews overcame all difficulties, and very few vessels failed to get to sea for the second attempt. By the evening sweepers had cleared the way through the enemy’s mine barrier, in spite of the heavy sea and the strong tidal set having made accurate navigation very difficult. Although they had to approach within sight of the French coast while it was yet daylight the enemy did not pay the slightest attention to them. The assault convoys followed the sweepers down the newly cleared and marked channels, but the strong cross current carried some groups out of their proper places in the procession. The weather was by far the most serious handicap to the passage of the assault forces. About fifty of the smaller craft in

¹ See Map 23.

² Defined as a fresh breeze of 16–20 nautical miles per hour, which causes ‘large waves to begin to form; the white foam crests become more extensive everywhere’.

³ See p. 39.

Admiral Vian's Task Force, most of which were being towed across-Channel, succumbed to the wind and sea, as did a number of Admiral Kirk's vessels. The only important losses attributable to the enemy were the mining of the destroyer *Wrestler* and of an L.S.T.

As the day passed without any sign of enemy activity, and night descended silently on the multitude of darkened ships, the senior officers watching and waiting anxiously at 'Battle Headquarters' began to hope that, incredible though it seemed, we really were going to achieve strategic and tactical surprise. The normal patrols by enemy surface craft had actually been cancelled because of the weather, and even the paratroop landings east of the River Orne soon after midnight on the 5th-6th only caused the German naval headquarters to bring its forces to immediate readiness. Not until just after 3 a.m., when reports of large ships close off Port en Bessin were received, did Admiral Krancke's 'Group Command West' appreciate that a major landing was in progress, and order the pre-arranged counter-measures to come into force. The undetected approach of the invasion fleet was, we now know, greatly aided by the bombers having put out of action several of the German radar stations, including the important one on Cape Barfleur; while our jamming had rendered others, notably the one at Arromanches, useless. It thus came to pass that the enemy was thrown back on visual sighting to obtain warning of our intentions, and by the time that the great concourse of ships could be discerned in the dim light of early dawn it was too late to interfere with the passage of the assault convoys, all of which reached their lowering positions on time. Admiral Ramsay attributed the 'astonishing feat' of surprising the enemy to many factors. The German reconnaissance had been completely defeated, our own security measures were proved adequate, and our various deceptive and diversionary ruses served their purpose¹; but it probably owed more to the overwhelming air superiority possessed by the Allies than to any other single cause.

Meanwhile the air bombardments had taken place. Between midnight and 5 a.m. 1,056 British heavy bombers attacked the ten most important coastal batteries, and also enemy communications near the assault area. Over 5,000 tons of bombs were dropped, and although few direct hits were obtained on the gun casemates, communications were seriously disrupted and the morale of the defenders certainly suffered. Then, soon after daylight, 1,630 Liberators, Fortresses and medium bombers of the VIIIth and IXth U.S. Air Forces attacked the German fortifications. Owing to the prevailing low cloud the interval between the cessation of this bombardment

¹ See pp. 11 and 14.

and the 'touch-down' was increased from five to ten minutes, but the difficult conditions caused most of the bomb loads to be dropped well inland from the targets, especially in the British assault area and the American 'Omaha' sector. Finally, for the last twenty minutes before the arrival of the assault waves, fighter-bombers and medium bombers attacked the actual beach defences. As H-Hour approached, and while this tremendous weight of bombs was being loosed on the enemy, the bombarding warships were taking up their positions offshore, and the support landing craft, vanguards of the assault forces, edged their way in towards the coast. A few minutes after 5 a.m. green lights shone to seaward out of the darkness off the 'Juno' and 'Sword' beaches. They came from the two midget submarines X.20 and X.23 which had left Portsmouth seventy-six hours earlier.¹ Because of the postponement of D-Day they had been waiting submerged off the Normandy coast for nearly three days; but their logs reveal nothing of what the long ordeal must have meant to their five-man crews. At 5 a.m. on the 6th of June the entry merely reads 'Commenced flashing green light'.

Soon after 5.30 a.m. along the whole fifty-mile front the warships' guns opened up with what was up to that time the heaviest rain of shells ever to be poured on land targets from the sea.² Then followed the lighter artillery of the leading landing craft, and finally, just before H-Hour the rocket-fitted L.C.Ts moved in towards the beaches, firing their dense salvos of 5-inch rockets so as to spread them in depth. The enemy's response to the approach of the assault waves was almost negligible. No air attacks took place, and the coastal batteries, though they fired a few shells at the transports, did no damage. The only casualty suffered by the Eastern Task Force occurred when three German torpedo-boats from Havre attacked 'Sword' force as it approached the lowering position. Several of the bombarding ships on the exposed flank were narrowly missed by torpedoes, and the Norwegian destroyer *Svenner* was hit and sank rapidly. The torpedo-boats then withdrew at high speed, fortuitously sheltered by the smoke screen which we ourselves had just laid in accordance with the planned arrangements to defend the assault forces against air attacks.

Though handicapped by the short, steep sea running at the lowering positions, the assault groups of the Eastern Task Force deployed in the manner intended, and started inshore at their correct times. Fleet destroyers steamed on the flanks of the landing craft, engaging the beach defences with their guns, while the smaller *Hunt*-class ships

¹ See p. 24.

² In the Pacific from the invasion of the Marianas in mid-June 1944 (see pp. 193-197) onwards the naval bombardments which preceded the American assaults from the sea were heavier than in Normandy.

moved in as close as possible.¹ In the 'Sword' area Admiral Vian's flagship herself closed the beaches to add the weight of her guns to the other bombardments. Though the weather had increased the inevitable difficulties of the night passage, and some groups of craft had lost a little of the perfect cohesion hoped for, none of the initial assaults was seriously delayed. Only in the 'Utah' sector did any force land on the wrong beach, and even that error proved fortunate; since the beaches where the troops were actually put ashore proved less well defended than those where they should have landed.

In essentials all five assaults were carried out as planned; but the enemy's feeble initial reaction, and our own comparatively small losses, may give a false impression both of the difficulties surmounted by the landing craft crews, and of the hard fighting which took place before the soldiers had secured the beaches and the all-important exits from them. In fact the troubles encountered, which varied from beach to beach both in form and in severity, were serious enough to call for fine seamanship on the part of the landing craft crews, and all the determination of the highly-trained and experienced troops in the assault waves. The rough sea and the German beach obstacles were the main causes of the difficulties which arose on the way in to the beaches. Though there were many variations in types of obstacle and also in their density, a typical arrangement was a row of steel or timber ramps furthest to seaward, then two rows of steel stakes, and finally irregular lines of many-pointed steel obstructions which we called 'hedgehogs'; and attached to most of them were shells or mines. We had intended that the leading landing craft should beach short of the obstacles at about half-tide, thus allowing the clearance teams to establish and mark lanes before the obstacles were covered. But on most beaches the tide was higher than we had expected. The craft thus beached among the obstacles instead of short of them, and little clearance work could be done until the receding tide had again exposed them.

We will follow briefly the fortunes of each assault force in turn. The 'Sword' landing on the eastern flank had always been considered the most vulnerable, because it was exposed to the powerful enemy batteries near Havre, and to the light surface ships stationed at that base. In fact neither threat proved serious, and apart from the sinking of the *Svenner*, already mentioned, and the loss of one L.C.I. which was hit and set on fire by a shell, little damage was suffered. 'The air' wrote Admiral Talbot 'was full of our bombers and fighters, and of the noise and smoke of our bombardments. The enemy was obviously stunned by the sheer weight of support we were meting out.' In spite of the sea being dangerously rough for the DD tanks,

¹ See Map 25.

most of them were launched when 5,000 yards offshore, and thirty-two of the original forty made land at about 7.30 a.m. The tanks specially adapted for mine clearance actually arrived before the DD tanks, and the first of the infantry landed just after them. Here the German beach obstacles took the form which our reconnaissance had led us to expect; but, because they were covered by more water than had been hoped, the lanes to the beaches could not at once be cleared, and the first wave of assault landing craft had to drive straight through the obstacles at full speed to set their loads down upon the beaches. It is not surprising that a considerable number of craft were damaged. Once the tide had fallen the clearance teams could start work in earnest, to the benefit of the later waves of landing craft.

By 9.43 a.m.—only eighteen minutes late on the planned time—the whole of the 'Sword' assault brigade was on shore. Because of the narrowness of the beaches in this sector the second and third brigades had been organised to land in turn directly behind the assault troops; and the congestion on the beaches, where severe fighting soon developed, prevented them getting ashore until the afternoon. As the morning passed casualties among the landing craft mounted. Some were damaged by gun or mortar fire, others fouled the beach obstacles or struck mines; and many were caught by the falling tide, and left high and dry. But those still afloat came to the assistance of those in trouble, and the situation was kept well in hand. Admiral Talbot himself landed in the afternoon, while the beaches were still under continuous mortar fire—and the first German air attack, by seven Ju.88s, took place just afterwards.

Meanwhile the 15-inch guns of the battleships *Warspite* and *Ramillies* and the monitor *Roberts* had engaged and neutralised the powerful German batteries at Villerville, Benerville and Houlgate to the east of the beaches.¹ The *Warspite* carried out twenty shoots on the 6th and 7th of June, firing 314 rounds from her main armament, and then returned to Portsmouth to replenish with ammunition. The five cruisers in the bombarding force subdued the enemy batteries on the 3rd Division's front, while the thirteen destroyers fired on the beach defences right up to the moment of touch-down in the manner already described.

Between 9 and 9.30 p.m. long columns of troop carriers and towed gliders passed overhead with reinforcements for the paratroops; but when the final wave, consisting of supply aircraft, came over at about 11 p.m. dusk was falling. The order had just been given to shroud the anchorage with smoke, when an air attack took place. This was exactly the eventuality which Admiral Ramsay had foreseen, and

¹ See Map 24. These three batteries were all protected by the thick concrete casemates referred to on p. 31.

had striven to prevent.¹ Inevitably some ship and shore guns opened fire, and several of our transport planes and escorting fighters were shot down. Admiral Vian asked that airborne operations should in future only take place in full daylight.

The 'Juno' force, whose assault had, for reasons explained earlier², been retarded in relation to 'Sword' and 'Gold', suffered some delays on passage, with the result that H-Hour had to be postponed a further ten minutes. This caused the landing craft to beach among the German obstacles instead of short of them. Because the senior officers of the L.C.T. groups carrying the DD tanks considered the sea too rough to launch the amphibians as intended, they ordered the L.C.Ts to carry them right on to the beaches; but one group of tanks actually took to the water about half a mile out, and arrived successfully just after the first of the infantry had landed. Here too the supporting gunfire proved invaluable. The cruisers *Diadem* and *Belfast* engaged batteries on the front of the 3rd Canadian Division³, while the destroyers bombarded the beach defences. The Force Commander remarked in his report that the bombardments were 'carried out in complete accordance with the fire plan'; and there is no doubt that they contributed greatly to preventing any very serious consequences arising from the various delays and troubles experienced. The heaviest casualties were suffered by No. 48 Royal Marine Commando. The L.C.Is in which the marines landed had wooden hulls, and many of them were damaged by beach obstacles. Then, after getting ashore, they came under concentrated mortar and machine-gun fire from positions which had not been eliminated in the first rush of the assault troops. None the less they managed to establish themselves during the forenoon on the stretch of beach at the eastern limit of the assault area. Good progress was also made by the assaulting Canadian brigade groups, who quickly cleared and secured the beaches, while the reserve groups came in behind them exactly as intended. In the afternoon the first of the follow-up force, carrying the 7th Armoured Division and part of the 51st (Highland) Division arrived in the anchorage; as did the first flight of L.S.Ts and coasters filled with stores. Although by then the beaches were littered with stranded landing craft, and there were as yet few gaps through the obstacles, unloading continued steadily. In the evening Commodore Oliver's *Hilary* and other ships moved closer inshore to speed up the rate of discharge, and Admiral Vian came over in the *Scylla* to hold a conference with his senior officers. Not one enemy air attack took place in 'Juno' area until early next morning.

¹ See p. 25.

² See p. 40, fn. 2.

³ Between the 6th and 14th of June the *Belfast* fired 1,996 rounds and the *Diadem* 1,748 at shore targets.

H-Hour in the 'Gold' area was at 7.25 a.m., ten minutes earlier than had originally been planned for the adjacent 'Juno' assault, and the preliminary bombardments fell to the cruisers *Ajax*, *Argonaut*, *Emerald* and *Orion*, the Dutch gunboat *Flores*, and thirteen destroyers. Here too the warship guns proved extremely effective, and return fire from the German batteries was negligible. The timing of the first landings by the 50th (Northumbrian) Division was remarkably accurate, but the state of the sea prevented the DD tanks being launched, and all were beached in their L.C.Ts, just after the obstacle clearance craft had touched down. Here the obstacles were thicker than we had expected, and the tide was higher; thus clearance work was slow to start. The enemy had actually placed no less than 2,500 obstacles off the three and a quarter miles of coast which the 'Gold' force had to assault. They embodied some 900 tons of steel and concrete, and few of them could be removed until after the tide had receded. Landing craft suffered heavily, and it was past noon before the enfilading fire from enemy strong points in villages overlooking the beaches was finally quelled. We attached considerable importance to the early capture of the small town and harbour of Port en Bessin at the western limit of the 'Gold' area, and No. 47 Royal Marine Commando was therefore ordered to push quickly inland, avoiding action with the enemy, and seize the town from the rear. The plan did not, however, work out as intended. The marines lost most of their assault craft, and all their wireless equipment, during the landing; and as soon as they got ashore they encountered stiff opposition. Although they became completely isolated from all our other forces they acted with all their traditional dash and determination; and after forty-eight hours of very hard fighting, in which they suffered over 200 casualties, they achieved the task given to them. As soon as Port en Bessin was captured naval parties set about reopening the harbour. During the forenoon of D-Day the 50th Division's two reserve brigades landed, and before nightfall we held a firm lodgement in the 'Gold' area.

To turn to the American assaults, apart from the difference in the timing of H-Hour, which had been imposed by varying tide conditions¹, their execution differed from that of the British assaults in two important respects. Whereas Admiral Vian's bombarding forces had opened fire at 5.30 a.m., some two hours before his first landing craft touched down, Admiral Kirk's did not follow suit until 5.50. This allowed only forty minutes for neutralising the defences before the assault waves arrived, and American senior officers later admitted that it proved inadequate. The other difference was that the American lowering positions were established eleven miles offshore,

¹ See p. 40.

as against seven in the British assault area, in order to reduce the exposure of the large transports to the fire of German batteries on the Cotentin peninsula. This meant that the landing craft had at least a three-hour passage to the beaches, and it is not surprising that, in such unfavourable conditions of sea and wind, they should have found it difficult to maintain formation. Though this did not seriously affect Rear-Admiral Moon's 'Utah' force, which found comparatively calm waters under the lee of the Cotentin, it was a contributory cause to the grave troubles experienced by Rear-Admiral Hall's 'Omaha' force.

H-Hour for the 'Utah' force was at 6.30 a.m., about an hour earlier than on the British front. Two hours before the main assault U.S. Rangers easily seized the St Marcouf islands about four miles to seaward of the beaches¹, and so eliminated a position which, had it been stubbornly defended, might have impeded the landings seriously. Shortly before 6 a.m. bombarding ships under Rear-Admiral M. L. Deyo, U.S.N., opened fire on the batteries which guarded the stretch of coast from Barfleur in the north to the mouth of the River Vire. The monitor *Erebus*, the cruisers *Black Prince* and *Hawkins*, the American Navy's battleship *Nevada* and its two cruisers *Tuscaloosa* and *Quincy* fired with such accuracy that, in spite of the short time allowed to them, they silenced most of the coastal batteries; and when, later in the day, some German guns managed to get off a few rounds at the offshore shipping they were quickly subdued by one or other of the supporting warships. The presence of the *Black Prince* off this part of the Normandy coast, and the allocation to her of the enemy batteries near St Vaast-la-Hogue was a curious historical coincidence; for it was at that very spot that, on the 12th of July, 1346, Edward III and his son, later known as the Black Prince, landed the invasion army of 'four thousand men at arms and ten thousand archers' who had embarked in 'a large fleet of ships at Southampton'; and, after the landing had succeeded, the King knighted his son, then aged sixteen, on the Normandy shore.² A few days later Edward had completed what we would call his 'build-up', and his armies marched inland to attack and pillage the towns and seaports whose names were to rivet the attention of the world almost six centuries later. Nor was the assault force commanded by Admiral Moon less successful than its fourteenth century predecessor. The first wave of landing craft left the transport anchorage fairly punctually, but the weather delayed the DD tanks by about half an hour. Some of the lost time was, however, made up by the L.C. Ts in

¹ See Map 24.

² See *Sir John Froissart's Chronicles*, translation by Thomas Johnes, 3rd edition, Vol. II, Chapters CXIX and CXX (1806).

which they were embarked carrying them further inshore than had been intended. The tanks were launched only 3,000 yards from the beaches, and 'supported the infantry with marked success'. Meanwhile the light cruiser *Enterprise*, the Dutch gunboat *Soemba* and eight destroyers engaged the beach defences.

In the 'Utah' area the state of the tide enabled offshore obstacles to be cleared more easily and rapidly than in the British sector; but the lanes established for the landing craft passed over a sandbank on which the Germans had laid delay-action mines, whose presence had not been detected by the initial sweeping. All the losses suffered by Admiral Moon's ships on D-Day, including the U.S. destroyer *Corry*, a patrol vessel and four landing craft, were probably caused by these mines. Further troubles arose through control craft becoming casualties, or suffering from breakdowns. Assault waves were thus deprived of their guides, and this, combined with the haze and smoke which obscured the beaches, caused the landings to be made about a mile south-east of the intended positions. It was mentioned earlier that this proved a fortunate error.¹

During the approach the enemy's artillery fire was spasmodic and inaccurate, and the damage it did to the offshore shipping was insignificant. Opposition on the beaches was also surprisingly light. Thus the troops made rapid progress inland, and by 6 p.m. on D-Day 21,328 men, 1,742 vehicles and 1,695 tons of stores had been landed. The almost perfect start to the invasion gained by the American 4th Division owed a great deal to the paratroops, who had seized the causeways leading inland from the beaches well before the seaborne assault forces touched down.

In marked contrast to the experiences of Admiral Moon's ships, those of Admiral Hall in the adjacent 'Omaha' area had the most difficult time of any of the assault forces. Not only was a heavy surf breaking on the beaches, but they possessed good natural defensive features; and the assault troops were faced by more and better trained troops than the Germans normally allocated to man their static coastal defences.² Moreover the air bombardment, which should have plastered the beach defences during the final half hour before the assault, did not succeed in its purpose; and the German batteries were so well sited that the task of the bombarding warships, which were commanded by Rear-Admiral C. F. Bryant, U.S.N., was made exceptionally difficult. The important battery of six 6-2-inch guns believed to be on Pointe du Hoe was assigned to the

¹ See p. 44.

² The report that a German field division had, by chance, been exercising in the neighbourhood of the 'Omaha' beaches, though widely propagated soon after the invasion, is now known to have been incorrect. In fact an additional regiment was allocated to the sector in March 1944, though Allied intelligence remained unaware that the defending forces had been strengthened.

American battleship *Texas*¹, and against it she fired 250 rounds from her 14-inch guns. When, early in the day, the soldiers reached the position they found, however, that the Germans had moved the guns about a mile away, and left the casemates empty. The guns themselves were, however, captured and destroyed before the end of D-Day. To the American battleship *Arkansas*, the French cruisers *Georges Leygues* and *Montcalm*, and the British cruiser *Glasgow* were allocated the fixed defences between Port en Bessin and the mouth of the River Vire; but even with air observation it proved difficult to locate the targets, and the bombardments were thus less effective here than in the other assault areas. In spite of the destroyers closing to within 800 yards of the beaches, and the great weight of explosive hurled against the defences, the first troops to leap ashore were met by heavy and accurate fire. On the left of the assault the DD tanks were launched as much as 6,000 yards offshore, with disastrous results; but on the right the senior officers of the L.C.Ts carrying them gauged the sea conditions more accurately, and took the tanks right in. The correctness of their judgment is shown by the fact that of the thirty-two tanks launched at sea all but five foundered, whereas only eight of the fifty-one carried on to the beaches were knocked out by enemy gunfire.

The situation off the 'Omaha' beaches now developed on the very lines which every assault force commander would wish to avoid. Much of the artillery had been lost when the DUKWs in which it was embarked were swamped on the way inshore, a number of assault craft suffered a similar fate, and losses among the special craft designed to breach the offshore obstacles and clear the beaches were so heavy that very few clear passages were established. Moreover the beach obstacles were soon covered by the rising tide, and so could not be cleared until they became exposed again some hours later. It thus happened that many assault craft were stopped to seaward of the German defences, or damaged themselves in trying to force a way through them. Very soon there was a confused mass of craft of all types trying to find a way inshore, what time the short, steep sea caused them entirely to lose their disciplined formations. Not until senior officers arrived and ordered the craft to haul off to seaward, thus gaining room to form up again, was some semblance of order restored. Throughout the forenoon such troops as got ashore were pinned to the beaches, just above high-water mark; and although the destroyers came in as close as they dared, and engaged the troublesome strong points, the enemy's fire continued heavy and accurate. It was nearly noon before the stubborn defenders

¹ See Map 24. According to French nomenclature the correct spelling is *Pointe du Hoc*. As, however, on all contemporary Allied maps the name is given as *Pointe du Hoe* it has been thought best to retain that spelling here.

began to give way, and the Americans could get across the beaches. In the afternoon things went better, more gaps were cleared through the obstacles, and troops and vehicles landed steadily; but German guns were still registering very accurately on the points of disembarkation, and they caused heavy losses. The soldiers believed, quite erroneously, that the shell-fire came from the Allied bombarding warships out at sea, and repeatedly asked them to stop firing on the beaches. In fact the ships that were in action were then engaging targets far inland; but the receipt of such messages from the beaches did have an inhibiting effect on the warships, which in consequence sometimes became over-cautious in answering calls for fire support for fear of endangering their own side's troops. In spite of these troubles by 5.30 p.m. the beaches had been secured, and some progress had been made inland.

While the main forces of the 'Omaha' assault were engaged in this desperate struggle, U.S. Rangers had landed to storm the commanding position of Pointe de Hoe, and they too had encountered stiff opposition. The bombardment by the *Texas* had stopped five minutes before H-Hour as planned; but the assault troops were thirty-five minutes late arriving, and this gave the Germans time to leave their shelters and man their cliff-top positions. The Rangers had to climb up by ropes and ladders, under heavy fire and a constant rain of grenades. The destroyers *Satterlee* (American) and *Talybont* closed to within a mile to support them with their gunfire, and eventually the Rangers carried the cliffs and established a defence line at the top. But they were completely cut off for the next forty-eight hours. This experience showed that in an assault from the sea it was very necessary for the naval bombardment to 'conform to the movements of the landing craft', rather than be bound by a rigid time-table.

As D-Day drew to a close it became clear that the invasion of Normandy had been more successful than anyone concerned in its planning and execution had dared to hope. The very strong fighter cover provided over the convoy routes and assault areas, combined with the heavy attacks made on the German bomber airfields, had reduced the Luftwaffe almost to impotence; and the carefully worked out bombardment plan had, except in the 'Omaha' sector, enabled the troops to get ashore with far fewer losses than we had anticipated, to secure their beaches quickly, and to advance rapidly inland. In the British sea- and airborne assaults casualties on D-Day totalled only about 4,300, and on the American front 6,000—astonishingly small figures when one considers the strength of the defences.

It will be an appropriate moment to summarise the effects of the naval counter-battery fire. German records are full of references to its dire effects, and Allied military commanders also signalled frequent appreciative tributes to the warships which were supporting

them. To quote one example of the former, on D-Day the German Seventh Army Commander reported to Field Marshal Rommel that 'Weapons sited in field works had to be dug out before use, owing to the preliminary bombardment of the enemy naval artillery. Coast defence guns were in most cases put out of action by direct hits on casemates. Counter-attacks . . . suffered very heavy casualties in the neighbourhood of the coast through enemy naval artillery fire.' Though there is little doubt that against the unprotected coastal batteries, and also against troops and vehicles massing for counter-attacks the warships' gunfire was very effective, it may none the less be wise to treat such evidence from enemy sources with some reserve. In the first place the German military authorities may well have been anxious to find reasons for the success of the Allied landings which cast no reflection on their own competence.¹ Secondly, when the day came that we ourselves were able to make a careful examination of the coast defence batteries, we found that, although in most cases they had certainly been neutralised, comparatively few direct hits had been obtained on the actual gunhouses and casemates. Thus in the Houlgate battery one of the two casemated guns received a direct hit from a 15-inch shell, and three unprotected gun positions were also hit; but at Benerville neither of the two guns in casemates was hit. At Longues two such guns were, however, hit by 6-inch shells passing (perhaps rather luckily) through the actual embrasures.² Thus although the naval counter-battery fire unquestionably achieved its purpose, study of its results does provide considerable confirmation of the well-known fact that strongly protected and cleverly sited shore batteries are extremely difficult targets for warships to hit. Indeed in its final summary of the results of the warships' gunfire the Naval Staff noted that, although unprotected guns could be quickly silenced, a prolonged bombardment was necessary to put even them permanently out of action; and against guns in strong casemates or gunhouses only direct hits could accomplish that object. Furthermore they remarked that complete air superiority was essential to success, in order that spotting aircraft should be able to work for the warships, and that it was also important to deny the

¹ As an example of such evidence, on the 16th June the Germany Army publication *Militärische Korrespondenz* issued an article eulogising the effects of the Allied naval bombardments in somewhat extravagant terms as 'the Anglo-U.S. invasion armies' best trump card', and concluded with the remark that 'It is no exaggeration to say that the co-operation of the heavy naval guns played a decisive part in enabling the Allies to establish a bridgehead in Normandy'. Although the broad facts stated were certainly correct, the tone of the article was such that the present-day reader may well feel that it was intended mainly for consumption outside the service to which it was addressed.

² The *Nelson*, *Ramillies*, *Roberts* and *Erebus* together fired 218 rounds of 16- and 15-inch and 928 rounds of 6-inch at the Houlgate battery. The *Rodney*, *Warspite*, *Ramillies* and *Roberts* fired 284 rounds of 16- and 15-inch and 58 of 6-inch at Benerville and the *Ajax* and *Argonaut* fired 179 rounds of 6- and 5.25 inch at Longues.

enemy the use of such aircraft for controlling their return gunfire.¹ The moral effects of the naval bombardments, as of the air bombing, are of course extremely difficult to assess, as they depended not only on the quality of the enemy troops involved but on the effectiveness of the shelters provided for them. Where deep shelters were available, as for the coast defence batteries, it was probably not great; but against unprotected troops it was certainly severe.

By nightfall on D-Day good progress had been made towards all the armies' initial objectives, unloading was proceeding steadily on the beaches, the minesweepers were clearing the inshore waters, and the ships carrying the follow-up formations were coming across the Channel virtually unhindered. Among these latter mention must be made of a convoy from the Thames, in which there were eleven large troopships. They all passed safely through the Dover Straits at 5 p.m. on D-Day—the first passage made by big merchantmen through those waters for over four years.

From the point of view of the Royal and United States Navies a remarkable feature of the assault was that losses of ships and craft were far lower than we had expected. On the other hand the number of the smaller vessels, and particularly L.C.Ts and L.C.As, which had been damaged was higher. In the British area the figure was 258 landing craft of all types. The main cause of damage had been the weather, but delays in clearing beach obstacles also contributed a quota. None the less, in the Naval Commander's words, 'the outstanding fact was that, despite the unfavourable weather, in every main essential the plan was carried out as written'. That brief statement sums up what was, in fact, a remarkable achievement; for in the sixteen or seventeen hours which had passed since the first men leapt ashore 132,715 Allied soldiers were landed from the sea. Precise statistics of stores, guns and vehicles unloaded on D-Day are not available, but a close study of the British records shows that over 6,000 vehicles (including 900 tanks and armoured vehicles, 240 field

¹ These conclusions are, moreover, fully supported by an investigation made in 1945 by the Joint Technical Warfare Committee, which then had all the relevant information available. 'In "Overlord"' the Committee stated 'the only weapon which was capable of penetrating the strong concrete protection of casemated guns was the armour-piercing shell from the main armament of battleships and monitors. None of the bombs used was adequate, nor were they expected to be. . . . Material damage from naval bombardment is unlikely unless a heavy scale of effort is used. . . . Summing up, it seems probable that bombing reduced the potential rate of fire of the coastal batteries. . . ., while naval gunfire was the only means available for producing a further appreciable but temporary reduction in enemy fire.' As regards the effects of the close-range bombardments of the beach defences the Committee found that 'by far the heaviest contribution to the drenching fire was provided by L.C.Ts (Rocket) and S.P. artillery [i.e. self-propelled guns carried in landing craft]. . . . As a result of the drenching fire 10 to 20 per cent of the enemy positions were put out of action. . . . The remaining enemy weapons were not handled as effectively as might have been expected, probably in part due to the moral effect of our fire support.'

guns, 80 light anti-aircraft guns and 280 anti-tank guns), as well as 4,300 tons of stores and ammunition, were landed by the Eastern Task Force. The quantity of ammunition put ashore did, however, fall well short of the planned figure, and for some time the Army remained anxious on that score.

As darkness descended on the crowded offshore anchorages the measures planned to defend the assault shipping against enemy surface warships or U-boats came into force. In the British sector a line of minesweepers was anchored six miles offshore, parallel to the coast, while the support landing craft moved over to the exposed eastern flank, and anchored there in close formation. Further out to the north-east destroyers kept guard against enemy forces which might try to break down-Channel, and between them and the anchored minesweepers motor torpedo-boats lay stopped and listening. Surprise attack was less likely from the west than from the east, because enemy forces coming from the former direction would have to pass through the American assault area; and there Admiral Kirk had established his own patrols. Control of all the British surface patrols was centred in Admiral Vian's flagship the *Scylla*, which anchored each night in the 'Sword' area. As to night air defence, six squadrons of Mosquitos took over responsibility from the day fighters who had so successfully shielded the convoys during the approach and assault. Smoke screens, laid by special trawlers, were used in the early stages, but were soon abandoned because they were liable to handicap our own anti-aircraft gunners, and also made it impossible to mark the positions of the aerial mines which the enemy soon began to lay.

Though many of the seaward patrols clashed with enemy light forces, and there were several air attacks as well, the first night on the other side actually passed fairly quietly, and no losses of any importance were suffered by the invasion fleet. During that night (the 6th-7th of June) German light craft laid mines on both sides of Cherbourg, in Seine Bay and also far to the east off the French and Belgian coasts, where the enemy still expected landings to take place. The new pressure-operated 'oyster' mines were increasingly used, and after the 9th were laid by the Luftwaffe as well as by surface vessels. They posed serious problems for, at the time, it was virtually impossible to sweep them. Happily, as had so often happened before, one of the new mines was dropped on land and recovered.¹ Inspection of its mechanism enabled the Admiralty at once to issue orders which mitigated the danger; but the problem of sweeping these mines was not solved during the assault phase of 'Neptune'. Apart from losses caused by the weather by far the greatest number of

¹ See Vol. I, p. 100.

U-BOAT DISPOSITIONS

10th JUNE 1944

Lofoten Is.

U-Boats on the Biscay or Norwegian reconnaissance patrols and those around the British Isles not in the Channel area.....●

U-Boats detailed for Channel operations...→

U-Boats detailed for or returning from Mid-Atlantic or overseas patrols.....◀



casualties were caused by mines—especially in the ‘Utah’ area. There Admiral Moon lost four destroyers and two minesweepers, and had another twenty-five ships and craft damaged during the first ten days.

Our overwhelming naval and air superiority quickly put a stop to daylight attacks by enemy surface warships, and even by night their movements were seriously restricted. The close escorts and flank guards of the convoys, which soon began to sail on regular cycles, had many brushes with E-boats by night; and, if they caused the enemy few losses, they completely frustrated his purposes. While the E-boats were returning to their bases after these night forays Coastal Command Beaufighters harried them repeatedly, and Wellington bombers patrolled the French coast and attacked in the glare of their parachute flares whenever they gained contact. During the whole of the first week after the assault the German surface forces only sank three small ships in a convoy which they attacked south of the Isle of Wight; and the losses they inflicted among the mass of shipping in Seine Bay amounted to no more than two L.S.Ts and half a dozen lesser craft. On the other hand two E-boats were mined off Barfleur, and a third was sunk by our surface patrols in the same waters. Then, on the 13th of June, Beaufighters of Nos. 143 and 236 Squadrons scored an outstanding success against these elusive enemies by sinking three E-boats and one R-boat off Le Touquet.¹ Meanwhile our reconnaissance aircraft had reported a considerable concentration of enemy light craft at Havre, and Admiral Ramsay asked that Bomber Command should attack the base. Just before dusk on the 14th 325 Lancasters struck with deadly effect. Eleven E-boats were destroyed and three damaged in their concrete shelters², while three torpedo-boats and about two score lesser vessels were sunk in the harbour. The War Diary of the German Naval Group Command West described the results of the raid as ‘catastrophic’. ‘Losses are extremely heavy’ continued Admiral Krancke: ‘the naval situation in Seine Bay has completely altered. It will hardly be possible to carry out the planned operations with the forces which have survived.’ Twenty-four hours later the heavy bombers attacked Boulogne in similar strength, and destroyed twenty-seven more ships and small craft. These two raids temporarily eliminated the threat of the German light naval forces. Although a fresh E-boat flotilla was moved to IJmuiden from the Baltic, they inflicted no further losses in June.

If the experiences of the enemy’s light craft were unhappy, those

¹ See Appendix V for the classification of German minor war vessels.

² The German E-boat shelters were far less stoutly constructed than those designed to take U-boats. See Vol. II, p. 352, and this volume, p. 133 regarding the effect of bomb hits on the latter.

undergone by his U-boats were even worse; and to understand how they fared it is necessary to retrace our steps to the latter part of May. It has already been told how, when the movement of U-boats from Norway to the Atlantic started in the middle of that month Coastal Command's No. 18 Group, which had been specially reinforced by No. 15 Group, scored no less than seven successes—four of them against Atlantic-bound boats—within little more than a fortnight.¹ Thereafter the U-boats acted more cautiously when passing round the north of Scotland, and surfaced as little as possible. The result was that five 'Schnorkel'-fitted boats got through safely to Biscay bases early in June, and others soon followed; but the arrival of these reinforcements actually had little effect on the course of events, since the whole of the group of thirty-six boats which the enemy had assembled in western France was still in harbour during the critical period when the invasion convoys were crossing to France, as were the twenty-one boats stationed in south-west Norway. Not until the early hours of the 6th of June were the two groups which had been specially formed to oppose an invasion of Europe brought to immediate readiness. At the same time five 'Schnorkel'-fitted boats which had just passed Iceland into the Atlantic were diverted to Brest. A short while later nine 'Schnorkel' boats from Brest and La Pallice were ordered to make for a position twenty-five miles south of the Isle of Wight, seven Brest boats without 'Schnorkels' were given patrol positions between the Scilly Islands and Start Point, while the remaining nineteen of the group in western France were disposed to form a reconnaissance line in the Bay of Biscay, as a precaution against an Allied landing on that coast.² In addition three large destroyers from the Gironde were told to make for Cherbourg.

On the evening of the 6th, Coastal Command Beaufighters sighted the U-boats leaving Brest, and the planned measures to deal with any attempt to approach the invasion convoys were at once brought into force. Other Beaufighters sighted the three German destroyers off St Nazaire, and so damaged them by a succession of attacks with their cannons that they put into Brest. Late on the 8th they put to sea again, reinforced by a small destroyer (the T.24) which had been in Brest; but they were quickly resighted by our air patrols, and in the small hours of the 9th of June the 10th Destroyer Flotilla (Captain B. Jones), which had just concentrated its eight ships, two of which were Canadian and two Polish, made contact by radar to the west of Cherbourg. The Allied destroyers, which were on a westerly course, were formed in two divisions, with the Polish *Blyskawica*

¹ See Part I of this volume, pp. 261–262, regarding the successes obtained by Coastal Command between 16th May and 3rd June.

² See Map 26.

leading the more northerly. At 1.25 a.m. the southernmost division, which was led by Captain Jones's *Tartar*, opened fire at about 5,000 yards range. After avoiding the torpedoes fired by the German flotilla the British ships pressed in to almost point-blank range, and so threw their enemies into confusion. Two German destroyers tried to break away to the north, and the other two to the south and west. These latter (the Z.24 and T.24) were pursued by the Canadian destroyers *Haida* and *Huron*; but they finally managed to escape in the darkness and regained Brest. One of them (the Z.24) was, however, badly damaged. Meanwhile to the north one enemy (the ZH.1) was hit and stopped by the *Tartar*. The other, the German leader Z.32, should have fallen an easy prey to the Polish division, but the *Blyskawica* turned away to avoid torpedoes and so lost contact. The Z.32 then encountered the *Tartar*, hit her several times, and reduced her speed drastically at a critical moment. After getting the damage under control Captain Jones renewed the search, with the *Ashanti* in company. They next encountered the *Tartar*'s previous opponent, the ZH.1, which they sank. The two Canadian destroyers, which had meanwhile returned from their pursuit to the west, now intercepted the Z.32. Headed off from the direction in which she wished to escape, and with Allied ships converging from several directions, her fate was plainly sealed. She was finally driven ashore, a blazing wreck. This sharp engagement, which illustrates vividly the hazards and difficulties of night fighting between fast moving warships, shattered the only German surface force capable of seriously challenging the passage of the Allied invasion convoys.¹

To return to the U-boats, on the night of the 6th-7th of June there were many clashes between No. 19 Group's aircraft and the Biscay boats, one of which (U.955) was sunk while five others were damaged and forced back into port. Furthermore, although four of our aircraft were shot down while making low-flying attacks, the enemy regarded the threat from the air so seriously that he ordered all U-boats to stay submerged as much as possible while on passage. That order was, by itself, a substantial success to Coastal Command; for it greatly restricted the U-boats' operational capacity. Next night, that of the 7th-8th, there were several more attacks. U.970 was sunk by a Sunderland, while a Liberator of No. 224 Squadron commanded by Flying Officer K. Moore accomplished the remarkable feat of scoring a 'right and left' by sinking U.629 and U.373 within half an hour of each other.

On the 8th the U-boat group formed in Norwegian bases was

¹ Z.24 and Z.32 were of the large (2,400 ton) class of German destroyer. T.24 was a smaller (1,100 ton) fleet torpedo-boat. ZH.1 was the ex-Dutch destroyer *Gerard-Callenburgh* (1,628 tons), which had been scuttled in 1940 before completion, and raised later by the Germans.

ordered to sea to establish a patrol line off the southern coast of that country.¹ Next day its five 'Schnorkel'-fitted boats were told to make for the Channel. We will return to the Norway patrols shortly, for it is necessary first to recount the fate of the U-boats from the Bay of Biscay which attempted to attack the invasion convoys. Early on the 9th a Liberator of the famous 120 Squadron sank U.740 off the Scilly Islands. Next day four Mosquitos caught U.821 on the surface close off Ushant, riddled her with cannon fire and left her to be finished off by a Liberator. The Germans now stopped the sailing of all boats which were not 'Schnorkel'-fitted, and on the 12th all unmodified boats already at sea were recalled; but attacks on the others still continued, and although several of our aircraft were shot down, and many others damaged by anti-aircraft fire, the enemy's losses mounted steadily. By the 12th the six 'Schnorkel' boats, which were all that remained of the original Biscay anti-invasion striking force, were creeping slowly up-Channel. Two entered St Peter Port, Guernsey, with their batteries exhausted, and were repeatedly attacked while sheltering there. On the 15th, however, the enemy scored two successes. U.767, which was the first of the 'Schnorkel' boats from Norway to reach the Channel, sank the frigate *Mourne* off Land's End, and U.764 torpedoed the frigate *Blackwood* off Cape de la Hague. She sank while being towed to Portland. The very bad asdic conditions which prevailed at the time had helped the enemy, but U.764 was damaged in the ensuing counter-attacks. The lost frigates were, however, soon avenged; for three days later the destroyers *Fame*, *Inconstant* and *Havelock* located U.767 off the Brittany coast and sank her, and on the same day Coastal Command added to its swelling total of successes when a Polish-manned Wellington destroyed U.441 off Ushant. It thus came to pass that nine days elapsed between the launching of operation 'Neptune' and the arrival of one single U-boat (U.621) in her intended patrol position in the Channel; and it was chiefly the air patrols of No. 19 Group which had stultified their efforts. U.621 sank an American L.S.T. off Cape Barfleur, fired at but missed two of Admiral Kirk's supporting battleships, and then returned to Brest. Another fortnight was to elapse before a U-boat scored any further success against the dense flow of shipping plying to and from the invasion area. If further evidence of the decisive nature of the Biscay U-boats' defeat is needed it will be found in the logs of those which survived; for the desperate straits to which they were reduced stand there fully revealed.

Meanwhile No. 18 Group's aircraft had been handling the Norway patrols equally severely. Between the 11th and 17th of June they sank

¹ See Map 26.

three enemies¹, and damaged three others so badly that they had to return to port. On the 24th the Canadians of No. 162 Squadron scored another success (their third within two weeks) when one of their Cansos sank U.1225. The aircraft was severely injured by gunfire as she ran in, but the pilot pressed home his attack most gallantly, and completed it just before he came down into the sea. Though some of his crew were rescued many hours later, the pilot, Flight Lieutenant D. E. Hornell, R.C.A.F., lost his life. He was awarded a posthumous V.C. Before the end of the month No. 18 Group scored two more successes², thus achieving the destruction of four of the U-boats ordered from Norway to the Channel, and one bound overseas. This was a big contribution to safeguarding the invasion convoys.

If the results achieved by the German surface ships and U-boats were trifling in relation to the amount of shipping present in the Channel, those obtained by the Luftwaffe were even more insignificant. During the whole of June its only success was to sink the destroyer *Boadicea* in a torpedo attack on the night of the 12th-13th, while she was escorting a convoy off Portland. Nor did the enemy bombers do any better against the invasion shipping in the crowded-offshore anchorages. Apart from damaging Commodore Douglas-Pennant's Headquarters Ship *Bulolo* with a bomb on the 7th, and sinking the frigate *Lawford* on the following night, throughout the whole of June enemy air attacks only caused the loss or damage of five ships in the British assault area, and one in the American: and most of them were small.

We must now return to the Normandy coast to recount the events which followed on the assault.

The 7th of June dawned fine and clear, but a strong wind (force 5-6) was still blowing. The sea remained rough until the afternoon, when the wind began to drop. Although the nasty loup still troubled the smaller craft, especially off the 'Omaha' beaches, work was soon going steadily ahead. All the beaches were littered with wrecked and damaged landing craft, while others which had broken down drifted about offshore; but the beach parties gradually restored some sort of order, and the ferry services had started to run between ships and shore, though at first only on a small scale. General Eisenhower and Admiral Ramsay came across in the minelayer *Apollo*, and visited all the assault forces to see for themselves how things were going; while General Montgomery arrived in the destroyer *Faulknor* and set up his headquarters in France.

¹ U.980 on 11th and U.715 on 13th by Cansos of No. 162 (R.C.A.F.) Squadron, and U.423 on 17th by No. 333 (Norwegian) Squadron. See Appendix Y for details.

² U.317 sunk by a Liberator of No. 86 Squadron on 26th, and U.478 by a joint effort by aircraft of Nos. 162 and 86 Squadrons on 30th. See Appendix Y for details.

The eight convoys planned to reach the assault area on the 7th of June all arrived on time; but the state of the sea seriously impeded unloading; for there was as yet no shelter off the beaches. However the arrival of the first convoy of blockships ('Corncocks') early in the afternoon gave promise of easier conditions, and the sinking of them to form the 'Gooseberry' shelters was quickly started. As had been planned they were all completed by the 10th, and they quickly proved their value. In the British sector the discharge of the L.S.Ts' urgently needed cargoes had been badly delayed, and about a hundred of them were waiting offshore. As drastic action was plainly necessary Admiral Vian ordered them to beach themselves, regardless of the fact that they would be left high and dry when the tide went out. This unorthodox measure was entirely successful, and few L.S.Ts suffered damage. The shortage of L.C.Ts, many of which had been lost or damaged, was another acute problem—as it had been in the assault at Salerno¹; for the unloading of mechanical transport and store ships was thereby seriously delayed. Once again emergency steps were taken. L.C.Ts allocated to the cross-Channel shuttle services were diverted to the Assault Force Commanders, even though this was bound to hinder the build-up, and coasters were ordered to beach themselves wherever space could be found. As with the L.S.Ts this measure proved very successful, and it was henceforth adopted as the standard method of unloading coasters whenever the weather was suitable; but to a seaman's eye the sight of many ships stranded far from the water's edge appeared, to say the least of it, unusual. The small ports of Courseulles and Port en Bessin², which had been little damaged, were quickly brought into use, and within a few days were each capable of receiving 1,000 tons of cargo daily. The port of Ouistreham, however, proved disappointing. As the Germans were still installed on the east bank of the River Orne, and were able to bring small arms and mortar fire to bear, we could make little use of it during the build-up period.

On the American front very similar problems arose, and they were surmounted by the same emergency measures. Many types of ship and craft were ordered to beach themselves, additional L.C.Ts and 'Rhino ferries' were scraped together to speed unloading, and by the 15th of June most of the arrears had been worked off. Here too there were minor ports (Grandcamp and Isigny) to help in keeping the Army supplied; but Admiral Kirk did not order them to be developed until the 13th and, because of the bad weather, it was the end of the month before they made any appreciable contribution to unloading stores and equipment.

¹ See Part I of this volume, p. 175.

² See Map 24.

In the loading ports in England the first three or four days also produced difficulties—especially at Portsmouth and Southampton, where the congestion of shipping became acute. Apart from the many warships which came back to replenish with fuel, stores and ammunition, merchantmen which had been in the assault and follow-up convoys began to arrive before the loaded ships had all been despatched to France. Though there was some confusion and delay no serious consequences arose; and within a week the loading ports, though their capacity was strained to the limit, were meeting all the requirements of the build-up.

While the Task Force and Assault Force commanders were tackling the many problems which arose, the construction of the artificial harbours was going ahead fast, and on the whole smoothly. The first 'Mulberry' convoys consisting of blockships ('Cormcobs'), tugs, mooring ships, 'Bombardon' and 'Phoenix' tows, had all sailed on D-Day; and the first Bombardons were placed on the 7th. Next day the first tows of the 'Whale' pier units started across, and thereafter they and the Phoenix convoys sailed daily. By the 9th the final survey of both harbours had made good progress. Phoenix caissons were being sunk, and work had been started on the first Whale pier in the British Mulberry. After ten days of continuous and arduous work the harbours were taking shape, the breakwaters were about half completed, and the Bombardons were in place.¹ Losses among the slow and vulnerable Mulberry convoys had, however, been heavy—caused mainly by the weather. Five Whale tows, two Phoenix caissons and two tugs had been lost from one cause or another. On the 12th Admiral Tennant ordered that all convoys were in future to make the latter part of their crossing in daylight, and that Whale units were not to be sailed if the wind and sea were such as might cause them damage. The survey of the sites for the ship-to-shore petrol supply lines at Port en Bessin and St Honorine had meanwhile been completed; and although offshore obstructions made the laying of the pipes more difficult than we had hoped, the first was ready by the 25th of June.² We will return to the development of the 'Pluto' fuel supply scheme later.

Throughout the whole of June the bombarding squadrons remained off the Normandy coast, ready to support the Army with their guns whenever the need arose. Ships returned to England to replenish their magazines or to replace worn-out guns; but until the advance inland had reached beyond the range of their guns a large force of battleships, cruisers, monitors and smaller vessels was continuously present and constantly in action. Sometimes ships shifted

¹ See Map 27.

² See p. 29 and Map 24. St Honorine was just inside the American sector, west of Port en Bessin.

from one assault area to another, where the need was temporarily greater. Thus the *Warspite* on her return from Portsmouth on the 10th of June went to support the 'Utah' force, and engaged four different targets with her 15-inch guns to such good effect that the American army commander signalled his gratitude. Next day she was in the 'Gold' area supporting the 50th Division, and again earned the soldiers' appreciation. The speed with which the great fire power of the heavy ships was repeatedly brought to bear on enemy concentrations certainly emphasised the benefits to be derived from employing warships as mobile heavy artillery. British and American military records emphasise the value of the warships' gunfire to the Allied armies as often and as clearly as German records reveal the concern, even despair, which the constant harassing fire caused them. Thus on the 11th of June Rommel reported to Hitler that 'the effects of heavy naval bombardment are so powerful that an operation either with infantry or armoured formations is impossible in an area commanded by this rapid firing artillery'. Six days later Dönitz's liaison officer at Hitler's headquarters telegraphed that 'our attacks make no advances within the range of the enemy naval artillery. . . . The Führer sees the only possible relief for the land front in the elimination of enemy naval forces, primarily battleships'; but, for reasons already explained, there was very little that the Grand Admiral could do to drive the bombarding ships off station. Even if a proportion of this evidence should be discounted, for reasons explained earlier¹, there can be no doubt that the long-range supporting fire of the warships not only caused the Germans considerable discomfiture, but was immensely heartening to our own troops.

The reserve battleships *Nelson* and *Rodney* were soon sent across to add the weight of their 16-inch guns to that of the other ships, and between the 11th and 18th of June the *Nelson* carried out twenty bombardments against troop concentrations and enemy batteries, firing 224 rounds of 16-inch and 687 of 6-inch. One great advantage possessed by these two ships was the very long range to which their guns could fire. Thus the Germans were astonished and dismayed when, on the 30th, concentrations of armoured vehicles some seventeen miles inland due south of the 'Gold' area suddenly came under devastating fire from the *Rodney's* guns. Air spotting was used to control the majority of the long-range bombardments; and although communication between ship and aircraft sometimes proved difficult, it was in general extremely efficient. The 'Forward Observers Bombardment'² also played a valuable part; but they had landed very early, with the assault troops, and had suffered heavy casualties

¹ See p. 52.

² See p. 33.

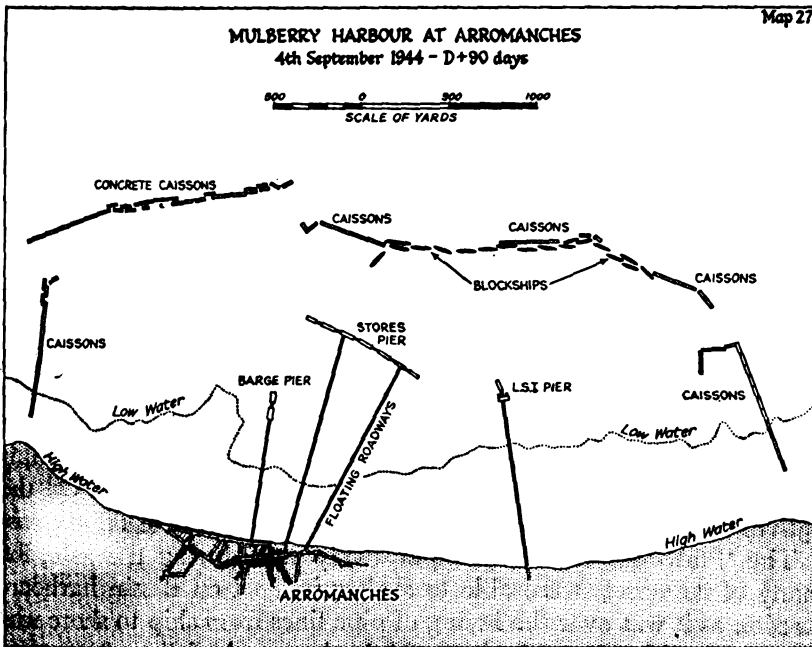
in consequence. Furthermore in the enclosed Normandy countryside they found it hard to establish satisfactory observing positions. In the main it was the combination of well-trained teams of air observers and ships' fire control crews which achieved such highly satisfactory results; and the long periods spent in exercising those teams, and in carrying out bombardment practices off the Scottish coast, reaped a rich reward.

By the middle of June the success of the assault from the sea was no longer in doubt. Arrears of unloading were being worked off, and the build-up arrangements were running smoothly; the artificial harbours, though less advanced than we had hoped, were providing shelter for an increasing number of ships and craft; the British Second Army had five infantry, two armoured and one airborne division ashore, while the American First Army had landed eight infantry, one armoured and two airborne divisions. With half a million soldiers and 77,000 vehicles landed in France the Allied armies were ready to strike powerfully out of their bridgeheads. Their offensive had indeed already started, and on the 17th the Americans reached the west coast of the Cotentin peninsula—the next step towards capturing the port of Cherbourg at its tip. Spirits were everywhere high, and optimism was in the air when on the 16th King George VI, accompanied by the First Sea Lord, the Allied Naval Commander and many other high officers, arrived in the British assault area in the cruiser *Arethusa*. The King went ashore in a DUKW flying a Royal Standard which had been hastily made and painted by the Boatswain of Commodore Oliver's *Hilary*, and was met on one of the 'Juno' beaches by General Montgomery. In the evening he returned to Portsmouth, and it seemed that his visit had been the final act in setting the stage for the next, and possibly the decisive phase. Unfortunately the gods who rule wind and waves decided otherwise.

Though the weather had never shown benevolence towards the 'Neptune' assault forces, and moderate to strong winds had generally prevailed in the Channel, there had so far been no grounds for really serious anxiety on that score; for a storm of any great violence is a rare event in the English Channel in June. Furthermore on Sunday the 18th of June the weather appeared to have taken a turn for the better; for the sun shone on a calm sea and the barometer was steady. Indeed the beaches, black with men and with vehicles, the landing craft busily plying to and fro, and the forest of masts in the off-shore anchorages produced an atmosphere which a Cockney naval commando was heard to describe aptly, if nostalgically, as 'like Margate on a Bank Holiday'. That evening the barometer betrayed a faint tremor, but there seemed no cause for anxiety until, in the early hours of Monday morning, it suddenly began to blow hard from the

north-east. At daylight on the 19th the strength was gauged at force 6 on the Beaufort scale (21-26 nautical m.p.h.) with gusts rising to force 8 (34-40 m.p.h.), and waves six feet high were sweeping across the anchorages. The sailing of shuttle service vessels from England was stopped, and little unloading was accomplished on the other side that day. The very success of the first weeks of the build-up now increased the problems facing the assault force commanders; since the more men, guns and vehicles they landed the more food, ammunition and fuel was needed to keep them in fighting trim. But there was very little that could be done to keep up the flow of supplies. Small craft had to seek shelter inside the 'Gooseberries', which now proved invaluable; but even so many of them had a severe tussle to avoid being cast adrift at the mercy of wind and waves. All that day, although hundreds of vessels were plainly in grave peril, riding off a dead lee shore, the prevailing feeling was that such a gale at such a time of year could not last long. The night of the 19th-20th, however proved such optimism to be ill-founded; for the wind blew yet more strongly. We may quote the impressions of one eye witness. 'The flood of supplies for the Army' he wrote 'dried to a trickle, but here and there the wonderful little DUKWS wallowed like hippopotamuses between the coasters and the shore. They carried ammunition mostly. In places, from time to time, a few landing craft beached. Some broke their backs, crushed by the surf as a dog crushes a bone. On Tuesday [the 20th] it blew as hard as ever. Someone said "I reckon this will be the most famous gale since the Armada". . . . Ships were now dragging their anchors and parting their cables. Any engine failure meant certain disaster. A destroyer [the *Fury*] struck a mine [at 10.45 a.m. on the 21st] and drove on shore, and as night fell a big coaster grappled by two tugs bore down on us. Next came a signal "If the ship on your port bow is No. 269 she contains 3,000 tons of ammunition"; but the tugs held her like terriers all night, and she was saved.' So it continued for more than eighty hours. By Thursday evening, the 22nd, the crews of ships and craft were nearly exhausted, but the wind then began to ease. To quote again from the eye witness's report: 'Its shriek dropped to a long-drawn sigh. Dakotas came over with urgent supplies for the Army, and in the west a rent in the sky revealed blue. Then, suddenly, the sun shone.' But the scene revealed on the beaches might well have daunted the stoutest hearts. Upturned, broken-backed boats and craft lay everywhere, sometimes actually piled on top of each other by the force of the waves. Lorries, guns, Rhino ferries and all manner of equipment had been strewn in hopeless confusion, while at the water's edge came in a vast flotsam of wreckage—and of dead men. Some of the damage was caused by the heavy Bombardons which broke adrift and, driving down to leeward, demolished any light craft unlucky

enough to find themselves in their path; but the 'Gooseberry' shelters saved hundreds of vessels, even though, at the height of the gale, seas had driven right over the sunken block-ships. The fate of the Phoenix breakwaters depended on the depth of water in which they had been sunk, and damage was far more severe in the American than in the British sector. The Mulberry off St Laurent had, in fact, lost all protective value; and the toll taken of ships and landing craft was very heavy. In all some 800 craft, many of them engaged on the highly important ferry services, had been driven shore.



On the 21st fourteen L.S.Ts beached successfully in the 'Juno' area although the wind was still blowing force 6, and they all got off again successfully; but it was not until the next evening that unloading of ships restarted, and the ferry craft began to ply to and from the shore again. To the Army the consequences of the storm were very serious. In the British sector not only did it produce a potentially dangerous shortage of ammunition and other essential stores, but the build-up had been brought to an almost complete halt; and three divisions which should have landed were still in their transports. Whereas shortly before the gale an average of 22,570 tons of stores had been put ashore on each day in the British and American assault areas, between the 19th and 22nd only some 1,800 tons was unloaded daily in the British 'Mulberry', and about 1,600 tons over the beaches.

The deficiency suffered by both armies was estimated at 105,000 tons of stores and 20,000 vehicles, and was not fully made up until the 26th of July. Furthermore, while the arrival of Allied reinforcements was at a standstill the enemy was able to move up his reserves without serious hindrance; for the storm greatly reduced the scale of our air attacks. It was plain that, unless the situation could be quickly restored, a crisis might arise.

Admiral Ramsay and the Home Port Commanders-in-Chief at once instituted emergency measures. Special teams of skilled men were quickly formed, and rushed across to France; additional repair ships were collected, and the salvage organisation was strengthened. Thanks to these steps many of the stranded vessels were soon repaired and refloated, and the build-up was resumed far more quickly than had at one time seemed possible; but the damage to the American Mulberry was so severe that General Eisenhower decided that it should not be restored to use. All the remaining material was to be concentrated on completing the British harbour, and on strengthening it sufficiently to withstand the gales of the approaching autumn and winter.

The first cargoes were actually delivered over the main stores pier of the British Mulberry on the 29th of June¹, and by the 8th of July the daily intake had reached 6,000 tons. On the 19th the L.S.T. pier was used for the first time, and the Mulberry may be said to have been completed on that day, when unloading reached the planned figure of 7,000 tons; but, chiefly as a result of the storm, it had taken twice as long to construct as had been forecast. On the 29th of July the stores landed reached the record figure of 11,000 tons.

The 'Pluto' force fared comparatively well during the gale, for many of its vessels were able to shelter in Port en Bessin harbour. As soon as it was over the laying of pipe lines from ship to shore was resumed, and by the early days of July they could deliver 8,000 tons daily—if the weather was fine.

In a combined operation nothing is more certain than that the most thorough and careful planning, organisation and training will not be proof against the unexpected and the unforeseen. Thus flexibility, initiative and the capacity to improvise quickly will always be of paramount importance—not only in the high command, but right down to the lowest levels of responsibility. Officers and men have to understand the main requirements so clearly that they will instinctively take whatever action may be necessary when an emergency arises. Happily in the British maritime services the importance of intelligent initiative has always been recognised; and never was that quality more needed than off the Normandy coast

¹ See Map 27.

while the gale of June 1944 was raging. It is beyond doubt that the losses would have been immeasurably greater, and perhaps disastrously so, had not the thousands of junior officers and ratings risen to the occasion, and grappled with the emergency which suddenly faced them. Thus the real heroes of those hectic days and nights were the crews of the small craft, coasters and tugs, who fought the elements to save the ships and the precious cargoes on which the soldiers depended so entirely.

We must now retrace our steps to the days immediately preceding the great gale, and take up again the story of the German efforts to interfere with the build-up of the armies. With perhaps as many as sixteen convoys and about the same number of groups of landing craft continuously at sea in the Channel it was certain that the enemy would never lack targets—if his surface forces, U-boats and aircraft could penetrate to the shipping routes. By the middle of June, however, the surface and air threats had, as told earlier, been virtually eliminated. There remained the U-boats and the mines, and it is to the former that we will next turn. During the second half of June six U-boats sailed from the Biscay bases for the Channel, and another six were moving towards the same waters from the Atlantic. Our air and surface patrols were, however, making their progress very slow; for they had to stay submerged as much as possible, and could thus rarely cover more than thirty or forty miles daily. With the U-boats showing such extreme circumspection the air patrols found them difficult to locate; and if they were located there was generally no time to make a deliberate attack. Thus for nearly a week (18th to 24th of June) we achieved no successes. But we were aware of the U-boats' movement up-Channel, and on the 19th the surface patrols in the South-Western Approaches were therefore transferred by the Admiralty to the western edge of the convoy routes. On the 24th a Wellington damaged U.971, which was finished off by two destroyers. Next day the frigates *Affleck* and *Balfour* sank U.1191 off Portland Bill, and the *Bickerton*, commanded by Captain D. G. F. W. Macintyre, one of our most successful escort group leaders, destroyed U.269 in the same area.¹ On the night of 29th–30th of June a Leigh Light Liberator sighted the top of U.988's 'Schnorkel', made an accurate depth charge attack and called up the nearby 3rd Escort Group. The warships finally dispatched the enemy early next morning. It thus came to pass that in the last week of June only three U-boats actually reached the cross-Channel routes; but one of them, U.984, scored a conspicuous success when, on the 29th, she torpedoed in quick succession four Liberty ships in a convoy which was passing Selsey Bill. One was got safely in, but the others

¹ See Captain Donald Macintyre *U-boat Killer* (Weidenfeld and Nicolson, 1956).

were beached and became total losses. Such results accomplished by a single enemy showed very clearly what might have happened had any significant proportion of the U-boats ordered into the Channel managed to reach the waters through which such dense traffic was passing at the time.¹

It will be convenient here to summarise the results of the U-boats' effort against the invasion fleet. Of the twenty-five ordered up-Channel in June five gave up the attempt for one reason or another. Of the remainder seven were sunk and three returned to base damaged. On the last day of the month four were actually patrolling near the convoy routes, and six were still trying to reach them. These latter actually caused us few losses and, as will be told later, they themselves suffered heavily.² Of the successes achieved in June, three enemies were sunk by surface ships and two by aircraft, while the other two were shared between the two arms. That the defeat of the U-boats in the Channel was a combined Navy-R.A.F. operation is thus abundantly clear; but the experience of this critical month underlined one other important point. As long as the U-boats were on the surface Coastal Command aircraft were able to strike against them with deadly effect; but once the 'Schnorkel' had arrived, and the U-boats were able to remain submerged for much longer periods, the air patrols lost a good deal of their effectiveness; for the 'Schnorkel' funnel was far more difficult to pick up by eye or by radar than the hull of a surfaced U-boat. The dangerous significance of this development, which threatened to restore to the enemy the initiative which he had been forced to surrender in the early spring of 1943, was not lost on the British authorities. Four years of continuous struggle had taught us that by far the most effective counter-measure to the U-boats was to employ radar- and Leigh Light-fitted aircraft in conjunction with radar- and asdic-fitted surface escorts—the aircraft to carry out widespread searches, and the ships to hold contact and attack until the enemy was destroyed.³ By reducing the effectiveness of our air-borne radar, the 'Schnorkel' struck a heavy blow at Allied anti-U-boat tactics. Taken with the construction of high-speed submarines⁴, on which we knew the Germans to be actively engaged, it was plain that unless victory could be gained before the two developments had come into general use, we might

¹ The sinking of the small troopship *Maid of Orleans* off Selsey Bill on 28th June, and of the *Empire Portia* next day in the same waters were long attributed to U-boats; but scrutiny of German records now indicates that they were more probably victims of mines.

² See pp. 126–128.

³ See for example Part I of this volume, pp. 208 and 326, regarding the tactics used in the Mediterranean.

⁴ See Part I of this volume, pp. 17–18.

find ourselves struggling against an enemy who was once again possessed of the inestimable benefit of the initiative.

The reader will remember that during the first fortnight after D-Day most of the losses caused by German mines occurred among the American assault force.¹ Thereafter our Ally's losses dropped, but those suffered by the British task force rose sharply, and before the end of June were becoming serious. An early victim was Admiral Vian's flagship the *Scylla*, which was seriously damaged in the 'Juno' area on the 23rd, but was successfully towed to Spithead. In all we lost five warships and four other vessels between the 22nd and 29th of June, and had another seven warships damaged; but most of them were of small displacement. The stringent enforcement of slow speed successfully reduced the danger from pressure-operated mines; and, although the sweepers could not deal with this type, they eliminated about 500 other mines during the month. After the beginning of July although 'the threat had not been completely mastered' Admiral Ramsay considered that the worst was over, and that there was no longer any risk that German minelaying would seriously impede the build-up.

The last cause of losses to our shipping arose through the enemy's continued hold on the country east of the mouth of the River Orne, which enabled him to bring artillery and mortar fire to bear on the 'Sword' beaches.² After a number of vessels had been damaged, the unloading of personnel ships was shifted to the adjacent 'Juno' area. But the enemy's fire continued persistent and accurate, more losses were suffered, and on the 1st of July the 'Sword' beaches were therefore closed. All unloading was now transferred to the more westerly sectors, which by that time were able to handle it.

Meanwhile the American VII Corps was closing in on Cherbourg, and as General Bradley had asked for a naval bombardment to synchronise with the final attack, a special Task Force was formed at Portland under Rear-Admiral M. L. Deyo, U.S.N. It consisted of three American battleships, four cruisers (two British and two American), eleven American destroyers for screening the big ships, and two British and one American minesweeping flotilla. The enemy defences included a powerful battery of four 11·2-inch naval guns, and two batteries each of four 5·9-inch; and the original plan was to neutralise the guns by long-range fire before closing in to engage whatever targets the Army might designate. The Task Force sailed on the night of the 24th-25th of June, but the long-range bombardment

¹ See pp. 54-55.

² See Map 24.

was cancelled at the request of the Army, and when the ships moved inshore to prepare to give close support to the troops they came under heavy and accurate fire. They stayed about seven miles off the harbour from noon until nearly 4 p.m. on the 25th, manoeuvring to engage targets and to avoid damage. None the less all but one of the heavy ships, as well as three of the destroyers, received hits or splinter damage. Subsequent inspection of the enemy defences showed that, although many shells had fallen around the gun emplacements, the batteries themselves had suffered only slightly.¹ The gunfire probably had some moral effect on the defenders of Cherbourg, but the experience showed once again that carefully sited shore guns are extremely difficult targets to deal with by bombardment from the sea. Cherbourg actually fell to General Bradley's troops next day, the 26th, and no time was lost in starting to clear the port. The Germans had wrecked the docks and harbour works very completely, while the port itself was heavily mined and thoroughly obstructed by many sunken ships. The heads of the British and American salvage sections, Commodore T. McKenzie, R.N.V.R. and Commodore W. A. Sullivan, U.S.N., at once flew to Cherbourg to survey the damage. The scene of wholesale destruction which met their eyes was truly daunting, and it was plain that even their great ingenuity and experience would be taxed to the limit to restore the port to use within a reasonable period. Mines of many different types, strewn in the water and concealed on land, were the greatest menace. The clearance of the harbour itself was made a British responsibility, and was carried out mainly by the 9th and 159th Minesweeping Flotillas. During the first fortnight they accounted for 111 mines; but three sweepers and several smaller vessels were blown up by the concealed devices which they were seeking. It soon became plain, moreover, that normal methods of sweeping were not enough. British teams of volunteers, who had been trained in rendering bombs and mines safe, were therefore sent across; and in course of the next six weeks these human minesweepers explored almost the whole bed of the harbour, and removed or made innocuous a large additional number of mines and explosive devices. By the 16th of July the clearance work had advanced far enough for the first deep-draught ships to enter, and from that day onwards the rate of discharge increased steadily until a figure of 12,000 tons daily was reached in mid-September. Restoration of the port facilities was carried out by British and American salvage teams under Commodore Sullivan's direction; but the German demolitions had been so thorough that it took nearly three months to reach the point where the Army's needs could all be met.

¹ One of the four 11·2-inch naval guns was put out of action by a direct hit from the *Texas*.

The fall of Cherbourg enabled Admiral Ramsay to release some of his bombarding ships and a proportion of the landing craft. The Admiralty and the U.S. Navy Department had for some days been pressing for this, because the ships and craft were urgently needed in the Mediterranean, for the landing in the south of France, and thereafter for service in the Far East.¹ Thus a gradual and cautious reduction of the naval forces working in the Channel now started, and continued steadily throughout July. Another consequence of the fall of Cherbourg, and of the increasingly stable conditions off the beaches, was that it was possible for the British and American assault force commanders to be replaced by command organisations set up on shore. On the 24th of June Rear-Admiral J. W. Rivett-Carnac had set up his headquarters at Courseulles as Flag Officer, British Assault Area, and two days later Rear-Admiral J. W. Wilkes, U.S.N., assumed similar responsibilities in the western area. Rear-Admirals Vian and Kirk returned to England on the 30th of June and 3rd of July respectively. Though the support and supply of the armies in France continued to figure very largely in the work of the Allied navies for many months to come, these changes marked the end of Operation 'Neptune'. It was perhaps appropriate that at this time—to be precise on the 5th of July, twenty-nine days after the first assault—the millionth Allied soldier should have stepped ashore in France.

At the time when the Allies were thus adjusting their command organisation to the more stabilised conditions prevailing in the assault area, changes of a very different nature were taking place in the German High Command; for on the 2nd of July Hitler dismissed General von Rundstedt, his Commander-in-Chief, West, and appointed General von Kluge in his place. On the 8th the Führer issued his first order to the new Commander-in-Chief, and the paragraphs dealing with the Navy show how completely out of touch he was with the realities of the situation in the Channel and off the Normandy beaches. 'It remains the Navy's task' stated the order ' . . . to continue as before to attack the enemy's supply routes, to inflict damage on his naval forces and transports, wherever they may be, . . . and to prevent new landings by the enemy. . . . The U-boat arm is to be employed in such a way as to afford the greatest measure of relief to Army Group B. . . . Besides the attacks in the Channel consideration can also be given to the resumption of the U-boat war in the Atlantic.' As the German Navy had shown itself to be quite incapable of fulfilling these purposes when the need first arose on D-Day, and during the following month had suffered such losses

¹ See Chapter XVI.

as to render it almost impotent, it would be hard to imagine a greater lack of realism than was exhibited by Hitler in this order.

When one looks back at those critical weeks in historical perspective it is plain that every one of the objects stated in Admiral Ramsay's original orders was successfully accomplished.¹ It is true that he was exceptionally fortunate as a commander in that he was not only given very wide freedom to state his needs, but he knew that those needs would in general be met. Only rarely did the Admiralty protest against what they regarded as over-insurance against risk or undue rapacity for ships, men and craft, and insist on the demands being modified. In this the Admiral's position might well have aroused the envy of those less fortunate commanders who, during the preceding four and a half years had repeatedly undertaken dangerous enterprises with forces which they knew to be barely sufficient, and were sometimes totally inadequate. Whilst we may justly acclaim the great success achieved in 'Neptune', it is therefore only fair to remember how much benefit that operation derived from the experiences, and even the failures, of earlier expeditions which we had been unable to equip on the same lavish scale. Because they enjoyed the inestimable benefit of overwhelming superiority in the air and on the sea, the naval forces allocated to Admiral Ramsay were never, except during the great gale, subjected to strains and dangers comparable to those encountered and overcome in many earlier naval operations and combined expeditions. Nor did they have to fight the enemy so often and so hard in order to achieve their objects. To some extent it therefore seems true to say that the risks faced in 'Neptune' were over-estimated, and that the margin of safety allowed in the allocation of forces was unduly large. On the other hand we had learnt at no small price that in assaults from the sea the hazards must always be great, and the only certainty is that the unexpected will happen. Thus, in an enterprise on so vast a scale and of such unprecedented importance, it was natural that the planners should try to guard against every conceivable risk and eventuality—even to the point of excessive insurance. Where 'Neptune' will long, and perhaps for ever, remain unique is as a feat of inter-service organisation. Never before had so many soldiers, sailors and airmen been assembled and trained to achieve a joint purpose; nor so many ships and aircraft, vehicles, tanks and guns been allocated to the same end. It was the duty of the Navy, under Admiral Ramsay, to embark the soldiers and their multifarious equipment, to transport them overseas, to land them in the face of

See pp. 13 ff.

the enemy, and then to support and supply them. The extent to which those purposes were successfully accomplished may best be demonstrated by an entry made in Admiral Krancke's War Diary on the 25th of June. The German wireless interception service had evidently read the unloading figures recently reported from the assault area. 'The amounts stated' runs the entry 'represent many times the reserves of material and men moved up to the front by us, and present a clear picture of the enemy's superiority, and of the advantages of seaborne supplies, given sea and air superiority'.

CHAPTER XVI
THE MEDITERRANEAN
CAMPAIGNS
1st June–31st December 1944

‘Over the seas our galleys went
With cleaving brows in order brave
To a speeding wind and a bounding wave—
A gallant armament’.

Robert Browning, *The Wanderers*

AFTER the capture of Rome on the 4th of June, two days before the landings in Normandy, the Fifth and Eighth Armies advanced rapidly up Italy as far as the positions known as the ‘Gothic Line’, which the Germans had established between the west coast of Italy, just north of Pisa, and Pesaro on the Adriatic.¹ For Admiral Sir John Cunningham’s Mediterranean Fleet, and the subordinate naval commands at Alexandria, Malta, Algiers and Gibraltar, there followed a period of very hard, if mainly unspectacular work.² To meet the ever-rising demands of the Allied armies and the needs of the civil populations of liberated territories, the flow of shipping had increased enormously; and although the threat of enemy attack had steadily diminished, the great majority of the ships still had to be sailed in convoy. To give an idea of the size of the traffic, in June six fast personnel convoys, comprising forty-five ships in all, and seventeen slow convoys totalling 347 ships passed through the Levant command area; and during the same month no less than 496 merchant vessels of all types were cleared from Naples alone. A steady stream of warships was also now passing through the Mediterranean and the Suez Canal to join the Eastern Fleet, which the War Cabinet wished to reinforce as soon as ships could be spared from the European theatres. Thus in June the fleet carriers *Victorious* and *Indomitable*, a number of escort vessels and no less than eight submarines went east. In addition to the never-ending commitments of convoy and escort, destroyers, gunboats, and coastal craft were kept in readiness to support the flanks of the Army

¹ See Map 29.

² See Appendix M for details of the Mediterranean Fleet command organisation at this time. The post of Flag Officer, Western Mediterranean (at Algiers) was not actually filled until 15th July 1944, when the Commander-in-Chief moved his own headquarters from Algiers to Naples.

wherever they came down to the sea; new assault forces were forming and training to undertake fresh combined operations; the need to sweep inshore shipping routes clear of the mines which the enemy had laid in large numbers was continuous; offensive blows were constantly struck by our surface ships, submarines and aircraft against the ships which the enemy sought to pass through the diminishing waters over which he was still able to exercise a measure of control; and as each new seaport was captured, a naval party had to move in hard on the heels of the Army to sweep the mines, clear the wrecks and re-open the port for our own use.

The maritime war in the Mediterranean at this time comprised three separate but inter-related campaigns. The first was waged in the Tyrrhenian and Ligurian Seas and along the west coast of Italy, with the chief object of supporting the American Fifth Army; in the second we sought to control the Adriatic sufficiently not only to meet the needs of the British Eighth Army in Italy, but also to support the Partisan fighters in Yugo-Slavia, and to hinder the enemy's attempts to supply his own forces in that country and the Balkans by sea; and in the third we aimed to deny the enemy sufficient control of the Aegean to supply his garrisons in the outlying islands which, in spite of the failures of the previous autumn¹, we still hoped to occupy as a preliminary to the final expulsion of the Germans from Greece, and as an inducement to Turkey to enter the war. Before, however, we recount the march of events in each of those campaigns it may be desirable to remind the reader of the clash between the British and American views regarding the correct strategy to adopt in the Mediterranean theatre, which came to a head at this time. The alternatives before the Allies were, in brief, either to devote sufficient resources to the Italian campaign to break into the Po valley, destroy Kesselring's army, and then drive north-east towards the Danube valley, or to assist the main landing in Normandy by making a subsidiary assault either on southern France or in the Bay of Biscay.² The proposal to land in southern France was discussed at the first Quebec conference in August 1943, and at Cairo in the following November the Combined Chiefs of Staff agreed that such an operation (called 'Anvil') should be carried out concurrently with 'Overlord'. But a basic condition needed to justify the diversion of forces to such a purpose was that the Allied armies in Italy should have advanced at least as far as the Gothic Line; and the battle for Rome was so long-drawn that, by the early weeks of 1944, it was plain that such a condition would not be fulfilled in time. Mr. Churchill and the British Chiefs of Staff now became

¹ See Part I of this volume, pp. 188-203.

² See J. Ehrman, *Grand Strategy*, Vol. V, pp. 231-270 and Map 4, for a full explanation of the lengthy debate between the British and Americans on this matter.

convinced that, rather than jeopardise the successful conclusion of the Italian campaign, and the immense strategic possibilities which would be opened up by a victory in the Lombard plains, 'Anvil' should be abandoned. The Americans, however, took a totally different view, holding that the subsidiary landing in southern France would, by drawing off enemy forces, make an important contribution to success in the north.

Although the British leaders repeatedly pointed out that the Allied armies in Italy were keeping such substantial enemy forces closely engaged that they were already fulfilling all that could be expected from a landing in southern France by way of weakening the enemy's reaction to 'Overlord', no amount of argument would persuade the Americans. The British case was, moreover, weakened by the fact that the new assault was to be American-led, and was to be carried out mainly by American forces, with a French army following up. Furthermore, execution of the operation depended greatly on the allocation of landing craft, of which the United States was by far the greater producer; and it was asking too much to expect the Americans to divert such vessels from the Pacific, except to carry out an operation in which they whole-heartedly believed. As the United States was, by providing the major share of the resources, paying the piper, it was reasonable, if not inevitable, that they should claim the right to call the strategic tune. Moreover in America there was at the time considerable dislike of operations which they regarded as 'diversions' from the main purpose of defeating the German armies in western Europe, and a deeply-felt, if rarely expressed, mistrust of British intentions in the Middle East, with their implications of post-war imperial and colonial interests.

In May 1944 the various alternatives were again reviewed by General Maitland Wilson, the Supreme Allied Commander, Mediterranean; but no decision had been reached by the time that Rome was captured on the 4th of June. That event, however, strengthened the British desire not to do anything which would, in the words of the Chiefs of Staff, 'rob General Alexander of the fruits of his victory'. A week later, although the destination of the next combined operation was still undecided, the Americans agreed to allocate sufficient shipping to carry out such an undertaking at the end of July, with three divisions in the assault forces. The alternative possibilities for their employment were, firstly, to make a landing at Cette, just west of Marseilles, and then to drive north-west to capture Bordeaux¹, secondly to make an assault in the Bay of Biscay near to the same port; or, thirdly, to send an expedition to the Istrian peninsula near the top of the Adriatic to gain control of Fiume,

¹ See Map 29.

Trieste and Pola, and so open the way north-east to the Danube valley. But the old differences between the outlook and purposes of the two western Allies were by no means yet resolved. General Eisenhower, whose main concern naturally was the success of 'Overlord', strongly urged that only a landing in southern France would assist the defeat of the German armies in the north, even though it could not now be carried out simultaneously with the Normandy landings, as had originally been intended. Furthermore capture of at least one more major French port besides Cherbourg had become an urgent requirement, for large reinforcements were awaiting shipment from America to Europe; and General Eisenhower considered that Marseilles could meet the need more easily than Bordeaux. The American Chiefs of Staff supported his view, and urged that the other alternatives should be abandoned in favour of the assault in southern France. Though Mr Churchill pleaded eloquently with President Roosevelt and his advisers against the removal of forces from Italy and in favour of exploiting to the limit the victory which seemed to be within General Alexander's grasp, the President remained unmoved. At the end of June the British Chiefs of Staff advised the Prime Minister to give way 'in the broadest interests of Anglo-American co-operation'—which advice Mr Churchill accepted reluctantly and under protest, convinced as he was that a serious strategic error was being made.¹ We will return to the planning and execution of operation 'Anvil' after we have considered other events in the Mediterranean theatre.

Ever since the previous autumn the commanders of the Allied forces in Italy had been conscious of the importance of the island of Elba to the enemy. As long as the front line lay to the south of Rome it acted as an outpost from which they could keep a protective watch on the coastal shipping which carried a substantial proportion of their army's supplies to adjacent ports on the mainland of Italy. The heavy demands on all the Allied services in the early months of 1944 during the Anzio stalemate² had so far prevented serious attention being given to the capture of the island, but on the 7th of April planning for a combined assault was started. 'D-Day' was then to be the 25th of May. The Allied high command strongly desired to make use of the recently re-organised and re-equipped French land and air forces, which had given a good account of themselves in Italy and were now poised and anxious to play a full part in the liberation of their homeland. Accordingly General P. Mignan, who was in command of the French ground forces in Corsica, was nominated military commander of the expedition, and Colonel

¹ See Churchill, Vol. VI, pp. 50-62.

² See Part I of this volume, pp. 319-324.

T. C. Darcy of the U.S. Army Air Force was placed in charge of the air support, which was to be provided by two Fighter Wings and one Bombardment Wing from the Coastal and Tactical Air Forces and included several French squadrons.¹ Rear-Admiral T. H. Troubridge who had recently commanded the northern assault at Anzio², was given command of all the naval forces taking part in the attack on Elba. The principal military force allocated to the operation was a French colonial infantry division of some 9,500 men. They were to be carried from Corsica in British and American landing craft, escorted and supported by coastal craft, gunboats and support vessels supplied by the same two countries' navies. By the middle of May, however, the force commanders reported that training and preparations were not sufficiently advanced, and the assault was therefore postponed until mid-June. The plan had originally included both a parachute drop and a heavy air bombardment shortly before H-Hour; but when reports that the enemy was evacuating the island came to hand the use of paratroops was cancelled. In the interests of achieving tactical surprise it was also finally decided that there should be no preliminary bombing. Events were to show that, as on certain previous occasions³, this was a mistake—the more so because, on account of the mine menace, no heavy naval gun support was provided.

On the 16th of June the 19th Minesweeping Flotilla left Maddalena, and swept a channel to Campo Bay on the south coast of Elba, where the main assault was to take place.⁴ No less than forty-two mine moorings were cut in the process. At 1 a.m. next morning small preliminary landings by French commandos took place on the north and south coasts of the island, with the object of destroying the coastal batteries commanding the beaches of Campo Bay. Though the commandos suffered heavy casualties, these landings served a useful purpose.

The main assault force was carried in thirty-eight landing craft, all of which arrived safely at the release position at 2 a.m. The only loss on passage was the mining of an L.C.F. (Landing Craft Flak) which formed part of the escort of the first L.C.T. convoy. The first assault waves moved inshore on time, but were detected and heavily fired on before they reached the beaches. Rocket salvos from special landing craft of the type which had proved so valuable off Normandy temporarily subdued the defences overlooking the beaches; but the landing craft and assault troops none the less came under heavy

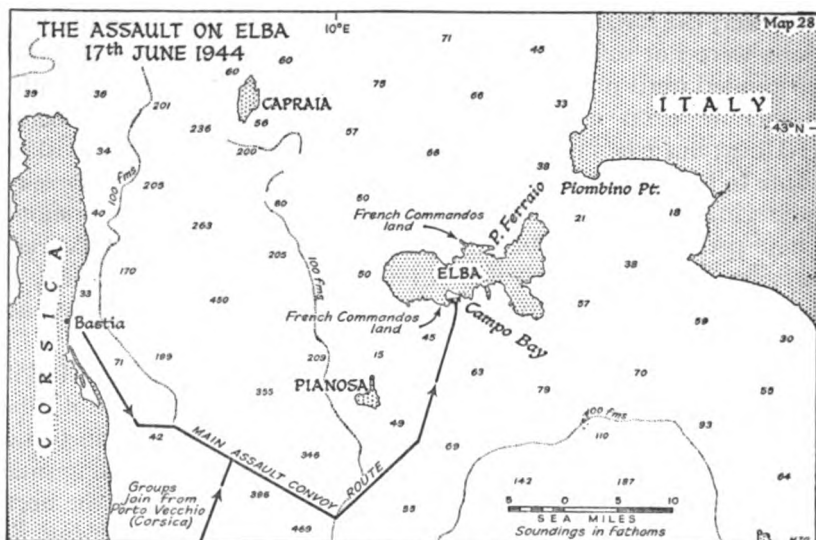
¹ Appendix N gives the organisation of the Mediterranean Air Commands at this time.

² See Part I of this volume, pp. 299–305.

³ In the assaults on Sicily and at Salerno (see Part I of this volume, pp. 115 and 175–176 respectively).

⁴ See Map 28.

fire from both flanks and from ahead. The second waves, followed in, but they too suffered considerable casualties, as did the L.C.Is of the follow-up flights.¹ Smoke screens were laid, but the situation continued difficult for some hours, partly because on some beaches there were no suitable exits for vehicles. This trouble had been foreseen, and to circumvent it some 200 mules had been embarked in L.C.Ts. At 9.15 they were put ashore on the eastern flank, and successfully carried much-needed ammunition round to the main beach. By early afternoon the beaches were firmly held. 'An interesting feature' wrote Admiral Troubridge in his report, perhaps remembering



Gallipoli, 'was the return of the mule to combined operations. Tracks and wheels require a beach with exits, but a mule can scramble almost as well as a man.'

The three British gunboats present, which were shallow draft ships originally designed to work on the great rivers of China, and the support landing craft did good work by engaging the coastal defences; and they contributed to the comparative immunity of the off-shore shipping from battery fire. But when they were required to engage targets further inland, using indirect fire with air or ground observers to spot the fall of shot, they were less successful. The large number of different services from different nations engaged in this

¹ The Commanding Officer of L.C.I.(L) 184 told in his report how, at the moment when things were going far from well on the beaches 'a cheery soul from the shore hailed me with what sounded like "Can you make some coffee?". This seemed a little odd' continues the report 'but it transpired that he was a press representative asking "Can you take some copy?"'

undertaking increased the difficulty of making the naval support effective. With French forces on the ground demanding air support from American aircraft, or bombardments by British warships against German batteries which were troubling them, there were almost unlimited possibilities for confusion and misunderstanding. As Admiral Troubridge said in his report 'the scene in the operations-room-cum-wireless-office of my flagship (LCH.282), where fourteen lines were working and two languages (not counting bad) were flowing, was indescribable . . . but the signalmen as usual performed a miracle, and in no previous operation have I been better served'.

On the 18th, when heavier and more effective air support became available, the ground forces made good progress inland, and next day all organised resistance ceased. The naval losses amounted in all to ten landing craft, mostly L.C.As. Casualties among the French assault troops were relatively heavy—nearly 900 killed, missing or wounded; but German casualties were over 3,000, and no appreciable number of the garrison escaped to the adjacent mainland.

In retrospect it is, of course, plain that by the time it was carried out the assault on Elba was probably unnecessary. The Army commanders in Italy had, indeed, always preferred to concentrate all our resources on the mainland; but plans to attack the island had been completed long before the new offensive on the mainland had brought the Army abreast of it, thereby rendering its fall certain, and the French troops were available and had been trained for the assault. Thus the decision to adhere to the plan can readily be understood. The chief interest in the operation lies in the fact that, though small in scale compared with many other assaults from the sea, the results wholly confirmed the lessons drawn from earlier landings. These were that preliminary air and naval bombardments generally exceeded in value the somewhat abstract consideration of surprise; and that only by prolonged and careful training could the support of the ground forces from the sea and air be made really effective. By the date that it took place the assault on Elba might have been a perfect example of a small combined operation; but in fact its execution fell short of that high standard.

The port of Civitavecchia was occupied three days after the fall of Rome, and before the end of June the small harbours to the north, as far as the latitude of Elba, were also captured. In each case naval parties at once put in hand the work of re-opening the ports. Civitavecchia itself was badly damaged, and the harbour was blocked; but by the 20th of June 6,000 tons of cargo were being discharged there daily. On both coasts of Italy the minesweepers kept pace with the advancing armies and cleared many miles of new inshore channel, so that supplies could be landed right up to the front lines. In the clear waters of the Mediterranean we found reconnaissance aircraft

very useful for locating enemy minefields; but the actual clearance work was constantly hindered by the explosive devices which the enemy attached to his mines to destroy our sweeps.

During June the coastal force craft based on Bastia were, as already told, mainly involved in the assault on Elba; but on the 20th they were freed to resume their offensive against the enemy's coastal traffic to Leghorn. That port was now the chief entry for the German army's supplies on the west coast of Italy, while Ancona served a similar purpose on the east coast.¹ The submarines of the 10th Flotilla, now based on Maddalena in Sardinia, patrolled regularly off the south coast of France, and in June the *Ullor* and *Ultimatum* between them sank five large ships totalling 19,920 tons in those waters.

In the Adriatic an important event was the arrival of Marshal Tito at Vis on the 6th of June, in a British destroyer. It was told earlier how he had escaped to Italy by air during the German drive against his headquarters at the end of May.² Now he was ready to resume direction of partisan activities. He was, however, accompanied by a Russian general; and the latter seems to have suspected him of intriguing with the British for the return of King Peter to his country. Tito himself was generally well-disposed towards the senior British officers controlling our forces in the Adriatic, but the outlook of some of his officers was very different, and the atmosphere on Vis now became somewhat strained. Early in the month our destroyers and coastal craft carried nearly 5,000 Allied and partisan troops to raid the island of Brac; but the time was not yet ripe to occupy it permanently, and the forces soon withdrew. In July raids were repeatedly made against enemy-held Dalmatian islands and the adjacent mainland. The assault forces, consisting of British commandos and Yugo-Slav partisans, were escorted and covered by destroyers and coastal craft from Vis; and their forays undoubtedly increased the insecurity of the enemy's communications along the coastal roads and his hold on the offshore islands. In addition the steady pressure of our surface ships and aircraft against the enemy's seaborne supply traffic continued all the time, on both sides of the Italian mainland. The main German loading ports, which were Genoa and Spezia in the west and Venice and Trieste in the east, were not heavily enough bombed at this time to interrupt loading for prolonged periods; but harassing sweeps by comparatively small numbers of aircraft of the Coastal Air Force—chiefly Beaufighters—produced good results and caused about two thirds of the losses inflicted in the Adriatic. Most of the remainder fell to the M.T.Bs

¹ See Map 29.

² See Part I of this volume, p. 328.

and M.G.Bs, which worked from Vis against convoys of lighters and barges passing through the narrow channels north of Dubrovnik.

The enemy did, however, perform one feat at this time which, although it had no effect on the course of war, indicates that 'Schnorkel' U-boats would have presented us with a serious problem had they ever appeared in numbers in the Mediterranean. U.596, which had been fitted with 'Schnorkel' at Pola, had already broken out once through the Straits of Otranto in April 1944. At the end of July she did so again, in spite of the fact that we had foreknowledge of her movement, and had organised strong surface and air forces to catch her. She then patrolled on the Malta—Benghazi route, though without accomplishing anything, and reached Salamis safely on the 1st of September.¹ Her achievement strongly suggests that it is very difficult to close even a narrow strait to passage by submarines, and that the attempt to do so can absorb a very large effort for little or no return. We now know that the Otranto Barrage of the 1914–18 war accomplished practically nothing; and the similar barrier which we tried to create in 1944, and which was referred to optimistically as 'the unclimbable fence', was certainly no more successful—for all that large numbers of aircraft joined forces with the surface patrols.

In the Ligurian Sea the British and American Coastal Forces based on Bastia employed very similar methods to those of their colleagues in the Adriatic, already described. In July they fought actions on almost every night against the barge and lighter traffic moving along the south coast of France or between Genoa and the enemy-held ports further south. Study of the enemy's records does, however, reveal that our contemporary claims of losses and damage inflicted in both the Adriatic and Ligurian Sea were often far too optimistic. Though the constant harassing of the German convoys by our coastal craft must have given them a good deal of trouble, the actual losses we inflicted were small in relation to the traffic carried on those routes. But reinforcements, both British and American, were now arriving; and with improved training and the extending use of radar it was plain that the pressure of our light forces would be increased.

July brought important changes on land, affecting the prosecution of the offensive operations at sea; for on the 18th the Eighth Army captured Ancona and on the following day Leghorn fell to the Fifth Army. Both ports were severely damaged, and Leghorn presented 'an appalling scene of desolation and destruction' caused by Allied bombing and German demolitions. There were about seventy wrecks in the harbour, both of whose entrances were blocked; and the sheltered

¹ See p. 107 regarding the final fate of this U-boat.

water was thickly sown with mines. By the 25th, however, clearance work had progressed far enough for a small convoy to enter. Ancona proved a rather less formidable proposition, and the first ships unloaded there only four days after its capture. The minesweepers pressed ahead with their customary task of clearing and extending the inshore channels, and with these two important bases in Allied hands the offensive against the diminishing zones of the Ligurian Sea and Adriatic held by the enemy could be further intensified. On the 9th of July the Commander-in-Chief, Mediterranean, moved his main headquarters to Caserta, a short distance inland from Naples; but the advanced headquarters in Naples, which had been set up in the previous January, and was shared with the U.S. Navy, was kept in being.¹ The remainder of the staff, consisting chiefly of the administrative sections, now transferred from Algiers to Caserta, and the association of the Commander-in-Chief with the former place, which dated from the success of operation 'Torch' in November 1942, came to an end. On the 23rd of July King George VI arrived at Naples, toured the harbour, where preparations for the assault on southern France were in full swing, and then inspected a parade formed from the crews of Allied warships and merchantmen.

Meanwhile our sea and air offensive in the Aegean was continuing all the time. About half a dozen British and three Greek submarines of the 1st Flotilla from Malta patrolled off the harbours of Crete and southern Greece, and far up among the islands. They and the coastal craft allocated to the same theatre fought many actions with the small convoys which the Germans tried to run from the Greek mainland to keep their outlying garrisons supplied, and also attacked shipping in the harbours with their guns. In June, however, the *Sickle*, which was making her tenth and final patrol before returning home, was lost in those waters, probably by striking a mine.

We have already seen how the important convoy sent by the Germans to Crete at the end of May met with utter disaster.² During that month most of the supplies which reached the island safely—and they formed only a small part of the cargoes despatched—were carried by caiques; but in supplying the Dodecanese garrisons the enemy did far better, for in that case the sea routes lay at the extreme range of our strike aircraft. Moreover our Middle East air forces were still further weakened at this time by the transfer of seven additional squadrons to the central Mediterranean, and this made it still more difficult to stop the enemy's traffic in the Aegean.

On the night of the 18th–19th of June further variety was added to the many-sided Aegean offensive when Royal Marine raiders

¹ See Part I of this volume, p. 299.

² *Op. cit.*, p. 329.

attacked the former Italian destroyers TA.14 and TA.17 which were lying in Leros harbour, and damaged them both severely with limpet mines. The British Special Boat Squadron and the Greek Sacred Squadron also carried out many raids, and on the 15th of July an attack on Symi led to the surrender of the garrison and the destruction of several small vessels used by the enemy.¹ In that same month Beaufighters sank an important ship off Rhodes, and the submarine *Vox* accounted for another, which was on passage back to Piraeus from Leros. Not the least interesting part of the campaign in the Aegean lies in the importance attached by both sides to individual supply ships, even though they were of no great size. Thus the Germans would go to great lengths to safeguard vessels of quite moderate tonnage, while we for our part would put a big effort into finding and sinking them. The reason was that the strategic situation over a wide and important area could be drastically affected by the safe arrival of one such ship with supplies for an island garrison. Although by the end of July the situation of the Germans in the Aegean had not by any means yet become critical, the tonnage available to supply their garrisons had fallen drastically; and they could no longer look for replacements from the Black Sea. Thenceforth they therefore relied almost entirely on caiques and other small craft. Furthermore the great advances of the Russian armies on land, and Allied bombing of the Roumanian oil fields and Balkan railways, had caused a drastic reduction of the enemy's fuel supplies, which until this time had mostly reached the Aegean by way of the Dardanelles. By the middle of the year the steady pressure of our submarines, surface vessels and aircraft was beginning to drive home yet again the old lesson that an attempt to maintain overseas garrisons across waters which could not be adequately controlled was bound to end in disaster.

While the operations briefly described above were in train further progress had been made in planning for the invasion of southern France. On the 2nd of July General Wilson received his broad directive from the Combined Chiefs of Staff, who instructed him to launch operation 'Anvil' with three divisions making the assault and ten more following up, on about the 15th of August. Detailed planning could now at last get under way. It was carried out at Allied Forces' Headquarters, now established at Caserta near Naples. Generals Wilson and Eisenhower, the two Supreme Commanders concerned, soon found themselves substantially in agreement regarding the purposes of the operation, and also the method of executing it. On the 27th of July the code-name was changed for reasons of security, and Mr Churchill decided that 'Anvil' should be replaced

¹ See Map 31.

by 'Dragoon'—perhaps because he felt the new title expressed his resentment over the pressure to which he had been subjected to make him accept an undertaking in which he did not believe.

The military forces, collectively known as the Seventh Army, were to be commanded by Lieutenant-General A. M. Patch of the American Army. The three assault divisions, all of them American, and a French armoured brigade were to land at 8 a.m. on the 15th of August on five beaches spaced along a forty-five mile stretch of coast to the east of Marseilles between Agay and San Raphael in the north-east and the Bays of Pampelonne and Cavalaire in the south-west.¹ In addition French commandos were to cut the coastal road to the north of the assault area, and also storm the batteries which could enfilade the landings in the Bay of Cavalaire at the southern limit. Meanwhile U.S. Rangers were to seize the off-shore islands of Levant and Port Cros and silence the batteries installed on them. An airborne division, taking off from airfields near Rome, was to drop inland of the assault beaches before the main landings, with the object of holding up the southward movement of German reinforcements. A parachute brigade, which was included in the airborne division, and a Canadian Special Service battalion were the only British Empire military units allocated to the operation. The follow-up forces consisted of seven French divisions, two of which were armoured, under General de Lattre de Tassigny. They were to start landing on the day of the assault. All three American assault divisions came from the Fifth Army in Italy, and were transferred to General Patch's Seventh Army after the fall of Rome. As two French infantry divisions were withdrawn from Italy as well in mid-June the extent to which General Alexander's Army Group was weakened by 'Dragoon' is plain.

The naval planning had meanwhile been started under the direction of Vice-Admiral H. K. Hewitt, U.S.N., whom Admiral Sir John Cunningham, the Commander in Chief, Mediterranean, had placed in charge of the maritime side of the operation. Having taken a prominent part in the Moroccan landings in operation 'Torch' in 1942², and in the invasion of Sicily and the assault at Salerno in the following year³, Hewitt was exceptionally well qualified to turn the experience gained in earlier assaults from the sea to good account. As a first step to the proper co-ordination of the different services' plans the various headquarters were all set up in adjacent buildings, firstly at Algiers and later, after General Wilson's Theatre Headquarters had moved to Caserta early in July, on the waterfront at

¹ See Map 30.

² See Vol. II, Chapter XIII.

³ See Part I of this volume, pp. 118-140 and 156-181.

Naples. These arrangements at once eliminated one of the greatest handicaps from which the planning of the invasion of Sicily and the assault at Salerno had suffered.¹ But other difficulties soon arose. In the first place additional assault shipping had to be provided from America and from General Eisenhower's command in order to mount a three-divisional assault in the Mediterranean; and it was the end of June before the number of ships and craft which would be transferred was firmly known. Furthermore virtually all the landing craft available on the station were fully engaged in supplying and supporting the armies in Italy. Little training for the new operation could therefore be carried out, and it was even hard to estimate how many landing craft would actually be available for it. As the scale of the initial assault was not decided until the 2nd of July, completion of the military plans was much delayed, and this made it impossible for the navies to finalise their own plans. In the end it was decided that all three assault divisions should embark at Naples, and that all assaults should be of the 'shore to shore' type.²

Long before the plans were ready for issue we were developing naval and air bases in Corsica to enable supplies for the expedition to be concentrated further forward than the Italian ports, and to make it possible for shore-based aircraft to give close tactical support. The Mediterranean Tactical Air Force (under Major-General J. K. Cannon, U.S.A.A.F.) was divided at this time between Italy and Corsica, and it was the XII Tactical Air Command of that force which carried the main burden of providing support for the assault forces in 'Dragoon'. Most of its squadrons worked from Corsican airfields, but two bomber wings were stationed in Sardinia. Air escort for the invasion convoys was, as in earlier Mediterranean combined operations, to be supplied by Air Vice-Marshal Sir Hugh Lloyd's Coastal Air Force; but when the convoys reached a point forty miles from the French coast the Tactical Air Force was to take over responsibility. An original appointment was that of Brigadier-General G. P. Saville, U.S.A.A.F., of XII Tactical Air Command as 'Air Task Force Commander'. Under Admiral Hewitt he had been in charge of the air side of the planning, and when the expedition put to sea he sailed with the Admiral in his flagship. A special naval force, consisting of seven British and two American escort carriers with some 220 fighters embarked, was organised to provide air observation for the bombarding warships and close fighter support for the Army until such time as the Tactical Air Force was established in southern France. The carriers were all commanded by Rear-Admiral T. H. Troubridge, who flew his flag in the light cruiser

¹ See Part I of this volume, pp. 117 and 155-156.

² Op. cit., p. 131, gives a definition of 'shore to shore' and 'ship to shore' assaults.

Royalist, and had Rear-Admiral C. T. Durgin, U.S.N., under him in command of the American ships; but the carrier aircraft came under the orders of the Air Task Force Commander once they had flown off the decks.

The Mediterranean Strategic Air Force's part was to neutralise German air power in southern France and to disrupt the enemy's land communications; but the heavy bombers working from bases in southern Italy also made a big contribution towards eliminating the U-boat threat in the Mediterranean.¹ That process had begun in the previous April with a heavy attack on Toulon, which did considerable damage to the naval base and destroyed U.421.² During the succeeding months the bomber raids continued with rising intensity, and on the 5th of July, when 233 American Liberators attacked Toulon, U.586 was sunk and U.642 and U.952 were severely damaged. On the 6th of August the Liberators made another big attack, in which four U-boats which had been damaged on the 5th of July, were destroyed. These devastating raids left only one of the Toulon boats (U.230) fully fit for operations; but U.967, which had been fitted with 'Schnorkel', succeeded in repairing the injuries she had received in the July raids, though she never became operational. It is thus true to say that the heavy bombers not only eliminated the U-boat threat before the invasion convoys sailed, but largely frustrated the enemy's intention to operate 'Schnorkel' boats in the Mediterranean.

A landing in full daylight was a novelty in this theatre, but the commanders decided to accept the risks in order to allow time for really heavy preliminary air and naval bombardments. The sacrifice of the military need to achieve surprise, which had precluded the use of bombardments before the Sicily and Salerno landings, accorded with the strong recommendations which Admiral Hewitt himself had made after the earlier operations.³ Another example of the way in which earlier experiences were now put to good account was the routing of the troop-carrying aircraft well away from the main assault area, thus eliminating the possibility that our own guns would fire on them.⁴

The organisation of the naval bombardment forces followed the principles which had been so successfully applied in 'Neptune'; and the postponement of 'Dragoon' from early June to mid-August enabled many of the well-trained ships which had so recently proved their value off Normandy to reach the Mediterranean in time for the

¹ See Appendix N for the organisation of the Mediterranean Strategic Air Force.

² See Part I of this volume, p. 325.

³ *Op. cit.*, pp. 139-140 and 183-184.

⁴ For the experiences of the airborne forces in 'Husky' and 'Neptune' see Part I, pp. 135-136, and this volume, pp. 45-46, respectively.

new assault.¹ The main targets allocated to the bombarding ships were the fixed gun defences on the coast; but the senior naval officers were empowered to switch their gunfire on to any batteries which proved troublesome.

The naval forces available to the enemy were known to be extremely slender, but small vessels armed with torpedoes can do considerable execution among large, slow and lightly armed transports, especially when they are crowded together in open anchorages off a hostile coast. Thus the strength allocated to support and protect the invasion convoys should not be regarded as wholly disproportionate to the opposition which they might have had to face.² We knew, moreover, that the Germans had assembled a large number of their 'small battle units' in this area, and special precautions had to be taken to deal with them.³ The threat from the Luftwaffe was, in fact, considered far more serious than that presented by the German Navy, and we expected a strong reaction from his torpedo-aircraft and from the wireless-controlled missiles, which had caused us considerable trouble and losses in earlier combined operations—notably off Salerno and Anzio.⁴

Admiral Hewitt's forces were organised into four Attack Groups, known (from north to south) as 'Camel', 'Delta', 'Alpha' and 'Sitka'.⁵ The first three were to land the assault divisions on the mainland, while the last named carried out the attack on the offshore islands of Port Cros and Levant, and also landed 800 French commandos on Cape Nègre, at the western limit of the assault area, to cut the route by which enemy reinforcements would approach from the direction of Toulon. All four groups were commanded by American flag officers (Rear-Admirals F. J. Lowry, B. J. Rodgers, S. S. Lewis, and L. A. Davidson respectively), and to each of them was allocated a gun support force consisting of British, American or French battleships, cruisers and destroyers. Rear-Admiral J. M. Mansfield in the *Orion* commanded the 'Alpha' gun support force, while the other three were all under American officers. Together the four bombardment forces comprised some sixty warships, and the American

¹ The battleships *Ramillies*, *Nevada* (U.S.), *Texas* (U.S.), *Arkansas* (U.S.), five British, three American and two French cruisers, as well as a number of British and American destroyers, took part in both operations.

² The Germans actually had a 'Naval Defence Division' based on Genoa and another on Marseilles. The most powerful ships in them were two ex-French torpedo boats. The other forces consisted only of anti-submarine vessels (32), minesweepers (29), naval ferry barges (29), motor fishing vessels and miscellaneous harbour defence craft (70). The combined offensive value of all these vessels was obviously very small. Of the eight U-boats in Toulon at the beginning of July, five were destroyed in bombing raids (see p. 88) before the 'Dragoon' convoys sailed.

³ Particulars of the various types of 'small battle units' are given in Appendix W.

⁴ See Part I of this volume, pp. 177, 179 and 306-308.

⁵ See Map 30.

cruisers, Admiral Troubridge's escort carriers, and the shore air bases in Corsica all provided spotting aircraft for them. To avoid a repetition of the difficulty experienced in 'Neptune', when bombarding ships often could not gain touch with the ground observers landed with the assault forces, on this occasion specially equipped landing craft were to act as observation posts for ships' gunfire during the early stages of the assault. Close support by gun- and rocket-equipped landing craft was organised on the principles which had served us so well off Normandy. Minesweeping presented fewer problems than in previous combined operations, because the hundred fathom line—the maximum depth in which the enemy could lay deep minefields—was only three to six miles offshore; but we knew that the approaches to the beaches were plentifully strewn with shallow water mines. The minesweeping force consisted of eighty-nine American and fifty British ships; and the latter included all seventeen fleet minesweepers allocated to the operation. Initially the sweepers were divided between the four attack forces, but as soon as the assault phase was over they were all to form a special task group, whose duty it would be to clear the coastal waters as the Allies extended their zone of control, and to eliminate mines from the ports which we expected to capture.

Our preliminary reconnaissance had revealed that the beaches where we intended to land were protected by obstacles of the types with which we had become familiar off Normandy¹, and the Americans had developed several special types of craft for dealing with them. These included wireless-controlled boats carrying heavy explosive charges; but greater reliance was placed on the naval obstacle clearance teams than on these somewhat temperamental mechanical substitutes.

The number of warships, cargo vessels and major landing craft of all types allocated to the assault forces was 881, of which approximately 65 per cent came from the United States Navy, 33 per cent from the Royal Navy and the remainder from other Allied nations, principally France. In addition to these some 1,370 smaller vessels (mostly assault landing craft) were carried or towed to the scene of the landings. A number of other ships and craft joined the operation from various commands while it was in progress, and these have been included in Table 26 (page 91), which shows the allocation of all the forces which took part in operation 'Dragoon'.

Very thorough arrangements were made to train the assault forces in the special requirements and technique of combined operations. We had established a special centre in Salerno Bay earlier in the year and, after the three American assault divisions had been withdrawn

¹ See p. 44.

NAVAL FORCES FOR 'DRAGON'

*Table 26. Operation 'Dragon'—Organisation of Naval Forces
(All ships British unless otherwise stated)*

	CONTROL FORCE (Vice-Admiral H. K. Hewitt, U.S.N.)	SITKA ATTACK FORCE (Rear-Admiral L. A. Davidson, U.S.N.)	ALPHA ATTACK FORCE (Rear-Admiral F. J. Lowry, U.S.N.)	DELTA ATTACK FORCE (Rear-Admiral B. J. Rodgers, U.S.N.)	CAMEL ATTACK FORCE (Rear-Admiral S. S. Lewis, U.S.N.)	GARRIER TASK FORCE (Rear-Admiral T. H. Troubridge)	CONVOY AND A/S GROUP (Captain J. P. Clay, U.S.N.)
H.Q. Ship	1 (U.S.)	—	1 (U.S.)	1 (U.S.)	—	—	—
Battleships	—	1 (French)	1	2 (U.S.)	1 (U.S.)	—	—
Cruisers and A-A cruisers	—	5 (3 U.S.)	6 (1 U.S., 1 French)	3 (1 U.S., 2 French)	6 (3 U.S., 2 French)	4	—
Escort Carriers	—	—	—	—	—	—	—
Destroyers and Escort Vessels	2 (U.S.)	4 (2 U.S., 1 Greek)	6 (4 U.S.)	16 (13 U.S., 3 French)	11 (U.S.)	9 (2 U.S.) 13 (7 U.S., 1 Greek)	59 (20 U.S., 16 French, 2 Greek)
Destroyer- transports	—	—	—	—	—	—	—
Minesweepers	9 (U.S.)	5 (U.S.)	37 (15 U.S., 6 French)	8 (2 U.S.)	29 (10 U.S.)	—	12 (U.S.)
Gunboats	2	—	—	—	—	—	—
Fighter Direction Ships	2	—	1	1 (U.S.)	—	—	—
Attack Transports, L.S.Is and L.S.Gs	—	—	—	—	—	—	—
M.Ls and Patrol Craft	19 (12 U.S.)	5 (2 Canadian)	6 (U.S.)	11 (8 U.S.)	10 (9 U.S.)	—	—
Air-Sea Rescue Craft	16 (15 U.S.)	21 (17 U.S.)	22 (U.S.)	6 (U.S.)	34 (28 U.S.)	6	—
L.S.Ts	—	—	31*	23*	—	—	—
L.C.Is	—	—	56*	34*	—	—	—
L.C.Ts (including Rocket Craft)	—	—	60*	52*	—	—	—
L.C.Ms	—	—	20*	9*	—	—	—
Support Landing Craft (Gun) Tugs, L.C.Cs, L.C.Hs, L.S.Ds, and Misc. Craft	—	—	17*	22*	—	—	—
	1	—	10 (8 U.S.)	17 (10 U.S.)	16 (11 U.S.)	—	—

* The majority of Landing Ships and craft present in the Assault Area on D-Day were American. The following numbers of Allied ships and craft were present but their allocation between the different assault forces has not been preserved:
L.S.Ts, 3 British, 3 Greek; L.C.Is, 27 British; L.C.Ts, 65 British; L.C.Ts (Rocket) 30 British, but 14 were American-manned; Support Landing Craft, 12 British.

from the Italian front in late June and early July, they all went through an intensive programme of rehearsals there or at other centres near Naples. Late in June the additional assault shipping (28 L.S.Ts and 19 L.C.Ts) promised by Admiral King, the American Chief of Naval Operations, arrived in Italy. Patrol vessels and minesweepers from America followed, and at the end of July the transports and landing craft released after the end of 'Neptune' reached their new theatre of operations. Reinforcements from Britain for Admiral Hewitt's gunfire support forces arrived on about the same date, and although none too much time was allowed to some of the ships to prepare for the new task, all were ready when, on the 9th of August, Admiral Cunningham ordered the plan to be put into effect, and named H-Hour as 8 a.m. on the 15th. Rarely can the flexibility of maritime power have been more effectively exploited than by concentrating such large forces in the Mediterranean so soon after executing an even greater operation on another coast nearly 2,000 miles away.

On the 11th the naval Commander-in-Chief set up an advanced headquarters at Ajaccio in the *Largs*, and by that time the convoys had started to move from the various bases at which they had assembled.¹

The assault and follow-up convoys were divided according to the speeds of the ships and craft allocated to them. The fastest (called SF Convoys) comprised American Combat Loaders and British L.S.Is, and also the great majority of the L.C.Is taking part. Convoys capable only of lesser speed (SM) consisted mainly of L.S.Ts, while the slowest convoys (SS) included most of the L.C.Ts and support landing craft. Other convoys were organised to carry the 'Special Service Force' of U.S. Rangers and French commandos from Naples to the 'Sitka' sector, and to lift the French armoured brigade from Oran. The main assault forces all sailed from Naples between the 9th and 13th of August; but the L.C.I. and L.C.T. convoys had to call at Corsican ports on the way, to replenish with fuel. Two French divisions, which formed the first follow-up force, left Taranto on the 11th, and overtook a convoy with their stores and equipment, which had sailed a day earlier. The remainder of the French follow-up forces sailed from Oran later.

The four gun support groups, which had assembled at Palermo ('Camel'), Taranto ('Delta'), Malta ('Alpha') and Naples ('Sitka'), sailed on the 11th or 12th and met the fast assault convoys at sea. Admiral Troubridge's carrier force, which had also concentrated at Malta, put to sea on the 12th. Special routes from all the bases to the scene of the assault were laid down, and each convoy or naval force

¹ See Map 29.

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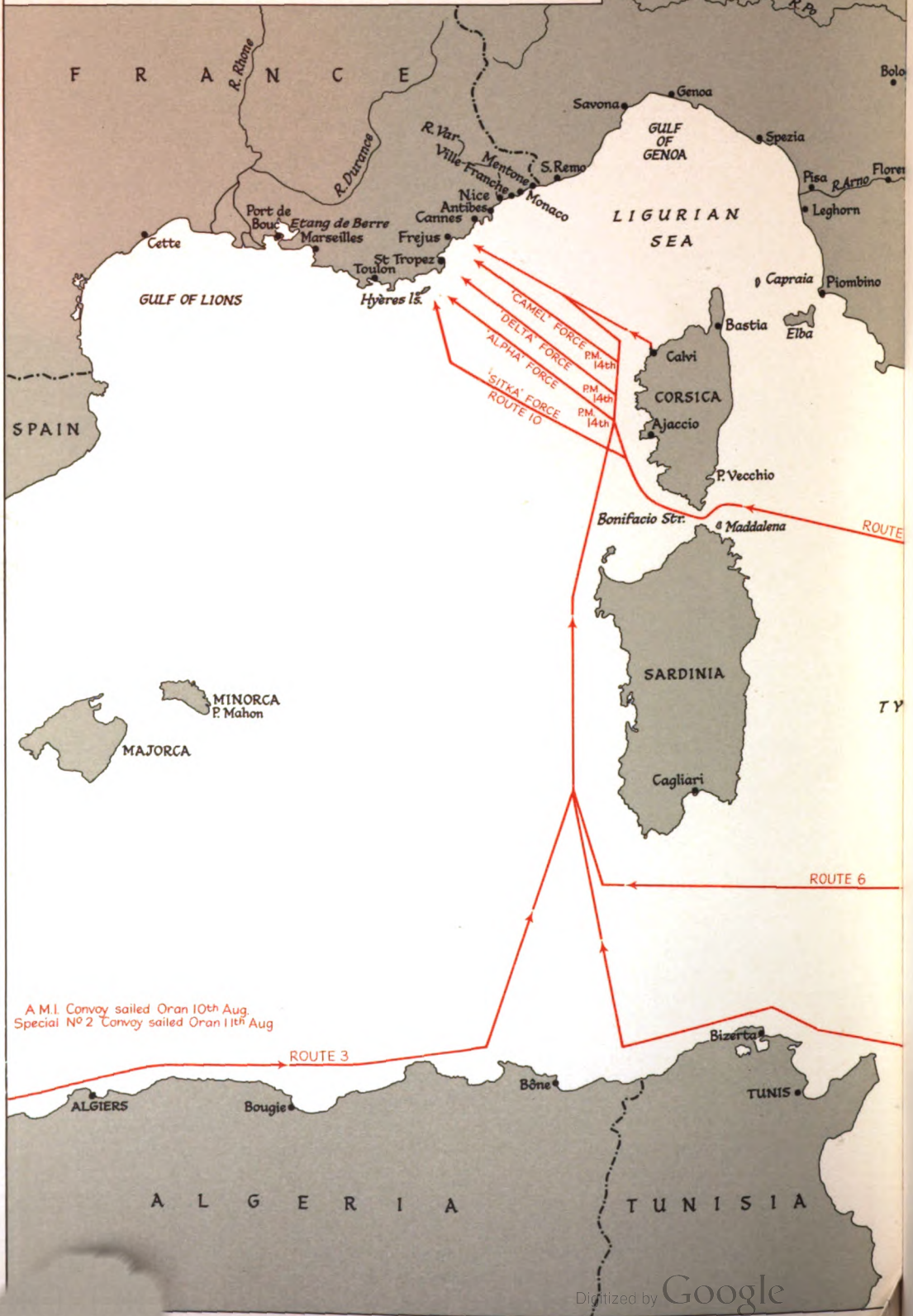
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THE INVASION OF THE SOUTH OF FRANCE OPERATION "DRAGON" 15th AUGUST 1944 ASSAULT CONVOY ROUTES



A.M.I. Convoy sailed Oran 10th Aug.
Special No 2 Convoy sailed Oran 11th Aug



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THE INVASION OF THE SOUTH OF FRANCE

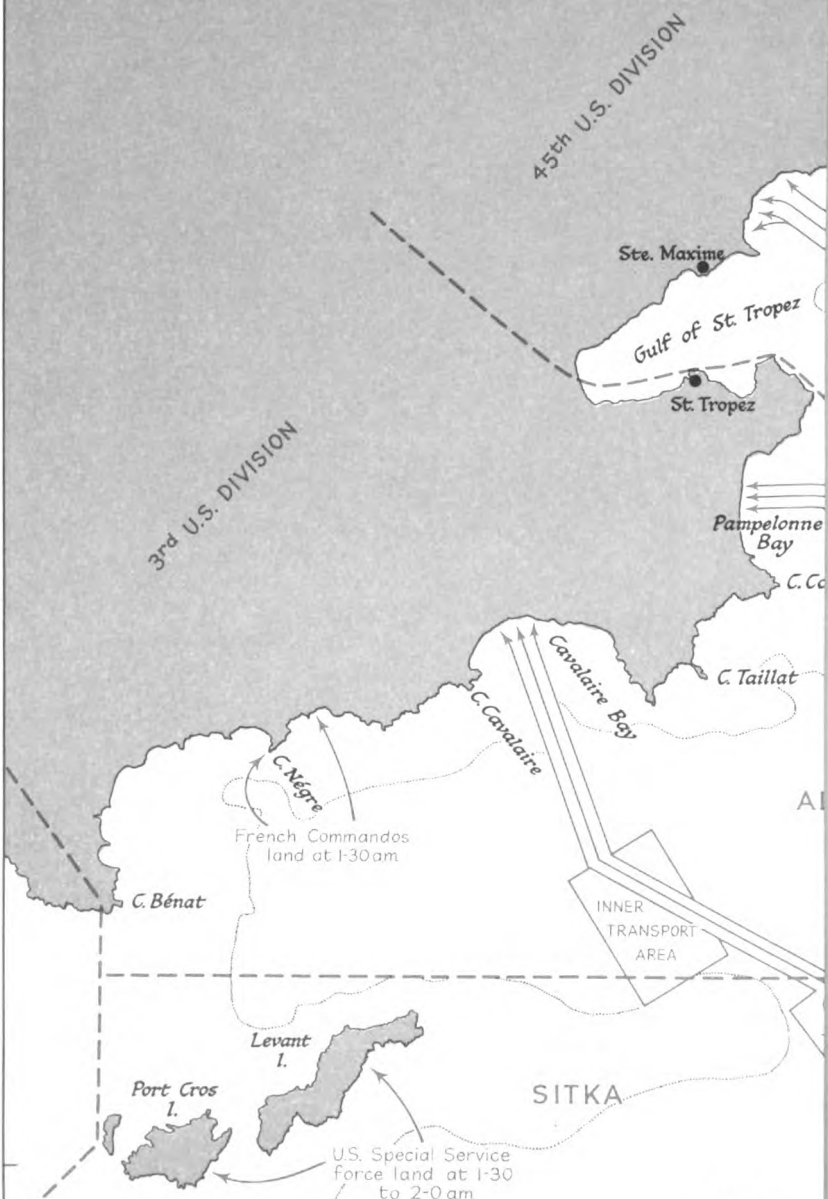
15th August 1944

OPERATION "DRAGON"

Showing the assault areas

Assault sector boundaries.....
Assault force routes.....
100 Fathom line.....

FIRST AIRBORNE
● Le Muy
TASK FORCE DROPPING AREA



had to pass through certain positions on these routes at the times laid down in Admiral Hewitt's orders. The general organisation and routing of the convoys and naval forces are shown in Table 27 (pages 94-95).

The air plan had been put into effect well before the assault convoys sailed, and since late April the strategic bombers from Italy had been attacking communications over a wide area of southern France. The effectiveness of this campaign is shown by the fact that only one of the many bridges over the rivers Rhone, Durance and Var leading towards the assault area survived. Next, from the 10th to the 14th of August, the strategic and tactical bombers and fighters attacked the defences of the assault area and also, to conceal our actual intentions, distributed a good proportion of their loads on targets as far west as Cette and as far east as Genoa.¹ Finally from 5.50 to 6.30 a.m. on D-Day some 1,300 aircraft were to concentrate against the forty miles of coastline where the troops were actually to land.

By the afternoon of the 14th the main convoys from Naples had passed through the Straits of Bonifacio, and turned north so as to suggest that their destination was near Genoa. At 6.18 p.m. Admiral Cunningham, who was watching their progress from the destroyer *Kimberley*, made the signal to 'carry out operation "Dragoon"', and after dark all convoys altered to the west towards their true destinations. They all reached their release positions on time and without loss. At first daylight the carriers started flying off, and shore-based fighters were also overhead and in touch with the special fighter direction ships.

Meanwhile other movements, designed to mislead the enemy regarding our true intentions, were in progress. One diversionary group sailed from Corsican ports on the 14th. Included in it were patrol craft carrying a small force of French commandos, who were to land on the eastern flank of the assault area between Cannes and San Raphael to cut the coastal road. After detaching the craft in which the commandos were embarked the main group steered towards Genoa, while filling the atmosphere with a wide variety of radar and radio signals, so as to simulate the presence of a much larger force. After dark that evening certain ships took up station to act as beacons for the troop-carrying aircraft, while the rest of the force turned west and adjusted its course and speed to arrive off Antibes at 4.20 a.m. on the 15th. Then the shallow-draft river gunboats *Aphis* and *Scarab*, which had done good service since the early days of the war in the Mediterranean Fleet's famous Inshore Squadron², and which had again quite recently proved their value in the

¹ See Map 29.

² See Vol. I, pp. 422 and 520.

OPERATION 'DRAGON', ASSAULT CONVOYS

Table 27. Operation 'Dragon'—Organisation and Sailing of Convoys

I ASSAULT AND FIRST FOLLOW-UP CONVOYS

Convoy Designation	Departure Port and Date	Speed (Knots)	Principal Composition	Routes (See Map 29)	Troops Embarked Elements of—	Assault
SF1 SF1A SF1B	Naples, 13th August	12	Combat Loaders (U.S.) and L.S.Is (Brit.)	1	36th Div. (U.S.) 45th Div. (U.S.) 3rd Div. (U.S.)	'Camel' 'Delta' 'Alpha'
SX1	Naples, 11th August (Staging through Corsica)	14	L.S.Is (Brit.) Destroyer— transports (U.S.)	1 & 10	1st Special Service Force (U.S.) French Commandos	'Sitka'
SF2 SF2A SF2B	Naples, 12th August (Staging through Corsica)	11	L.C.Is	1	36th Div. (U.S.) 45th Div. (U.S.) 3rd Div. (U.S.)	'Camel' 'Delta' 'Alpha'
SM1 SM1A SM1B	Naples, 12th August	8	L.S.Ts, Tankers and Tugs	1	36th Div. (U.S.) 45th Div. (U.S.) 3rd Div. (U.S.)	'Camel' 'Delta' 'Alpha'
SS1 SS1A SS1B	Naples, 9th August	5½	L.C.Ts, Support Landing Craft	1	36th Div. (U.S.) 45th Div. (U.S.) 3rd Div. (U.S.)	'Camel' 'Delta' 'Alpha'
Special No. 1	Palermo to Ajaccio Shuttle Service by cargo vessels. Starting 14th August					
Special No. 2	Oran, 11th August	12	Fast L.S.Ts and 1 L.S.I. (Brit.)	3	French Armoured Brigade	Follow-up
TF1	Taranto, 12th August	12	L.S.Is (Brit.)	2	1st French Infantry and 3rd Algerian Infantry Divisions	Follow-up
SM2	Naples, 13th August	9	Storeships and Tankers	1	—	—
TM1	Taranto, 10th August	7½	Storeships and Tankers	2	—	—
AM1	Oran, 10th August	7½	Store and Ammunition Ships, and L.S.Ts	3	—	—

OPERATION 'DRAGON', NAVAL FORCES

II NAVAL FORCES

Function	Departure Port and Date	Routes (See Map 29)	Assault
Gun Support Group	Palermo, 13th August	R/V with Convoy SF1 6	'Camel'
Gun Support Group	Taranto, 11th August	R/V with Convoy SF1A 2	'Delta'
Gun Support Group	Malta, 13th August	R/V with 'Delta' Group 2	'Alpha'
Gun Support Group	Naples, 12th August	R/V with Convoy SY1 1 & 10	'Sitka'
Carrier Force	Malta, 12th August	2	—
Diversionary Forces	Ajaccio, Bastia and Calvi, 14th August	Direct	—

assault at Elba¹, bombarded the coast defences well to the east of the true assault area for half an hour with their 6-inch guns. That completed the eastern diversionary force's pyrotechnics, and the ships then dispersed to other duties in the assault area. Meanwhile the western group, which had also started off from Corsica, had been putting up a similar display to the south of the Hyères Islands. Such is the ingenuity of modern wireless technique that its few small craft were able to simulate a convoy twelve miles long and eight miles wide. To add still further to the enemy's perplexity, at 4 a.m. on the 15th, 300 dummy paratroops rigged with demolition charges were dropped to the north-west of Toulon. Though it is hard to gauge the total effect of all these ruses, they do seem to have caused confusion among the German authorities responsible for the defence of this stretch of coast; but the enemy actually possessed such slender forces that it probably made little difference whether they guessed our intentions correctly or not.

The first sea action fought by the assault forces took place at 5 a.m. on the 15th, when the American destroyer *Somers* encountered two small German escort vessels, and quickly sank them both; but the first landings, by French commandos and American special service troops on the mainland at Cape Nègre and on the offshore islands of Port Cros and Levant had meanwhile taken place in darkness. They did not meet serious resistance, and although heavy bombardment ships, including the *Ramillies*, were called up to help in the reduction of Port Cros and to break up counter-attacks against the French commandos on the mainland, the 'Sitka' force quickly eliminated the threat to the main invasion force from that flank. The battery on Levant Island, whose early capture had been one of the primary objects of the 'Sitka' assault, was actually found to be a dummy.² One interesting experience gained from the landings on the rocky offshore islands, was that in such conditions the British assault landing craft (L.C.As) were greatly superior to the equivalent American vessels (L.C.V.Ps).

In the adjacent 'Alpha' sector, at first daylight British and American minesweepers searched the offshore waters where the troop transports were to hoist out their landing craft; but the only mines found were on the dividing line between 'Sitka' and 'Alpha', and it was the former force's sweepers which actually cleared them. The 'Alpha' group's sweepers then cleared boat lanes to within half a mile of the beaches, where the shallow-draft vessels took over and carried the safe lanes right inshore. Shore batteries opened fire during the sweeping, but they did no damage; and five small German

¹ See p. 80.

² See Map 30.

patrol craft encountered in Pampelonne Bay were all sunk by the British minesweepers. Meanwhile the final air and surface ship bombardments were in progress, and just before touch-down the rocket craft, which once again proved themselves to be one of the most effective of British developments for combined operations, poured their salvos on to the beaches. What Admiral Hewitt called 'an overwhelming concerted blow of only one hour and fifty minutes duration' from the sea and air enabled the assault troops to land with very few casualties. The two beaches in the Bays of Cavalaire and Pampelonne allocated to the 'Alpha' force were quickly seized and consolidated, and the troops moved so fast inland that, once the preliminary bombardment was over, there were few calls for fire support. Some of the bombarding ships did, however, switch to the 'Sitka' sector to help support the French commandos, and to subdue batteries on the coast and on the island of Port Cros.

The 'Delta' force was to land on four small, closely adjacent beaches a short distance north-east of Sainte Maxime. The coast defences here were strong, and included powerful batteries on each side of the entrance to the Gulf of St Tropez.¹ These were the special targets allocated to the American battleships *Texas* and *Nevada*, but the *Ramillies* also fired a few of her 15-inch shells at one of the southern batteries. The sea and air bombardments were so heavy and effective that once again losses among the assault troops were insignificant. During D-Day eleven large ships, thirty L.S.Ts, 41 L.C.Ts and 36 L.C.Is landed 33,000 men and 3,300 vehicles over the 'Delta' beaches. Even allowing for the opposition having been so feeble, and for the fact that there were no beach obstacles here, these results were a fine accomplishment by Admiral Rodgers's force.

In the last sector, 'Camel', slightly more serious difficulties were encountered. Four beaches had been selected, but we believed the defences on two of them to be exceptionally strong, and so decided not to assault them until after 'H-Hour'. One of these beaches, in the Gulf of Fréjus (where Napoleon had landed on the 1st of March 1815 after his escape from Elba) was to be attacked on the afternoon of D-Day, by which time we expected to have rocket-craft available from the 'Alpha' and 'Delta' sectors; while we hoped to capture the other beach from the landward side. The assault opened shortly after midnight with the landing of French commandos near Théoule, to cut the main road communications from the east. The assault convoys all arrived on time, no mines or underwater obstacles were found, and the preliminary bombardments had successfully subdued the defenders. The two beaches actually assaulted were quickly seized, and although enemy shell and machine-gun fire caused some

¹ See Map 30.

losses and damage among the landing craft, the issue was never in doubt. Towards noon sweepers began to clear the approaches to the Gulf of Fréjus, preparatory to the afternoon assault on the beach at its head. They came under heavy fire and, although bombarding ships and heavy bombers were called up, the defenders were still resisting strongly when the assault craft began to move in. In view of this, of the presence of a dense minefield in the Gulf, and of the good progress meanwhile made by the other assault forces, at 2.15 p.m. Admiral Lewis cancelled the landing, and switched the forces to one of the beaches which we already held firmly. Heavy bombardments continued that evening, and the beaches in both the Gulf of Fréjus and the Rade d'Agay were captured by attacks from the landward side before the close of D-Day. Not until the 17th were all the moored and magnetic mines cleared from the Gulf of Fréjus, and in course of the work four small sweepers were sunk.

On the evening of D-Day there took place the only enemy air attack on our shipping. A glider bomb, whose control signals many ships tried unsuccessfully to jam, destroyed an L.S.T. and two assault craft off San Raphael.

Though the delay in capturing the Gulf of Fréjus necessitated alterations to the plans, and the French armoured brigade could not land until next day and had to be switched to the 'Delta' sector, the attack in the 'Camel' sector was never in serious difficulties. Once again the bombarding ships and, in particular, the rocket-craft proved their value. Admiral Hewitt's report records 110 shoots by individual ships in the pre-assault bombardments, and another forty-nine during the three days following the landings. Spotting was mainly done by aircraft, but the shore fire control parties observed for a good proportion of them. The expenditure of ammunition was enormous. Thus on D-Day the American battleship *Arkansas* fired 383 rounds of 12-inch and the British cruiser *Argonaut* 394 rounds from her 5.25-inch guns.

While the sea-borne assaults on the beaches were in progress the airborne operation, designed to block the movement of German reinforcements towards the assault area from the north, had taken place. The troop-carrying aircraft took off from bases near Rome in the small hours of the 15th of August, and passed over the three beacon ships which had been stationed to assist their navigation. In spite of dense fog over the land the majority of the paratroops landed in the correct dropping zone near Le Muy.¹ In all, 448 troop-carrying aircraft and 408 towed gliders took part, and losses were insignificant. This time there was not a single instance of Allied ships or land forces firing on the transport aircraft.

¹ See Map 30.

Admiral Troubridge's escort carriers arrived off the assault area early on the 15th, and quickly flew off the first aircraft to patrol over the beaches and spot for the bombarding ships. Each of the nine carriers had about twenty-four aircraft embarked. In the case of the seven British ships the majority were Seafires; and although these 'aristocrats of the sky', as Troubridge called them, were splendid in air combat the American fighters proved superior for the purposes in hand, because of their longer endurance and lesser liability to damage when making deck landings.¹

Troubridge's own group of five carriers flew 170 sorties on D-Day, but the aircrews encountered no enemy fighters, and the greater part of their work took the form of bombing and machine-gun attacks on enemy positions. Each night the carriers withdrew to the south of the assault area, returning at daybreak to resume their patrols and offensive missions. The rapid advance of the ground forces, however, soon reduced the number of calls for supporting gunfire, and so the demand for air spotting. Moreover by the 19th the Tactical Air Force fighters had established themselves on shore, and were able to take over responsibility for the defence of the beaches. Thereafter the carriers flew many sorties to attack enemy columns retreating northwards. From the 19th to the 27th Admiral Troubridge and his subordinate commander, Rear-Admiral Durgin, U.S.N., took their ships back in turn to Maddalena to refuel and rearm, and on the latter date the Task Force Commander released the British carriers, which sailed at once for Alexandria. Admiral Durgin stayed on for another two days, after which the carrier force was disbanded. Between them the nine carriers lost forty-three aircraft, many of them through forced landings in the sea; but there were in addition a large number of deck-landing accidents in the British ships. In his report on the operation Admiral Troubridge stressed the superiority of the American fighters for this type of work; but he also urged the need for better trained aircrews. One of the most intractable problems which we had to face during the war was that the great expansion of the Fleet Air Arm always tended to outstrip our training capacity.

The almost complete lack of enemy air opposition, and the vast Allied superiority in shore-based air support, make it difficult to assess the value of the carrier air support in operation 'Dragoon'; since had none been provided the outcome of the operation would hardly have been different. None the less the close and successful

¹ The deficiencies of the British fighters were the outcome of the makeshift policy adopted towards the Fleet Air Arm; for the Seafires were hastily modified R.A.F. Spitfires, and their frail undercarriages made them quite unsuitable for carrier work. The American fighters, on the other hand, had been specially designed for such purposes, and were in consequence far more sturdy.

co-operation of the carrier aircraft with the bombarding ships, and with the land forces who called for their assistance, does suggest that in the early stages of a big combined operation this form of air support has much to commend it. Moreover on this occasion the Army's rapid advance inland soon took it outside the range of aircraft working from Corsica, and although they transferred rapidly to airfields on the French mainland, for ten days the carrier-borne aircraft provided all the support available to the Army at short call. This in itself was a substantial accomplishment.

By the evening of the 17th, when the assault phase of 'Dragoon' may be said to have ended, the American VI Corps and French II Corps had advanced well beyond their initial objectives, and the former had linked up with the airborne troops, who had meanwhile concentrated and were preparing to drive eastwards towards Cannes and Nice. Nowhere had resistance been severe, nor were any dangerous counter-attacks launched by the enemy. Naval losses had been extremely light, and had amounted to no more than one L.S.T. and eight small vessels and landing craft sunk. Minesweeping was still in progress, but the arrival and unloading of the build-up forces was proceeding with little hindrance. At the close of this day Admiral Hewitt estimated that 86,575 men, 12,520 vehicles and 46,140 tons of stores had been landed over the beaches. Even allowing for the weak enemy resistance such an achievement within sixty-four hours of the first soldier stepping ashore is a fine tribute to the organisation of the naval forces, and to the energy with which Admiral Hewitt's purposes were carried out. Also on the 17th the 'Camel' and 'Alpha' bombardment ships were released, and thereafter Admiral Davidson, U.S.N., took over all responsibility for providing gun support. He re-organised his forces to keep two battleships, eight cruisers and about a dozen destroyers off the coast, while the remaining ships returned to Algiers, Palermo or Naples until needed to relieve other ships in the assault area.

By the 20th of August the French troops who had swung west after the assault had encircled Toulon and were reaching out towards Marseilles. The second phase of 'Dragoon' thus included the assaults on the two great ports whose capture had taken such an important place in the original plans, as well as the reinforcement of the armies over the original beaches. The success of the latter was, as always in a combined operation, greatly dependent on the weather; and the strong easterly winds which started to blow on the 21st served as a pointed reminder that the autumn, which commonly produces severe gales in those waters, was approaching. Admiral Hewitt therefore took special precautions to safeguard the landing craft, pontoon causeways and other vulnerable equipment from storm damage. His foresight proved both timely and effective when, on the 2nd of

September, a short but violent storm struck. Only two landing craft were lost and some two dozen others damaged. It thus came to pass that bad weather never seriously impeded the build-up. Nor did the enemy's spasmodic sea and air attacks do more than give the covering forces the chance to show their superiority. Thus on the 18th and again on the 19th of August small forces of German-manned assault boats which approached the transport anchorages from the east were severely handled, and three of the attackers were sunk.¹

On the 17th of August U.230, the only one of the three remaining Toulon U-boats which could be made fit for sea, left harbour with orders to patrol off the entrance and then make for Spanish territorial waters. As, however, she was without 'Schnorkel', and could only make shallow dives, there was little hope of her sortie producing any results. Though our patrols never detected her, she met her end four days later, when she grounded in the Gulf of Hyères while charging batteries close inshore, and was blown up by her crew. On the 19th the Germans themselves destroyed U.466 and U.967, the last of the Toulon boats, and so ended the U-boat campaign in the western Mediterranean.

Meanwhile the Germans had decided to employ the 'small battle units' off the French coast. Allied intelligence had, however, gained wind of the intention, and strong surface patrols were therefore established off the bases such as Monaco and Villefranche from which we expected them to work. At the end of August the Germans shifted the headquarters of the command controlling these craft to San Remo, and early in September thirty one-man torpedoes ('Marders') arrived there.² Their first sortie took place on the night of the 4th-5th of September, when all but one of the five 'Marders' which attempted to attack the 'Dragoon' support ships were sunk. Five nights later a second attempt, made in co-operation with assault craft, proved even more expensive to the enemy, and ten 'Marders' were lost. The next weapons to arrive were one-man submarines ('Molch'); but they proved no more successful. From the first operation by ten of them on the 25th-26th of September only two returned, and they were not employed again. Meanwhile San Remo was being bombarded by Allied warships almost daily, and this caused the enemy small battle units further losses and disorganisation. Although the end of their story had not yet been reached, and we shall return later to the renewal of their efforts during the last three months of the

¹ These were the ex-Italian one and two-man craft which had formerly operated under Prince Borghese in the 10th M.A.S. Flotilla. See Part I of this volume, p. 320.

² See Part I of this volume, pp. 321-322 regarding the withdrawal of these craft from Italy after their failure off Anzio in April 1944. Appendix W contains particulars of all German 'small battle units'.

year, the reader should here note that they had no effect at all on operation 'Dragoon'.

To return to the assault area, by the beginning of the last week of August it was clear that the French Army would soon isolate Toulon and Marseilles, and that the early capture of both ports was likely. We were however anxious lest German demolitions and mining should for some time deprive us of their full use—as had recently happened in the case of Cherbourg¹; and to mitigate the consequences of such action by the enemy the Allied commanders decided to seize Port de Bouc, some twenty miles west of Marseilles.² Half a dozen cargo ships could unload there at the same time, and the port gave access to the Etang de Berre, where many ships and craft could lie safely at anchor. It was, moreover, an important port of discharge for oil in normal times, and was well equipped with storage tanks, pumps and transport barges, none of which had so far been damaged by the enemy. Minesweeping in the approaches started on the 24th, and although a bombarding force had to be called up to silence the batteries which were shelling the sweepers, a channel was open three days later. The block-ships which the enemy had sunk were promptly removed, and in September a large proportion of the fuel and some of the stores needed by the Army were discharged in Port de Bouc.

Meanwhile, the clearance of the approaches to Toulon and Marseilles had begun, and by the last day of August channels to both ports were declared safe. Naval operations against the defences of Toulon started on the 19th, under the command of Admiral Davidson. To deal with the very powerful batteries installed on either side of the entrance, which included two twin 340 mm (13·5-inch) naval mountings on the St Mandrier peninsula, he had the battleships *Nevada* (American) and *Lorraine* (French), six cruisers (3 French, 2 American and 1 British) and about half a dozen destroyers; but reinforcements, including the battleship *Ramillies* and two more cruisers, arrived on the 25th. In spite of the great strength of the force assembled, and air spotting being generally available to the bombarding ships, they found it very difficult to silence the batteries. From the 19th to the 28th constant bombardments were carried out off Toulon and, to a much smaller extent, off Marseilles. No less than 147 separate shoots by battleships, cruisers and destroyers took place against the St Mandrier batteries alone, and the expenditure of ammunition was again very high. The medium bombers (Marauders) carried out many attacks on the same targets and other coast defences between the 13th and 20th of August; but the garrison of St

¹ See p. 70.

² See Map 29.

Mandrier did not surrender until the 28th, the day after French troops, who had overcome very stubborn resistance, had entered the town and port of Toulon. Subsequent inspection showed that, although many of the smaller batteries had been put out of action by the bombardments, and the ground around the heavy turrets on the cape was deeply scored by shell and bomb explosions, only one direct hit (probably by a bomb) had been obtained; and one of the four guns was actually still serviceable at the time of the surrender.

The defences of Marseilles proved a less tough proposition than those of Toulon, and bombardments were on a correspondingly reduced scale. Allied troops entered the town on the 23rd, and the final act of surrender took place on the 28th, almost simultaneously with that at Toulon. The sweepers then set to work to clear both ports. Toulon was declared entirely safe on the 12th of September, but work at Marseilles was not finally completed for another fortnight. Meanwhile the restoration of the capacity of both ports was taken in hand energetically, the Army concentrating on Marseilles and the Navy on Toulon. Damage was far less than we had expected, and before the end of September many unloading berths were available in both ports. Supplies and reinforcements for the Army thereafter flowed through them in immense quantities.

While the great naval base of Toulon and the commercial port of Marseilles were thus being made ready for Allied use, the build-up and supply of the Army over the original beaches continued steadily, and with little hindrance from the enemy. Early in September L.S.T. ferry services started to run to and from Oran and Naples. Most of the unloading was done by small craft such as L.C.Ts, L.C.Ms, and by the invaluable and versatile DUKws; and the organisation for servicing and maintaining the flotillas, and for expediting their work, reached a very high pitch of efficiency. Meanwhile as the land forces advanced eastwards the unrelenting minesweepers cleared the channels into each port captured. A few figures must suffice to illustrate the scope and scale of this essential work. During the forty days of the force's existence the entire south coast of France was either cleared of mines, or the dangerous waters were located and marked. Six ports were cleared, and 550 mines—the great majority of them of the moored contact type—were swept. No important ship in the invasion fleet was lost by striking a mine, and losses among the sweepers themselves were astonishingly small. It was, however, fortunate that the Germans did not here use the pressure-operated mine, which had caused us so much trouble in the invasion of Normandy.¹

¹ See pp. 54 and 69.

To conclude the story of operation 'Dragon', on the 6th of September the 'Camel' attack force was disbanded, and Rear-Admiral Rodgers took over Admiral Lewis's responsibilities. Three days later the 'Alpha' beaches were closed, and Admiral Lowry also left the assault area. At the same time Admiral Hewitt, in his flagship the *Catoctin*, moved to Toulon. On the 13th a strong force of French warships, including the battleship *Lorraine* and five cruisers, made a ceremonial entry into the port. Admiral Sir John Cunningham was present flying his flag in the cruiser *Sirius*; but it was mainly a French occasion, and must have been a moving one to the officers and men who had waited so long for the reconstitution and reunification of their services.

The 'Delta' and 'Camel' beaches were closed on the 16th and 25th of September respectively, and on the latter date Admiral Hewitt's command came to an end. The unloading figures at the time totalled 324,069 men, 68,419 vehicles, 490,237 tons of dry stores and 325,730 barrels of wet stores. After the end of operation 'Dragon' a greatly reduced support force remained in the south of France under Admiral Davidson, but the majority of the warships dispersed to other stations. Whether one agrees or disagrees with the strategic decision to launch 'Dragon', its outstanding success will stand for all time as a great feat of planning and organisation.

The decision to divert considerable forces from General Alexander's command in Italy to 'Dragon', rather than concentrate on the 'middle-European' strategy which Mr Churchill favoured, is likely to remain a subject for historical controversy. Here it may be appropriate to consider the differences of outlook from which the disagreement stemmed, with particular regard to their influence on the conduct of maritime war. In the first place it must be recognised that the centuries of British experience of warfare based on a maritime strategy, and the grim memories of the costly deadlock in France and Belgium in the 1914-1918 war, probably combined to make our leaders search, perhaps instinctively, for a means to victory by attacking the periphery of the enemy's territory rather than by making a frontal assault. On the other hand to the Americans, with their vast industrial resources entirely untouched by enemy bombing, with excellently designed equipment pouring off their production lines, and with their ebullient energy unimpaired by years of hardship and anxiety such as Britain had endured, it seemed that they only had to strike hard enough at their chosen point to inflict final defeat on Germany. Had such a victory been achieved soon after the forces which landed on the Riviera coast had joined with those landed in Normandy, the American strategy would certainly have justified itself; and argument on the possible advantages of the alternative strategy, which are in any case purely academic, would have

lost all purpose. But such a victory was not gained until nearly nine months later, and after vast additional destruction had been inflicted on war-torn Europe, and heavy losses of human life had been suffered by the Allied nations as well as by their enemies. Thus it seems likely that, even though no final conclusions can ever be reached on so hypothetical a matter, the possibilities of the 'middle European' strategy will continue to exert a fascination on historians and biographers. To this writer two points seem beyond dispute. The first is that the French Army, which had re-formed in North Africa, could only have been employed in France; and that, if it was to be employed at all, it was essential for the other Allies to equip and transport that army, and to support it after it had landed. The second is that either Marseilles, Bordeaux or Brest had to be captured by the end of August 1944 at the latest. Thus far, therefore, the American strategy undoubtedly appears correct. It is when one considers the costliness of the last nine months of the war in Europe, and especially the state of that unhappy continent ten years after its conclusion, that doubts arise regarding whether the probable course of events was not foreseen more accurately by Mr Churchill than by anyone else. His long experience and historic insight strongly suggested that the Danube valley was the key to the control of central Europe, just as the River Scheldt was the key to control of immensely important territories in the north-west. In August 1944 we sacrificed the possibility of exploiting the former, and in the following autumn we were very slow to exploit the latter.¹ Though it is true that the supply of a substantial force striking north-east from the Istrian ports would have been difficult, and the American military planners believed it would be impossible, no amount of argument is ever likely totally to eliminate doubts regarding the consequences of American insistence that concentration in the west should be carried to the point of weakening the only front from which we might have achieved Mr Churchill's purpose; and posterity may well judge that our combined resources were in fact sufficient to support the launch of a reinforced French Army against Marseilles or Bordeaux whilst yet maintaining the momentum of the advance towards the Po valley—and beyond it into the heart of central Europe. It is at least plain that to Hitler such a strategy appeared highly dangerous; for at a conference on the 31st of July he expressed himself in very strong terms on the subject. 'The most necessary of our defence measures' he declared 'is and remains the security of Hungarian territory. Hungary is vital for food supplies, for raw materials such as bauxite and manganese, and for its communications with south-east Europe. Any English attempt,

¹ See pp. 147-153.

therefore, to land in the Balkans or in Istria, or on the Dalmatian Islands, is thus highly dangerous, because it can have immediate effects on Hungary'.

We must now review other events in the Mediterranean, which had taken place during the preparations for and the launching of 'Dragoon'. One by-product of the successful landing in southern France was that it put an end to the night sorties by German bombers against our convoys moving along the north African coast, which had caused us considerable trouble and some losses during the early months of 1944.¹ The scale and frequency of these attacks had declined when the enemy transferred some of his bombers to northern France at the time of the invasion of Normandy. In consequence of this no attacks took place in June, and only one in each of the two following months; and in neither of them did the merchantmen suffer any damage. The last attempt took place on the 1st of August, when some forty torpedo-bombers unsuccessfully attacked convoy UGS.48 off Bougie. Soon afterwards all the remaining enemy strike squadrons were forced to abandon their bases in southern France. Thus, as on so many previous occasions, did a success on land produce favourable developments at sea.

The last submarine patrols off the Riviera coast by the 10th Flotilla took place in August, and in the following month that famous force, which had done such fine work in the central Mediterranean ever since it was formed at Malta in September 1941², was paid off. During the three years of its life its boats had inflicted great damage on the enemy, especially during their long campaign against the supply traffic from Italy to North African ports.³ Now some of the surviving boats were ordered to Britain, while others joined the 1st Flotilla at Malta to strengthen the offensive in the Aegean. In those waters few important targets could now be found; but many successful attacks were made on convoys of caïques, and on the 9th of August the Greek submarine *Pipinos* sank the former Italian torpedo-boat TA.19 off Samos.

The redistribution of our submarines at this time provides the opportunity to survey their entire work in the Mediterranean, which was now drawing to a close. Between June 1940, when Italy entered the war, and the end of 1944 British submarines, and Allied submarines working under British control, sank 286 ships totalling

¹ See Part I of this volume, pp. 310-311 and 324-325.

² See Vol. I, p. 526.

³ The total losses inflicted by the 10th Flotilla amounted to 648,629 tons, including ten U-boats sunk.

1,030,960 tons.¹ Of enemy war vessels they sank four cruisers², nine destroyers, eight torpedo-boats and a corvette; but perhaps the most important of their successes was the destruction of no less than sixteen Italian and five German submarines. As an anti-submarine vessel the submarine plainly had great possibilities. The price paid by the submarine service for these successes was, however, heavy. Forty-five British, four Greek, two French and one Italian submarine did not return from Mediterranean patrols.

The month of September also saw the end of the U-boat campaign in the eastern Mediterranean. On the afternoon of the 18th the Polish-manned destroyer *Garland*, which was with a powerful squadron of escort carriers, cruisers and destroyers then on its way to carry out offensive sweeps in the Aegean³, sighted a wisp of smoke in the Anti-Kithera Channel to the north of Crete at the remarkable range of eight miles.⁴ The alertness of her lookouts was rewarded when, on closing the position, the source of the smoke was identified as a 'Schnorkel' funnel. Other destroyers soon joined the *Garland*, and after a night-long hunt they sank U.407 early on the 19th. She was the last German submarine to be sunk at sea in the Mediterranean; but five days later American bombers destroyed U.565 and U.596 in Salamis, thus accounting for the last of the eleven U-boats which had been in the theatre at the start of the period covered by this chapter.

Between October 1942 and June 1943 the Germans had, by a remarkable feat of improvisation and organisation, commissioned six small (300-ton) U-boats at Galatz on the Danube, to which they had been transported overland in sections. They used Constanza on the Black Sea as a base to operate against Russian shipping. Their many sorties certainly achieved the destruction of several small Russian merchantmen by torpedoes or mines, besides imposing considerable restrictions on our Ally's seaborne movements. On the 20th of August 1944, however, a heavy Russian air raid on Constanza sank one boat and damaged two others. The last three scuttled themselves off the Turkish coast on the 10th of September, by which time the advance of the Russian armies had trapped them beyond hope of escape.

With the final elimination of the Mediterranean U-boats we may review the results of their whole campaign. The total cost to the

¹ Small vessels under 500 tons have been excluded from these figures, but ships sunk by submarine-laid mines, as well as by gunfire or torpedoes are included. Enemy naval auxiliaries are also included. Thus the above figures cannot be related to those shown under 'Enemy Merchant Shipping Losses in the Mediterranean' in the tables with that heading spaced throughout these volumes.

² This includes the *Ulpio Traiano* sunk by 'Chariots' in Palermo harbour on 3rd January 1943 (see Vol. II, p. 342).

³ See pp. 114-115.

⁴ See Map 31.

Germans was sixty-eight boats¹; but against that must be placed the sinking by them of ninety-five Allied merchantmen totalling 449,206 tons.² In addition they sank twenty-four major British war vessels, including the battleship *Barham*, the aircraft carriers *Ark Royal* and *Eagle*³, four cruisers and twelve destroyers. Moreover by their mere presence they imposed on us the need to maintain strong sea and air anti-submarine forces, covering the whole theatre. Though the transfers to the Mediterranean, whose initial purpose had been to support a tottering Italy, did bring us an easement in the vital Atlantic theatre⁴, on balance it seems that the price paid by the enemy was not excessive. The extent of the U-boats' influence is well illustrated by the fact that not until September 1944, when the last of them had been destroyed, were sailings in convoy widely cancelled in the theatre. We relaxed other war-time restrictions gradually during the succeeding weeks, and at the end of October the Commander-in-Chief noted in his War Diary that 'for the first time in five years merchantmen are now permitted to burn navigation lights in certain areas'. The size of the traffic in the theatre at this time, and the way in which the various threats which had so long menaced it had been drastically reduced, are shown by the fact that during July, August and September 1944, the Convoy and Routeing Service dealt with no less than 14,898 ships; and during the entire seven-month period covered by this chapter Allied losses in the Mediterranean amounted to no more than five ships totalling 7,013 tons.⁵

While losses suffered by the Allied Merchant Navies had thus declined to negligible proportions, those inflicted on the enemy had risen steeply, in spite of the reduced amount of shipping available to him and the restricted waters within which our surface ships, submarines and aircraft could now find targets. His losses are analysed in Table 28 (page 109), but the reader should note that the very large number of small naval auxiliaries which were sunk or destroyed in this period, especially by our Coastal Forces and aircraft, cannot be accurately assessed. The figures do however show, especially when compared with the trivial Allied losses, how completely our control of the Mediterranean had been re-established by the end of 1944.

On the 25th of October the title of the Flag Officer Western Italy (Rear-Admiral J. A. V. Morse) was changed to Flag Officer Northern Area, Mediterranean, and his responsibilities were widened to

¹ See Part I Table 14; but the figure given here includes six U-boats sunk in the approaches to Gibraltar.

² The much larger Italian submarine fleet only accounted for six merchantmen (23,393 tons) between June 1940 and September 1943.

³ See Vol. I, pp. 533 and 534, and Vol. II, p. 304, respectively.

⁴ See Vol. I, p. 540.

⁵ See Appendix Z.

Table 28. Enemy Merchant Shipping Losses in the Mediterranean—
June–December, 1944

No. of ships—Tonnage

Month	By Surface ship	By Submarine	By Air Attack	By Mine	By Other Cause	Total
June . . .	1- 350	6-19,364	19-19,998	3-5,754	25- 76,911	54-122,377
July . . .	4- 859	3- 2,221	13- 60,709	—	26- 15,954	46- 79,743
August . .	2-5,358	—	26- 43,595	2-1,622	91-273,170	121-323,745
September .	1- 638	2- 4,595	22- 64,683	1- 16	25- 15,749	51- 85,681
October . .	6-1,781	2- 3,604	8- 10,392	—	51- 57,427	67- 73,404
November .	3- 363	—	3- 367	1- 14	18- 10,323	25- 11,067
December .	—	—	3- 187	2- 88	9- 2,104	14- 2,379
TOTAL:	17-9,349	13-29,984	94-199,931	9-7,494	245-451,638	378-698,396

- NOTES: (1) The losses 'by other cause' include ships scuttled in French, Italian and Greek ports before the Germans evacuated them. This accounts for over 90 per cent of the large total.
 (2) A very large number of small vessels, in service as naval auxiliaries, was also sunk during this period. These have, as in earlier tables, been excluded.
 (3) Of the 378 ships accounted for in the table, 235 were of less than 500 tons.
 (4) Of the 94 ships sunk by air attack 74 were accounted for by raids on harbours.
 (5) The September figure for sinkings by air attack includes the Italian liner *Rex* (51,062 tons).

include the whole of southern France. Thereafter Admiral Morse, whose headquarters remained at Naples, assumed control of shipping movements and naval operations as far west as the Franco-Spanish frontier. Conditions in the former 'Dragoon' assault area were now considered 'normal', and at the end of October ships began to sail from Marseilles and Toulon unescorted. Because some offshore minefields in the Gulf of Lyon had not yet been cleared, loaded ships destined for those two ports were, however, still sailed in convoy. The headquarters of the Coastal Forces had shifted from Bastia to Leghorn at the end of September, and the historic title of 'Inshore Squadron' was now applied to all ships and craft working off the west coast of Italy and southern France.¹ Minesweeping continued all the time, but the sweepers and the Inshore Squadron were both handicapped by bad weather. This and the shrinking of the enemy's coastal traffic reduced the number of actions fought along the diminishing coastline held by the Germans. On the night of the 18th–19th November, however, our light forces attacked a convoy in the Gulf of Genoa and sank one of its escorts. Then another enemy convoy, bound in the opposite direction to the first, appeared

¹ It is interesting to recall that the term 'inshore squadron' appears to date from the blockade of Brest by Hawke during the Seven Years War (1756–1763). During the Napoleonic war it was widely applied to the blockading forces off both Brest and Toulon, and Lord St Vincent used it frequently. In 1795 Nelson in the *Agamemnon* commanded the small ships of the squadron which worked from Corsican bases against the traffic moving along the south coast of France in exactly the same manner as their twentieth century successors referred to here. Until recently, however, 'inshore squadron' was a descriptive term, and its use as a title seems to have come in only during the last war.

on the scene and joined in the battle. An engagement between the two enemy forces ensued, with our own M.T.Bs looking on with some amusement.

In the Adriatic our light naval forces and aircraft were meanwhile increasing their pressure. In August strong parties of British troops and partisans landed on the Dalmatian mainland and on the off-shore islands; while the sweepers started to clear the inshore channels so that larger warships, and later the merchantmen waiting to carry in supplies to relieve the urgent needs of the civil population, could reach the principal ports. On the 6th and 11th of September troops landed on the islands of Hvar and Brac, and by the 18th both were firmly in Allied hands.¹ Coastal craft ferried in reinforcements and supplies after each new landing, and attempts by the Germans to evacuate their garrisons by sea were severely handled by our light naval forces and patrolling aircraft. The only unhappy feature of this highly successful period was the increasing pre-occupation of Tito and his partisans with their post-war political aims. To the British officers on the spot they seemed more concerned with gaining power for themselves, and with crushing the rival faction of Cetniks, than with defeating the Germans. In spite of these handicaps, and of the worsening weather, in October the scale of operations was kept up. Thus on the night of the 11th-12th three M.T.Bs and an M.G.B. intercepted a convoy off Vis Island and sank three vessels; and out of eight craft which left Dubrovnik on the 20th to evacuate the enemy garrison none reached safety. As four I-boats² were captured intact during the month, and heavy losses were inflicted on almost every occasion when the enemy attempted a movement by sea, it appeared that the Germans' northward withdrawal was becoming a rout. In the south, after a preliminary bombardment by destroyers and L.C.Gs, Corfu harbour was captured on the 12th, and troops and vehicles landed there next day. Most of the German garrison had, however, already been evacuated.

Meanwhile up and down the Italian and Yugo-Slav coasts the minesweepers continued to clear the channels and the waters of each harbour captured. The calls for minesweeping were very heavy, but as there were now six flotillas of fleet sweepers (thirty-nine ships) on the station, besides a large number of the smaller motor minesweepers, minesweeping motor-launches, and American-built vessels (B.Y.M.S.), they managed to keep up with the demands. Very large numbers of moored mines were cut in the Adriatic alone, and it is likely that, as Admiral Cunningham claimed, the sweeping operations carried out at this time in the Mediterranean were the biggest

¹ See Map 29.

² These were Infantry Landing Craft. Appendix V contains particulars of all types of German minor war vessels.

of the whole war. Between the 1st of September and the 5th of December over 2,000 mines were cleared.

In September on the other side of the Adriatic General Alexander's forces, though weakened by the diversions to southern France, made a determined attempt to pierce the Gothic line, break into the Po valley and destroy Kesselring's forces. Supported from the sea by destroyers of the 14th Flotilla and by gunboats, and aided by heavy air attacks on the commanding ridges behind the town, the Eighth Army captured Rimini on the 21st. The inshore route to the port was at once swept, so that supplies could be landed as near to the front line as possible. But the Germans reinforced Kesselring, who continued to resist stubbornly; and after very heavy fighting in the centre, the Fifth Army was stopped short of Bologna. In October bad weather set in, American reinforcements were denied, and we had to divert strong military forces to deal with the critical situation which had arisen in Greece.¹ It thus came to pass that, although the Gothic Line had been pierced in the east and centre, the longed-for victory in the open country through which flows the River Po could not be achieved before winter had put a stop to all major land offensive operations.

In December, after a lull of seven weeks, there was a revival of activity by the enemy's 'small battle units' against shipping off southern France²; but an attempt to attack a coastal convoy on the night of the 8th-9th produced no results except the capture of an S-boat by our patrols.³ The last sorties of the year were made by 'Marders' against the destroyers whose gunfire had so often harassed them in their bases.⁴ Nine of the attackers were destroyed on the 19th of December, and five more in the small hours of New Year's Day, 1945. The Germans then transferred the survivors to the Adriatic. A variety of the special assault craft, Italian as well as German, had for some time been stationed at Pola and Trieste, and in August 1944 the Germans had absorbed all the Italian vessels, which included four midget submarines, into their own 'small battle unit' command. On the 4th of September, however, the three special transport submarines, which the Italians had built in Pola to tow the midgets to their targets, were all destroyed in an air raid.⁵ In September enemy assault craft from Pola made two abortive raids on Ancona, and on the 27th two of their number were sunk by our coastal craft off Split.

¹ See p. 117. By 12th December we had sent the approximate equivalent of an Army Corps to Greece, and before the end of that month another British division had been flown in.

² See p. 101.

³ See Appendix V for a description of German minor war vessels.

⁴ See p. 101.

⁵ These were named *Grongo*, *Morena* and *Sparide*.

On the last night of that month explosive motor boats of the type which we had encountered off southern France during operation 'Dragoon' made their first and only sortie in the Adriatic. An attempt to attack the bombarding ships working off the Italian coast was totally frustrated by bad weather, and all five 'Linsen' taking part, as well as two of their control boats, were lost.

From the brief account given in this chapter of the employment of the 'small battle units' in the central and western Mediterranean the reader will remark that, beyond tying down a number of Allied escort and patrol craft, the very considerable effort expended by the enemy produced practically no results. Apart from the lack of training from which the crews undoubtedly suffered, and the unsuitability of many of the devices used, the failure of the whole *genus* can confidently be attributed to the skilful employment by the Allies of the more conventional instruments of maritime power. It should not, however, be assumed that no rôle exists in sea warfare for small bodies of determined men to penetrate enemy defences and inflict damage with such weapons. Indeed the Italians and we ourselves had both shown that, given careful planning and training, suitable equipment, and gallantry in execution, results as important as the immobilisation of the *Queen Elizabeth* and *Valiant* in Alexandria harbour in December 1941 and of the *Tirpitz* in north Norway in September 1943 could be achieved.¹ But against an enemy possessed of almost complete maritime control, and whose forces never relaxed their vigilance, the chances of gaining any important success were remote. The Germans themselves had been late in developing such weapons, and their entry into the field stemmed from their admiration of the Italian Navy's exploits, and from the successes achieved by the British X-craft.² It thus came to pass that by the time the small battle units were ready for service the conditions for their successful employment had almost entirely vanished.

As the enemy, constantly harassed by attacks from sea and land, withdrew northwards up the Dalmatian coast in November our naval and air forces increased their pressure. On the night of the 1st-2nd the destroyers *Wheatland* and *Avon Vale* encountered the former Italian torpedo-boat TA.20 and two escort vessels close inshore between Fiume and Zara, and sank them all. Then, as the Yugoslav forces reoccupied the ports, larger ships were sent to organise their clearance and the unloading of relief supplies. On the 10th the A-A cruiser *Delhi* reached Split, and eight days later the *Colombo* anchored in Zara.³ The reception accorded to the British

¹ See Vol. I, p. 538, and Part I of this volume, pp. 64-68, respectively.

² See for example C. D. Bekker *K-men*. Eng. trans. George Malcolm (Kimber 1955).

³ See Map 29.

sailors by the partisans was, to say the least of it, mixed. In December the Yugoslav Senior Naval Officer virtually blockaded the ships from the shore and ordered them to leave; but Marshal Tito appears to have cancelled the order, and tendered an apology. None the less we still had to exercise great patience with the representatives of the nation we were trying to help. The *Delhi's* War Diary contains amusing, if rather tragic, accounts of the partisans' attempts to stop the sailors giving food to the starving children of Split. On the 27th of November her Captain noted that 'The wreck [to which the ship was secured] was infested by children. Impossible to stop the sailors feeding hungry, homeless children and the partisans so informed . . . Found three children smuggled into ship and being bathed. Nursery established and steps taken to make the wreck children-proof.'

Meanwhile up and down the Dalmatian coast British sweepers were clearing the dense minefields to enable relief shipping to enter. The 19th Minesweeping Flotilla cut 214 mines in the approaches to Sibenik in November, and the *Waterwitch* alone accounted for forty-seven in seventeen minutes. Further south Valona was cleared by the 27th, so enabling supplies to reach the starving Albanians. In December fighting flared up in the approaches to Fiume, where there were still German garrisons. Destroyers, coastal craft and R.A.F. Beau-fighters attacked the enemy-held islands, and destroyed a number of small vessels and assault craft in the harbours. The destroyer *Aldenharn*, however, struck a mine off Pola on the 14th while returning from a bombardment, and sank with considerable loss of life.

The year thus closed with the Germans still in control of the Istrian peninsula and of the ports of Trieste, Fiume and Pola; but the whole of the Albanian and Yugoslav coasts up to the entrance to the Gulf of Fiume, and all the Dalmatian Islands, were firmly in Allied hands. What we lacked was the land forces needed to exploit that very promising situation.

It was in the Balkan peninsula that the first rifts in the structure of Axis power since the submission of Italy now appeared. Before the end of August the Russian armies were sweeping victoriously forward across the eastern frontiers of Roumania and Bulgaria, and both those unfortunate countries soon sought armistice terms. These defections in the north critically affected the situation of the Axis forces (mostly German) in southern Greece and the long-contested Aegean islands; and on the 27th of August Hitler authorised a gradual withdrawal to the central Balkans. At first the Germans hoped to stand on a line running from Corfu north-east across Greece, and including the port of Salonika; but the threat of a Russian land advance southwards from Bulgaria soon made that hope vain. On the 5th of September they started to reduce their garrisons in southern Greece, Crete and the Aegean islands—and Allied

intelligence soon became aware that exceptional movements were in train. Our plan was to deploy sufficient naval forces, including escort carriers and submarines, to stop movements by sea, and to use the aircraft of the R.A.F. Command, Middle East, for the same purpose. Strategic bombers from Italian bases were to attack airfields and ports, landings were to be made by small amphibious forces at certain key points, and paratroops were to seize airfields on the mainland of Greece as soon as a favourable opportunity offered. The Germans for their part assembled some four score transport aircraft around Athens, and collected every available merchant ship and auxiliary vessel (some fifty ships totalling 27,000 tons), as well as numerous small warships and landing craft and about 200 caïques. Throughout what must have been an extremely trying period for them—since they could not effectively dispute Allied control of either sea or air—the Germans acted with vigour and resolution; and we now know that, for all our efforts to stop the evacuations, they achieved a remarkable degree of success.

Early in September we formed a naval striking force under Rear-Admiral T. H. Troubridge, who had recently returned to the eastern Mediterranean after taking part in the landings in southern France.¹ It consisted initially of two light cruisers, seven escort carriers and a like number of destroyers, and carried out its first operation on the night of the 12th–13th September, when the destroyers sank an entire convoy of four small vessels between Crete and Santorin.² Three days later the warships landed troops on the island of Kithera off southern Greece, and we at once set about creating an advanced base for coastal craft there. On the 15th of September Admiral Troubridge's destroyers worked for the first time to the north of Crete—the waters where the Royal Navy had suffered so grievously in May 1941, when it had been we who were forced to evacuate land forces in face of overwhelming air power.³ Now the rôles were reversed; for whereas our own ships were well looked after by shore-based and carrier-borne fighters, the Luftwaffe could not protect the German convoys adequately. None the less we found it very difficult to stop the evacuation of the German garrison from Crete by transport aircraft, generally by night; and it was not until the specially equipped Fighter Direction Ship *Ulster Queen* began to work off the coast in co-operation with the R.A.F. Beaufighters from Egypt that our counter-measures became effective. By early October we had intercepted and destroyed nearly a score of the enemy's transport aircraft, and the evacuation was seriously checked; but by

¹ See p. 99.

² See Map 31.

³ See Vol. I, pp. 440–449.

20°

25°E

THE AEGEAN SEA

Illustrating the campaigns
of 1944-45

R U M A N I A

Galatz

Constanz

B. Danubi

B U L G A R I A

BLACK
SEA

Bosph.

C E

Salonica

Sea of Marmara

Lemnos

Dardanelles

Volose

Mitylene

G R E

Khios

Izmir (Smyrna)

Corfu

ATTICA

Cephalonia

Patras

ATHENS

Piraeus

Andros

Samos

Zante

PELOPONNESUS

Salamis

Kalamata

Naxos

Leros

Calino

Cos

C. Matapan

Kithera

Melos

Santorin

Stampalia

Piskopi

Rhodes

Castelorisio

Antikithera

Scarpanto

Maleme

CRETE

Kaso

35°

M E D I T E R R A N E A N S E A

7°

25°E

that time over 12,000 troops had been moved to temporary safety on the mainland.

Between the 9th and 20th of September Admiral Troubridge's ships, though hampered by the minefields which the Germans were laying in the narrow channels, swept into the northern Aegean, and scored considerable successes. In that period the carrier-borne aircraft, cruisers and destroyers sank some sixty vessels, and also attacked shore targets on many islands, including Rhodes. Their offensive continued until the end of October, though the later forays proved much less fruitful than the first. In all, the escort carriers flew 640 sorties, and their aircrews performed considerable execution on the enemy at trifling cost to themselves. Although flying conditions in the Aegean were certainly better than they had been off Salerno, or off the south of France at the time of the 'Dragoon' landings¹, it was undoubtedly the improved training of the carrier air crews which contributed most to the great decrease in deck-landing accidents in these operations. In spite of their heavy losses of ships and transport aircraft the Germans did not give up, and late in September they even managed to transfer three ex-Italian torpedo-boats from Trieste through the Otranto Straits and the Corinth Canal to Piraeus.² They were intended to speed up the evacuation of the island garrisons, and to impede our movements by laying minefields; but in fact they were all destroyed during October.

On the 3rd of October the Germans decided to withdraw entirely from Greece, including Salonika, and on the 12th their last forces left Athens. We had already, on the 1st, seized the island of Poros at the entrance to the Gulf of Athens, and now started to sweep the channels into Piraeus, as well as into other Grecian ports such as Patras and Kalamata; but the German mine-laying had been so extensive that large numbers of sweepers had to be employed.

Between the end of August and the end of October 1944 the Germans succeeded in removing over 37,000 troops—mostly by air—from Crete and the Aegean islands to the mainland, as well as substantial quantities of stores and equipment; but by the latter date we had sunk over half of the mercantile tonnage remaining to them, and our naval and air forces had put a complete stop to the evacuations. With the sinking of the former Italian destroyers TA.37 and TA.18 by the *Termagant* and *Tuscan* on the 7th and 19th of October, the destruction of the TA.14, TA.17 and TA.38 in bombing raids on Grecian harbours³, and the scuttling of the warships which could not get away from the islands, enemy maritime power in the

¹ See p. 99.

² These were the TA.37 (*ex-Gladio*), TA.38 (*ex-Spada*) and TA.39 (*ex-Daga*).

³ Details of the destruction of the nine ex-Italian destroyers and torpedo-boats which the Germans had taken over and employed in the Aegean will be found in Appendix XX.

long-contested waters of the Aegean, where we had suffered grievous checks and heavy losses only a year earlier¹, was finally extinguished. But in Crete, Rhodes, Leros, Kos and in a few smaller islands there were still substantial garrisons of German and Italian troops. In mid-October Coastal Force craft landed troops at Mudros on the island of Lemnos, which commanded the approaches to the Dardanelles and will be well remembered by all who took part in the Gallipoli campaign of 1915²; but small landings made during the same month on the islands of Milos and Piskopi further south met stiff resistance and our troops had to withdraw. Nor did air attacks or gun bombardments by cruisers and by the battleship *King George V* (which was passing through the Mediterranean to join the Eastern Fleet) succeed in persuading the last island garrisons to surrender. They were, however, no longer capable of doing us significant harm; and rather than undertake large scale combined operations to capture objectives which we did not need, they were left to 'wither on the vine'

With the complete restoration of Allied maritime power in the Aegean only the northern Adriatic and a short stretch off the west coast of Italy remained in enemy hands. Over the whole of the rest of the Mediterranean theatre, which had been the scene of so much arduous sea fighting since June 1940, our control was now virtually undisputed.

The British War Cabinet had long anticipated trouble as soon as the Germans withdrew from Athens. To maintain order while a properly constituted Government was establishing itself, and to enable relief supplies to flow in unhindered, an operation, appropriately called 'Manna', had been planned. It was mounted in two sections, the first sailing from Alexandria and the second from Malta and ports in south-east Italy. Rear-Admiral J. M. Mansfield, commanding the 15th Cruiser Squadron with his flag in the *Orion*, was in charge of the naval side, and he had a considerable force of warships and combined operations vessels under him. The latter were to carry in two British brigades and their equipment, while two escort carriers provided fighter cover during the approach and disembarkation. Both forces sailed on the 14th of October, and met early next day in the Gulf of Athens. A dense shallow minefield caused some delay and a few losses, but by sunset on the 15th the first part of the 'Manna' force had anchored off Piraeus. The remainder soon followed, and on the 18th the Greek government, exiled since 1941, landed in state.

¹ See Part I of this volume, pp. 188-204.

² See Map 31.

To the British forces, as well as the long-suffering population of that war-torn land, it was a moving occasion. At the head of that lovely stretch of blue water, where the Acropolis surveys the rocky hills and steep valleys of Attica—the cradle of so much that we treasure in western civilisation—lay a great fleet of grey, rust-scarred British and Greek warships. Some of the former, including the flagship *Orion* and her sister-ship the *Ajax*, had been present when, three and a half years earlier, we had rescued all that we could from the wreck of the armies hastily sent to try and save something of Greek liberty.¹ Many of the older men serving in the ships now lying in comparative safety off Piraeus had known the Grecian harbours intimately in days of peace: and some of them had shared in the sufferings of 1941. Even though it soon became plain that very difficult problems lay ahead, it was impossible for the British sailors present not to be stirred by the victorious return to a country with which their Service had enjoyed so long and intimate a friendship.

By the 24th of October the Gulf of Athens was entirely clear of mines, and the 'Manna' follow-up convoys were arriving smoothly. Two days later the Greek Prime Minister, Mr Eden, General Wilson and Admiral Cunningham visited Piraeus.

Mr Churchill has given a vivid account of the political situation which led to the necessity for armed intervention by British forces in Greece during the last month of 1944, and there is no need to recapitulate the story here.² From the Royal Navy's point of view the strikes, demonstrations and outbreaks of savage violence which started in almost all the Greek ports early in December produced as difficult problems as it has ever been called on to handle. It was plain that the Communist-controlled 'National Liberation Front' (E.A.M.) and its so-called 'National Army of Liberation' (E.L.A.S.) intended to seize power without any consultation with the people as a whole, and in defiance of the constitutional Greek government, which had just returned from its long exile. That such a plot was frustrated owed almost everything to Mr Churchill's action in sending in British troops to keep law and order until the future form of government which the country wanted had been peacefully decided. We already had considerable naval strength in Piraeus when, on the 4th of December, a violent attack by E.L.A.S. started. The British ships, and also the Greek ships which had so long fought alongside them against the common enemy, were soon in action bombarding positions held by the Communists, and holding off the attacks on the naval shore installations. Not the least remarkable facet of those confused and anxious days was that many of the Greek warships which

¹ See Vol. I, pp. 434-436.

² See Churchill, Vol. VI, pp. 247-283.

were now helping to quell the revolt had been in a state of open mutiny only a few months earlier.¹ By the 12th the situation in Piraeus was in hand; but in central Athens the British troops were virtually besieged, and hard fighting continued throughout the month.

Similar outbreaks, though less violent than in the Athens district, necessitated sending our warships to Salonika, Patras, Kalamata, Volos, and other Grecian ports²; and cruisers and destroyers, which could have been better employed elsewhere, had to be diverted to prevent the Communists gaining control. Happily, and in no small measure thanks to the tact and patience displayed by the British sailors, very little force had to be used except in Piraeus and Athens. As a typical example of their restraint we may quote Admiral Cunningham's remark in his War Diary that the situation at Salonika on Christmas Eve 'needed most careful handling . . . H.M.S. *Aurora* was arranging a football match with the local Greeks, and was laying on her band for the occasion.' In civil strife, in many parts of the world, a naval football match and a Royal Marine band have often proved remarkably effective tranquillisers of political passions; and so it was at Salonika in December 1944.

Mr Churchill has told how he suddenly decided to fly out and face in person the crisis which had arisen. He arrived by air on Christmas Day, and at once went onboard the *Ajax* in Piraeus. There was to be a conference that evening between the interested parties, and it was plain to everyone that such an encounter would demand most tactful handling. Mr Churchill had decided on arrival that he would talk alone with the Greek Prime Minister Mr Papandreou at 6.30 p.m., and with Archbishop Damaskinos, whose appointment as Regent for the King of Greece was one of the most burning issues, half an hour later. These arrangements led to a naval *contretemps* which, for superimposing sheer comedy on a tragic situation, must be unrivalled; for the fiercest of civil strife was proceeding all the time in nearby Athens. The Admiral's barge was sent inshore to fetch Mr Papandreou first; but on its arrival two figures instead of the expected one, emerged out of the gloom of the winter evening. 'The jetty' wrote an eyewitness 'was a cold and uninviting place to leave either a Prime Minister or an Archbishop cooling his heels for half an hour, and so they were both ushered into the barge, which set course for the *Ajax*. Conversation on the way was limited.' On arriving at the ship the officers waiting at the gangway realised that an emergency had arisen, separated the two Greek delegates, and ushered Mr Papandreou into the Admiral's cabin, where Mr Churchill was awaiting him. The Archbishop 'a most imposing figure, six foot six inches tall,

¹ See Part I of this volume, pp. 328-329.

² See Map 31.

in his biretta and long black cloak, with a long flowing beard and carrying a tall staff' was led forward to a different door leading to Admiral Mansfield's cabin. Meanwhile the ship's company, who were totally unaware of Mr Churchill's arrival and of the critical conferences about to begin, had been celebrating Christmas in the traditional naval manner. At the very moment when the Archbishop stepped through the starboard door leading into the lobby outside the Admiral's cabin, a medley of ratings in fancy dress entered through the port door. Their intention was to sing carols to the Admiral. Finding themselves suddenly faced by a figure in unusual costume they assumed it to be a rival party, bent on a purpose similar to their own. The Archbishop's astonishment was no less than that of the would-be carollers, but with some difficulty he was separated from them and impelled into the Admiral's cabin. Arrived there, explanations were made to the Archbishop, who, not surprisingly, appeared to be somewhat bewildered. The conferences thereafter took their intended, if more conventional course.¹

On the last day of the year Archbishop Damaskinos was inducted Regent of Greece, and by the middle of January 1945, after six weeks of hard fighting, British forces were in control of all Attica. A truce was signed on the 11th of January, by which all E.L.A.S. forces had to withdraw from the neighbourhood of Athens, Salonika and Patras. Greek independence had been saved.

¹ The account of this incident in Churchill, Vol. VI, p. 271, does not quite accord with the memories of officers who actually witnessed it.

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CHAPTER XVII

COASTAL WARFARE

4th July–31st December 1944

'The vital British policy [is] that the coasts of the enemy are the frontiers of England.'

Admiral Lord Fisher to Edward A. Goulding, 6th June 1911.

WE must now retrace our steps to the early days of July 1944 and take up the story of the operations in the English Channel after the end of operation 'Neptune'. The reader will remember that, shortly before Admiral Vian returned to England on the 30th of June, the responsibility for the naval organisation in the former assault area was transferred to Rear-Admiral J. W. Rivett-Carnac, who flew his flag ashore at Courseulles.¹ Now that conditions off the Normandy coast were more stabilised the naval organisation was recast on the lines of a Home Command, with sub-commands responsible for minor ports and senior officers in charge of the various forces needed for minesweeping, seaward defence, anti-aircraft protection and so on.

The heavy bombardment ships now also came under Admiral Rivett-Carnac. At first they consisted of the battleship *Rodney*, the 15-inch monitors *Erebus* and *Roberts*, the cruisers *Mauritius*, *Argonaut*, *Emerald*, *Enterprise*, and *Dragon*, as well as numerous destroyers, gunboats and support craft; but a reserve of ships was kept in England to relieve those which had to return temporarily to replenish. Those actually working off the Normandy coast had to meet the needs of the American as well as the British land forces, for our Ally's heavy bombarding ships had been transferred to the Mediterranean to take part in the landings in southern France.² In his War Diary Admiral Rivett-Carnac noted that 'the battleships and monitors, with their heavy shells, long range and continuity of fire were always at a premium. Their efforts were restricted solely by safety factors, gun life and availability of ammunition. The modern multi-gun cruisers were of particular value for counter-battery fire. . . .' Single-seater aircraft or shore observers spotted the fall of shot for the ships, and the targets most commonly engaged were enemy batteries, defended zones, concentrations of troops and, sometimes, of tanks.

¹ See p. 71.

² See p. 89, fn. (1).

Whenever a big offensive was being prepared by the Allied armies, or the threat of a German counter-attack was developing, the bombarding ships came into action. Thus on the 8th of July the *Rodney*, *Roberts*, *Belfast* and *Emerald* all took part in the preparations for the assault on Caen, which was captured next day. The long-range fire of the 16-inch and 15-inch guns proved particularly effective, and the soldiers reported that it had been delivered with 'perfect accuracy'. On the 18th big gun ships and support craft were in action again on the same front, when the Second Army started an offensive to the south-east of Caen.

Enemy minelaying was still a source of anxiety, not least because it restricted the movements of the bombarding ships. The pressure-operated 'oyster' mine, generally laid at night by aircraft, continued the most troublesome enemy weapon, for it could only be destroyed by counter-mining. On the 5th of July we estimated that, out of some 600 mines so far laid in the anchorages, only about half had been destroyed. In spite of constant sweeping, and the enforcement of slow speed in mined waters, casualties continued; but they were never serious enough to endanger the armies' supplies. To impede and deter the enemy's minelaying aircraft, balloons were flown by night from all vessels fitted for them, and arrangements were made between the Navy and R.A.F. to reserve some nights for the anti-aircraft guns and others for the fighters—according to the suitability of the weather. Smoke was only used sparingly, because it prevented mine-spotting, and also blinded the A-A. gunners.

Another source of trouble was the constant shelling by the enemy of the eastern beaches and offshore anchorages. This had already caused the closing, on the 1st of July, of the 'Sword' beaches; and we now entertained fears that the 'Juno' beaches would also come under shell fire.¹ Bombarding ships frequently engaged the enemy's persistent mobile batteries, but they were difficult targets to locate and destroy. Compared with minelaying and shelling the bombing attacks on shipping, which only took place at fairly long intervals, and rarely by more than a dozen aircraft, were a small threat. The fighters and A-A. defences dealt with them easily, and few losses were suffered.

On the 8th of July Admiral Ramsay approved the formation of a 'Support Squadron Eastern Flank', to meet calls for close-range fire on the exposed flank of the British Second Army. It was placed under Commander K. A. Sellar, who was given some seventy vessels, most of them specially equipped landing craft.² Starting work on the 24th,

¹ See p. 69 and Map 24.

² These were initially Landing Craft Gun (L.C.G.), Landing Craft Flak (L.C.F.) and Landing Craft Rocket (L.C.T.(R)). Later some Landing Craft Support (L.C.S.) joined her force.

by day they closed the shore to engage whatever targets the Army might designate, generally firing from behind smoke screens and using shore observation to control their fire; while by night they established a double line of patrols to seaward of the barrier of anchored vessels mentioned earlier¹, in order to intercept any enemy light craft which might try to penetrate into the anchorages. The double duty placed on the Support Squadron kept its ships very busy, and they often gained the Army's appreciation for the effectiveness of their bombardments.

During July the weather was generally good, and unloading continued smoothly. On the 22nd the 'Gold' sector was closed, leaving only the 'Juno' beaches and the 'Mulberry' harbour at Arromanches to meet all requirements. Between D-Day and the middle of August a million tons of stores were landed in the British assault area, and the rate of discharge reached a peak of over 17,000 tons daily before the end of that month. This was meeting the armies' needs so liberally that plans were actually made to reduce the rate of discharge in August.

The Germans had meanwhile reinforced the E-boat flotillas based on Havre, Dieppe and Boulogne to a total strength of twenty boats. To guard against forays by them against the cross-Channel convoys destroyers, frigates and coastal craft were kept constantly on patrol, while Coastal Command and Fleet Air Arm aircraft watched the enemy's bases by night, and attacked whenever a target appeared. The German E-boats, however, only came out in small groups and in darkness; and, as so often before, we found them elusive targets. Whenever the surface or air patrols gained contact they harried them severely, but it was still a fairly rare event for an E-boat to be caught and sunk at sea. In July no less than ten clashes took place between our M.T.Bs, which were supported by one or two frigates, and German light craft off Havre. The results were generally inconclusive, and the losses suffered by both sides over the period were fairly evenly balanced. Typical of these fast moving close-range night actions was a *mélée* in Seine Bay on the night of the 26th-27th of July, which produced a succession of collisions resulting in the loss of two British M.T.Bs and one E-boat. But if we failed to inflict appreciable losses on these enemies, they accomplished nothing against the steady stream of ships passing to and from the Normandy beaches.

The E-boats did better against the convoys moving slowly along our south coast than against the heavily guarded cross-Channel traffic. Thus on the night of the 26th-27th of July two ships in a convoy were damaged off Dungeness; and, four nights later in a similar attack off Beachy Head, no less than five large British ships were

¹ See p. 54.

torpedoed, and one of them sank. On both these occasions the E-boats escaped unscathed. It is likely that the shore searchlights and anti-aircraft barrages directed against flying bombs aided the enemy to locate and attack our coastal shipping at this time.

It was actually Bomber Command's attacks on the German base installations in Havre which inflicted the most serious losses on the E-boats, and by the early days of August their strength had been reduced to fifteen. The decline in enemy surface ship activity then enabled the Admiralty to transfer some fifty flotilla vessels to the Home Fleet, which was about to restart the Arctic convoys¹, or to the Eastern Fleet.

Meanwhile Coastal Command's No. 16 Group had been reinforced by the transfer of a Beaufighter Strike Wing from No. 19 Group on the 1st of July.² With two Strike Wings available to attack offshore shipping between the Hook of Holland and the Kiel Canal, Coastal Command was able to increase its pressure. By day the Beaufighters made constant sweeps in great strength, while by night Wellington bombers and Fleet Air Arm aircraft patrolled against E-boats. On the 6th of July the Beaufighters sank a 3,000-ton ship off Norderney Island, and two days later they destroyed three of a six-ship convoy, as well as two of its escorts off the Weser estuary. During the month No. 16 Group accounted for five merchantmen and no less than eleven small escort vessels of various types. The Nore Command M.T.Bs also carried out many sorties to the Dutch coast at this time, but their actions generally took place against the patrol vessels, escorts and minesweepers which the Germans employed to protect their coastal shipping. In July and August the M.T.Bs fought nine separate actions, and sank seven small war vessels of various types; but on the night of the 4th-5th of July M.T.B 666 was damaged and captured by the enemy. She was towed into IJmuiden, where she blew up and sank. Early in August the Germans took additional steps to deal with the torpedo-boats' raids, by strengthening their patrols off the Hook of Holland with a special group of modern and fast vessels. It seems probable that this measure, combined with the use of heavily armed ferry barges to support the patrol vessels, was responsible for the decline in the successes achieved by our M.T.Bs in the late summer.

To return to the former assault area, July also produced the first attacks by 'small battle units' against shipping lying off the Normandy beaches.³ Late on the 5th twenty-six 'Marders' started out

¹ See p. 159.

² In August the Strike Wing returned temporarily to No. 19 Group to take part in operations against German shipping attempting to evacuate the Bay of Biscay bases. See p. 130.

³ See pp. 101 and 111 regarding 'small battle unit' operations in the Mediterranean. Appendix W gives full particulars of all types of these craft.

from their base near Trouville; but in the early hours of the next morning they ran into the protecting screen of landing and coastal craft on the eastern flank of the assault area¹, and nine of them were sunk. Though the Germans claimed to have achieved substantial successes, in fact the 'Marders' only sank two minesweepers on this occasion. Three nights later twenty-one of the same craft set out on a similar mission, but the defences were very alert and every one of them was destroyed by depth charges, by gunfire from the surface ships, or by our patrolling aircraft. Their only successes were to sink another minesweeper, and to damage the old Polish-manned light cruiser *Dragon* so badly that she was added to the 'Gooseberry' shelter as an extra blockship. In spite of these severe initial checks the Germans persisted with their special craft, and on the night of 2nd-3rd of August they made their biggest effort. Twenty explosive motor-boats ('Linsen'), with twelve of their control craft, and no less than fifty-eight 'Marders' set out on a combined foray, in which E-boats were to use the new long-range circling torpedoes to cover the retirement of the small battle units.² A Bomber Command raid on Havre, however, caused so much damage on shore that the new torpedoes could not be used. The arrival of such numbers of assault craft off the beaches at about 3 a.m. on the 3rd of August gave the defenders an extremely busy time. Enemies constantly appeared all over the place, torpedoes were running in all directions, while the patrol vessels illuminated the scene, dropped depth charges and fired with all their weapons at any target sighted. The results achieved by the Germans were hardly commensurate with the effort made. The destroyer *Quorn*, a trawler and an L.C.G. (Landing Craft Gun) were sunk, and two transports were damaged; but no less than forty 'Marders' were destroyed, six of them by the Spitfires of the 2nd Tactical Air Force and most of the remainder by our surface warships. In addition one 'Marder' was captured intact and sent back to England; while of the 'Linsen' only ten control craft returned from the foray.

The next attempt took place on the night of the 8th-9th August when sixteen 'Linsen' with twelve control craft sailed from their operational base near Honfleur. They were, however, no more successful than on the previous occasion. The ships and craft defending the anchorage destroyed all the explosive boats and four of their control craft; and no losses at all were suffered on the Allied side. On the two succeeding nights the long-range torpedoes mentioned earlier

¹ See p. 54.

² These were called 'Dackel'. Their speed was only nine knots, but they could run straight for 16 miles and then circle for another 18 miles. As their total running time was no less than 3½ hours they could cause considerable trouble in an anchorage crowded with shipping.

were fired into the anchorage, and damaged a transport (5,205 tons), the old cruiser *Frobisher*, the repair ship *Albatross* and a minesweeper. Another attempt by 'Marders' on the night of the 15th-16th was frustrated mainly by bad weather, and the last attack off the Normandy beaches took place on the following night. Forty-two 'Marders' set out, but only sixteen returned; and once again they were shown to be very vulnerable to the depth charges and guns of our patrol craft, and to the Spitfires which harassed them from the air. Their solitary success was to sink an L.C.F. (Landing Craft Flak); but two torpedoes exploded harmlessly against the old French battleship *Courbet*, one of the original 'Gooseberry' blockships.¹ She rendered remarkable service at this time, of a nature which had not been foreseen when the plans for operation 'Neptune' were framed. Finding that the Germans were wont to fire at her with their land artillery and attack her from the air, we decided to encourage such attentions by dressing her up in an enormous tricolour and cross of Lorraine. Thereafter she proved an irresistible attraction to enemy shells, bombs and torpedoes; but they made no difference at all to the efficiency with which she continued to discharge her rôle of blockship.

The Germans had intended to use other types of 'small battle units' off Normandy²; but our advance on land, and air attacks on their communications, frustrated the intention. So ended the operations of these special craft in the western Channel. It will be told later how they reappeared in the Scheldt estuary and southern North Sea towards the end of 1944.³

While our surface and air patrols were dealing with the E-boats and small battle units, the campaign in the Channel against the U-boats was still proceeding. At the beginning of July the Germans became apprehensive about the losses that the ten 'Schnorkel' boats, which should have been working against the cross-Channel routes, appeared to have suffered⁴; for no reports had been received from them recently. They accordingly decided not to send in further reinforcements until the situation became clearer. When, however, two boats returned safely to Brest early in July they resumed sailings for the central Channel, making full use of the experiences gained by those who had got back. The results were disastrous for the Germans. On the 4th U.390 sank one ship in a north-bound convoy, but was then hunted and counter-attacked by the *Wanderer* and *Tavy*, who destroyed her off Cape Barfleur next day. It is worth remarking that this was the fifth U-boat credited to the *Wanderer*, which was

¹ See p. 27, fn. (1).

² Such as 'Biber' and 'Molch'. See Appendix W.

³ See pp. 152-153.

⁴ See p. 67.

one of the destroyers built for the 1914-1918 war. Next day, off Beachy Head, three escort vessels (two of them Canadian destroyers) sank U.678, which had just made an abortive attack on a convoy. On the 8th a Sunderland of No. 10 Squadron (R.A.A.F.) sank U.243, which was making for Brest from the Atlantic, and three days later another Sunderland accounted for U.1222, which was also returning from overseas—in spite of the fact that she was running on her diesels with 'Schnorkel' raised at the time. This was a rare success for an air patrol to achieve.

One of the most extraordinary experiences of the war fell to U.763 at this time—and she survived to tell the tale. She attacked a convoy off Selsey Bill on the 5th of July, and in the subsequent thirty-hour hunt counted no less than 550 depth charge explosions. But throughout that long endurance test she remained submerged, often bumping along the bottom, and altering course so often that she lost all accuracy of navigational reckoning. By dawn on the 7th she had shaken off her pursuers and, believing that she had been carried by strong currents to the neighbourhood of Alderney, she steered north, still submerged, to get clear of those notoriously dangerous waters. That evening she struck the bottom again in shoaling water, took a cautious look through her periscope, and was surprised to see land on three sides. Her Captain, Ernst Cordes, then realised that he had arrived in Spithead! For another twelve hours he lay on the bottom well inside the Nab Tower, after which he skilfully extricated himself, and managed to return to Brest safely on the 14th of July, in spite of being attacked again on the way. One must give her captain and crew full credit for the endurance and resource displayed throughout what must have been a harrowing experience. Her unintended and undetected entry into perhaps the most closely guarded waters in the world remained quite unknown to us until the German records were examined after the war.

The next boat to arrive in the vicinity of the cross-Channel convoy routes was U.212, on the 14th of July; and she was sunk a week later by the frigates *Curzon* and *Ekins*. Another enemy (U.741) made Havre after being damaged in collision in mid-Channel and losing both her 'Schnorkel' funnel and her periscopes. Rather oddly we have no record of any Allied ship reporting a collision at that time. U.672 was less lucky. She was attacked south of Start Point by the frigate *Balfour* on the 18th, and was so badly damaged that her Captain surfaced during the night and abandoned ship. The crew were all picked up later by our air-sea rescue launches. In the middle of the month the Germans, undeterred by these heavy losses, sent three more boats from Brest to the Channel. One returned to her base with her crew exhausted after a ten-day patrol in which she only damaged one ship. A second, U.621, did rather better; for she

sank the L.S.I. (Landing Ship Infantry) *Prince Leopold* on the 29th, damaged a large merchantman and, in spite of being severely harried, made Brest again safely. The third, U.275, survived repeated attacks by our surface patrols, and managed to crawl into Boulogne on the 2nd of August severely shaken and much damaged. After effecting repairs she sailed again about a week later, and eventually reached Norway.

Still the enemy did not give up the attempt to dispute control of the Channel with his U-boats, and on the 22nd and 23rd of July three more left the Biscay bases. Two of them received very short shrift at the hands of our surface patrols; for U.214 was caught on her way to lay mines off Start Point and sunk by the frigate *Cooke* on the 26th, and five days later U.333 was destroyed off the Scillies by the *Starling* (the one-time leader of Captain F. J. Walker's famous 2nd Escort Group¹) and the frigate *Loch Killin*. This was the first success achieved with the new 'Squid' ahead-throwing anti-submarine weapon. On the 4th of August the surface ships scored another success when the *Stayner* and *Wensleydale*, which were on patrol off Beachy Head, encountered and sank U.671.

To sum up the results so far accomplished against the Channel and Bay of Biscay U-boats, the reader will remark that, whereas seven enemies were sunk and three badly damaged by our surface ships between the 1st of July and the 4th of August, our aircraft scored only two successes in those waters in the same period. The decline in the results achieved by the air patrols, which had done so outstandingly well when the Biscay U-boats first tried to enter the Channel², is a measure of the success of the 'Schnorkel' in countering the radar-fitted aircraft. None the less we should not forget that the air patrols undoubtedly added to the difficulties of the U-boats, by restricting their mobility and increasing the strain imposed on their crews.

The capture of Cherbourg on the 25th of June not only cut the German sea communications between the bases on the Brittany and Bay of Biscay coasts and those in the Channel, but also released American forces to drive south towards the base of the Cotentin peninsula, and so threaten the western flank of the entire German position in Normandy. A break-through on that front would, moreover, quickly isolate the great bases of Brest and Lorient.³ The new land offensive opened on the 3rd of July, but the German resistance was stubborn and a spell of bad weather handicapped the air support.

¹ See Part I of this volume, pp. 250-255.

² See pp. 67-68.

³ See Map 26.

Not until the end of the month did General Bradley's forces break through and open the way to the Brittany peninsula.

Meanwhile destroyers and coastal craft from Plymouth and Dartmouth started to scour the Gulf of St Malo and the Brittany coast for enemy shipping, and when the American army's advance on to the Brest promontory began, L.S.Ts came across to land supplies near Morlaix. One, and later two escort groups were also sent to patrol off Brest to catch any U-boats which might come out. On the night of the 5th-6th of July the 12th Escort Group, of four Canadian destroyers, was working close inshore when they sighted and engaged a convoy consisting of two U-boats accompanied by four escorts. One of the escorts was sunk, and two others were seriously damaged; but the U-boats themselves escaped. Ten days later a force of three destroyers caught and sank two anti-submarine vessels off Lorient. The German answer to this close blockade of the Biscay bases was to keep U-boats on patrol at the outer end of the swept channel leading to Brest, and to use glider bombs¹ against the escort groups. After the Canadian frigate *Matane* had been damaged on the 20th of July Mosquito fighters were sent to protect the surface ships, and thereafter the glider bombs were kept in check.

As the month of July advanced it became plain that great events were pending on land, and that a major victory over the German armies in Normandy might soon be achieved. If the defeated enemy withdrew eastwards he would be bound to evacuate some or all of the Biscay bases, and we realised that he would probably start to transfer the surviving U-boats to Norway well before the western bases were actually lost. This would shift the main focus of U-boat activity from the Bay of Biscay to the northern transit routes and the Norwegian coast. Moreover if such a shift occurred the Admiralty intended to route the Atlantic convoys much further south, and so bring them within reach of aircraft working from the Azores. Thus all the indications were that the main burden of the anti-U-boat air patrols would soon be carried by Coastal Command's No. 18 Group instead of No. 19 Group, and the Commander-in-Chief therefore decided to reinforce the former at the expense of the latter. The changes took place gradually, and were not completed until the end of September. We will return later to the results accomplished by the reinforced No. 18 Group.²

The Germans actually began to redistribute the Bay of Biscay U-boats early in August. First there was a considerable southward movement from Brest, Lorient and St Nazaire to La Pallice and Bordeaux, while five more boats were ordered into the Channel.

¹ These were the Hs.293 type of wireless-controlled bomb. See Part I, p. 30, for a description.

² See pp. 157-158 and 175-177.

Coastal Command at once shifted No. 19 Group's patrols to cover the southward movement, while Home Fleet cruisers and destroyers under Vice-Admiral F. H. G. Dalrymple-Hamilton, commander of the 10th Cruiser Squadron, came into the Bay to stop any attempt by the surviving German surface warships to escape from the trap which was closing on them.¹

A whole series of sweeps by Coastal Command air patrols, raids by Bomber Command, and of searches and bombardments by warships now took place off the Biscay coast; and the enemy suffered severely at the hands of all three arms. We cannot here recount the full details of all the many successes; but among them was the sinking of U.736 by the frigate *Loch Killin* on the 6th of August, again with the new 'Squid' weapon. On the same day a squadron consisting of the cruiser *Bellona* and four destroyers (known as Force 26) encountered a convoy off St Nazaire consisting of two small coasters, a cable-layer and the aircraft repair ship *Richthofen*). In the ensuing action the whole enemy force, including five escort vessels of various types, was sunk or seriously damaged. Two days later No. 19 Group's Beaufighter Strike Wing destroyed an entire force of four minesweepers in the same waters. Two more naval squadrons, consisting of the cruisers *Mauritius* and *Diadem*, each accompanied by a pair of destroyers (called Forces 27 and 28 respectively), now joined Admiral Dalrymple-Hamilton. On the 12th the *Diadem's* force, in co-operation with the Strike Wing, sank a large mine destructor ship or 'Sperrbrecher' (7,087 tons) off La Rochelle. Three nights later it was the turn of the *Mauritius* and her consorts, which added another 'Sperrbrecher' to the toll of sunken enemy ships off La Pallice, and seriously damaged the destroyer T.24 and two minesweepers. So it continued, night and day, throughout the month, with only occasional pauses imposed by the weather. To try and counter the sweeps by the surface ships the Germans diverted three U-boats to lie in wait for them; but, far from achieving any success, two of them (U.608 and 981) were quickly destroyed. Meanwhile the battleship *Rodney* came across Channel, and on the 12th she bombarded the powerful German batteries on the island of Alderney, which might have interfered with our passing traffic, with her 16-inch guns.

When the combined offensive in the Bay of Biscay was about twelve days old, to be precise on the 16th of August, the Germans realised that, with the Allied armies on the outskirts of Brest, Lorient and St Nazaire, they had to move the U-boats from those bases quickly if they were to escape. Except for three U-cruisers, which left

¹ The only major German warships still in the Biscay bases were four destroyers, divided between La Pallice and Bordeaux. There was, however, still a considerable number of minesweepers and miscellaneous craft in various harbours.

for the Indian Ocean, and eight boats which were sent to patrol in the North Channel and Bristol Channel, all the U-boats left in the Biscay bases which could be made fit for sea, and some which were inward bound from the Atlantic or more distant waters overseas, were therefore ordered to make for Norway.¹ To divert the attention of our anti-submarine forces from this considerable movement, the enemy disposed a number of U-boats in the English Channel and around our coasts², and it seems true to say that their appearances contributed to the safe passages accomplished by all the boats bound for Norway.

In the Bay of Biscay the climax to the offensive came between the 22nd and the 27th of August. Then the cruiser *Mauritius* and the destroyers *Ursa* and *Iroquois* (R.C.N.) encountered a flotilla of seven patrol vessels off Belleisle and sank them all, No. 19 Group's Strike Wing sank the destroyers Z.24 and T. 24 (the only two of the four surviving destroyers which could be made fit for sea) while at anchor off Le Verdon, and a devastating series of Bomber Command and U.S.A.A.F. raids on Brest destroyed six large ships (23,477 tons) and nine smaller vessels in harbour. During the three weeks of this offensive the enemy's losses in the Bay of Biscay amounted to twelve U-boats³, eleven large ships (58,835 tons), two destroyers, and no less than fifty-three coasters, minesweepers, patrol vessels and miscellaneous craft. Moreover the breakdown of the German mine-sweeping service, which until this time had served them with outstanding efficiency, brought about losses on mines which, but for the destruction of so many sweepers, would probably not have occurred. By the 27th the German naval forces in the Bay of Biscay had almost ceased to exist. The only unsatisfactory feature of the period was that no less than thirty-one U-boats (twenty-two from Biscay ports and nine direct from the Channel and South-Western Approaches) had been successfully transferred to Norway; but no one who had noted the comparative inability of our air patrols to deal with the 'Schnorkel' boats during the preceding month could have been altogether surprised at that result.

Here we may conclude the story of the enemy's occupation of the Biscay bases. On the 18th of August, three days after the landings

¹ Three U-boats were left behind in Bordeaux, two in Lorient and one in La Pallice. All were either scrapped before the Allies captured the ports or scuttled. See Appendix Y for details.

² See p. 129.

³ The U-boats were U.736 (6th August), U.608 (10th), U.385 (11th), U.981 and U.270 (12th), U.618 (14th), U.107 and 621 (18th), U.984 (20th), U.180 (22nd), U.445 (24th) and U.667 (25th). The honours were divided remarkably equally between the various forces engaged. Four were sunk by surface ships, three by air patrols, three were shared between surface ships and air patrols, and two were mined. See Appendix Y for full particulars.

on the Riviera coast¹, Hitler ordered the evacuation of south and south-western France except for the fortresses of Brest, Lorient, St Nazaire, La Pallice and the Gironde ports. We were content to leave the German garrisons of the ports south of Brest contained, mainly by French resistance forces: and it was to them that Bordeaux fell on the last day of August. As however the Germans were still holding the mouth of the Gironde we were unable to make any use of the port, and the surrender of the last pockets of enemy resistance on the Biscay coast did not take place until the end of the war, when all the surviving warships and merchant vessels in those harbours were scuttled. But Brest itself was needed as an entry for American supplies and reinforcements. Accordingly on the 25th of August a heavy land, sea and air assault on the strongly defended base was opened. The famous old battleship *Warspite*, which had struck a mine on the 13th of June while on her way from the Normandy coast to Rosyth, had meanwhile been repaired sufficiently to play a further part in the Channel bombardments. She arrived off Brest on the day the assault began and engaged the coast defence batteries at a range of 30,000 yards. One novel feature of these bombardments was the use made of a mobile army unit, which had been specially formed to keep in wireless touch with our supporting warships as the battle front moved forward. The object was to speed up the transmission of calls for fire from land to sea, and to enable the ships to gain touch with their Forward Observing Officers as quickly as possible.

In spite of the scale and variety of the attacks made on the Brittany stronghold the Germans continued to resist stubbornly, and the town of Brest was not captured until the 18th of September. We then found the basins strewn with sunken ships; and so seriously were the docks, quays and jetties damaged that it was obvious that no substantial use could be made of the port for many weeks. As, however, the Allied advance had meanwhile carried our armies far to the east, Brest had in fact lost a great deal of its importance even before it fell into our hands.

One interesting result of the capture of the great French base was that we were able for the first time to inspect the German U-boat shelters. Although we knew from photographs that our repeated bombing attacks had not inflicted appreciable damage, and that they were undoubtedly very solidly constructed, what we actually found far surpassed our expectations. The fifteen pens (five of them open to the sea and ten of them dry docks) were indeed astonishing feats of construction. Roofs already sixteen feet thick were in process of being strengthened still further, and the Germans were introducing 'bursting spaces' for bombs between layers of concrete. When com-

¹ See pp. 96-100.

pleted the total thickness would have been about twenty-nine feet. Immense armoured doors gave access to the pens from the outside; and workshops, storerooms, a hospital, a power house and in fact all the amenities of a small town were provided inside the shelters. No less than nine of our 12,000-pound bombs had scored hits, but as none of them penetrated the roofs in condition to burst inside the shelters no serious damage was done.

It was in July 1940 that the Germans gained the great strategic advantage of occupying the Biscay bases, since when they had been a constant thorn in our flesh.¹ It had been mainly the German bombers working from western France which forced us to divert all our convoys round the north of Ireland in the summer of 1940, and to route our north-south shipping far out into the Atlantic; but the U-boats working from the Biscay bases and, for twelve months in 1941-1942, the powerful German surface squadron then stationed in Brest also caused us considerable anxiety.² Indeed the possession by the enemy for over four years of the naval and air bases on the Biscay coast must have contributed enormously to the losses we suffered in the Atlantic during that period. It was chiefly our hold on the bases in Northern Ireland and Iceland which then enabled our shipping to continue to flow homeward and outward by the one approach to these islands which still remained open; and had we ever lost control of that vital artery our defeat would only have been a matter of time. Now, in September 1944, Britain's shipping could again flow comparatively freely by the normal route through the South-Western Approaches, as well as round the north of Ireland. It remained only to reopen the English Channel to traffic proceeding to and from our east coast ports, most of which had, since the summer of 1940, been diverted round the north of Scotland.

We must now return to the English Channel where, in August, the U-boats accomplished a good deal more than in the preceding month. By the 14th eight were on patrol, and by the end of the month they had between them sunk six merchantmen (24,811 tons) out of various convoys, and also the Canadian corvette *Regina*, an L.C.I. and a minesweeper. Once again it was our surface escorts and patrols which achieved the only successes against them. The sinking of U.736, one of the Channel U-boats, by the frigate *Loch Killin* off Belleisle on the 6th was mentioned when we told the story of the Bay of Biscay sweeps and strikes³; but on the 15th the corvette *Orchis*

¹ See Vol. I, pp. 232-240.

² See Vol. I, pp. 371, 376, 378, etc., and Vol. II, pp. 79, 115, and 149.

³ See p. 130.

destroyed U.741 after she had attacked a convoy off St Catherine's Point, and five days later convoy escorts despatched U.413 to the south of Beachy Head. On the same day, the 20th of August, the 11th Escort Group caught and sank U.984, one of the Channel boats, as she was rounding Ushant on her return journey to Brest. In contrast to these successes our air patrols, though they carried out a great deal of flying, only gained glimpses of two enemies in August; and no damage was done by the only two attacks they carried out. The War Diary of the U-boat command fully confirms that the constant watch kept by the surface escorts and patrols in the narrow waters was by far the greatest danger they experienced at this time. By the end of August all the Channel U-boats except one were making for Norway, and their attempt to interfere with the supply traffic to Normandy may therefore be said to end on that date.

Meanwhile an important success had been gained on land. Between the 7th and 13th of August the German attempt to stop the southward American advance from the Cherbourg promontory by striking westwards towards the Cotentin coast at Avranches was defeated. American and British forces then converged in strength on the pocket around Falaise, in which the enemy's westward lunge had left a large number of men in danger of encirclement. On the 20th the enemy troops which had escaped from the trap began a headlong retreat towards the Seine, hotly pursued. At the same time the British Second Army struck eastwards along the coast, and once again the heavy bombarding ships gave their support. The advance on land now became very rapid, and although the garrison of Havre resisted stubbornly and was temporarily by-passed, on the 1st of September the Canadians entered Dieppe, the port off which their countrymen had suffered so heavily in the abortive raid of August 1942.¹ The harbour was found to be comparatively little damaged, minesweeping was at once put in hand, both to clear the captured port and to establish safe inshore channels for shipping, and the first supply ships entered on the 5th of September. It was while the sweepers were working off Havre on the 27th of August that a tragic accident took place. An air strike had been called up to attack an enemy force reported off Cape d'Antifer, and the Typhoons mistook our minesweepers for the enemy. The *Britomart* and *Hussar* were sunk, the *Salamander* was seriously damaged, and loss of life was heavy.

On the 4th of September the Second Army, after a headlong rush right across northern France and Belgium, entered Antwerp²; but for reasons to be discussed later that great port, served by the River Scheldt, did not become available to Allied shipping until the end of November—nearly twelve weeks after its capture.

¹ See Vol. II, pp. 240-252.

² See Map 32.

Apart from the concern constantly shown by the enemy regarding the effectiveness of the naval gun support, mentioned earlier¹, perhaps the greatest tribute to its value lies in the fact that it was nearly always given in response to calls from the Army; and such calls continued as long as targets lay within range of the warship's guns.

The capture of Havre marked the end of another phase in the invasion of Europe, for with Dieppe open to traffic, and the prospect that Havre and Rouen would also soon be ready to receive supply ships, it was no longer necessary to unload over the beaches of the former assault area. On the 7th of September the last sector ('Juno') was therefore closed, and a week later Admiral Rivett-Carnac moved his headquarters to Rouen, leaving only a small staff to carry the residual responsibilities for Arromanches. At about the same time all the coastal craft he commanded were sent back to England, the Support Squadron was released to other duties, and the seaward patrols were cancelled; for there were no longer any enemy ships to dispute our control of the waters of Seine Bay. On the 9th of September ships homeward-bound from Arromanches started to sail independently.

With the greater part of the supplies needed by the Army now being unloaded further east, we may summarise the accomplishments of the period between the end of the assault phase (24th of June) and the capture of Havre (12th of September). During those eighty-one days 1,410,600 tons of stores, 152,000 vehicles and 352,570 men were landed over the beaches or through the small ports of the British assault area. Apart from obliterating the German 'small battle units', the warships defending the crowded anchorages fought twenty-eight actions with enemy surface forces; and they swept 609 mines and engaged hundreds of shore targets in support of the Army. Now the last destroyers sailed to British ports, and only a few trawlers and motor-launches remained to look after the once busy anchorages. Responsibility for the inshore waters through which so many men and such vast quantities of stores and equipment had flowed since the 6th of June passed to the Commander-in-Chief, Portsmouth.

During the rapid advance to Antwerp the First Canadian Army detached forces to capture the Channel ports. Boulogne, Calais, Dunkirk and Ostend were all invested between the 6th and 8th of September. Ostend fell on the latter date, but the German resistance at Boulogne, Calais and Dunkirk was stubborn. It was the 22nd before the Canadians captured Boulogne; Calais was not entirely clear of enemies until the 1st of October, while the German garrison of Dunkirk did not surrender until the end of the war. The captured

¹ See pp. 51-52, fn. (2), and 61-62.

ports were all found to be badly blocked and damaged, and thickly sown with mines. Thus the Germans had sunk no less than twenty-six blockships in Boulogne and fourteen in Ostend; and it was obvious that some weeks would elapse before any considerable quantity of supplies could be unloaded in them.

The clearance of the enemy from Cape Gris Nez, near to Calais, brought to an end the duels between the long-range guns which both sides had mounted on the Straits of Dover in the summer of 1940¹; and the German guns actually had their last fling on the 26th of September, when they bombarded Dover heavily. The sites from which many flying bombs had recently been launched at British cities also passed into Allied hands. Thus the last days of September not only brought a welcome relief to the sorely tried British people, but also marked the restoration of our control over the Straits of Dover. The final Coastal Force actions in the Channel took place off Boulogne and Calais on the night of the 1st-2nd of October, after which the focus of activity by our inshore patrols shifted to the Belgian and Dutch coasts. Hereafter, although traffic from Britain to the Belgian and French Channel ports continued heavy, control of the narrow seas was only disputed by the occasional U-boats which penetrated into them.² Most of our east coast and Channel shipping still sailed in convoy, for the dangers from U-boats and mines had not yet been finally eliminated; but casualties among the merchantmen were now comparatively rare. It is therefore an appropriate moment to record that by the summer of 1944 no less than 2,000 convoys, comprising over 45,000 ships, had sailed from the great convoy assembly and terminal point at Southend since the beginning of the war.³

By the beginning of October the need to discharge the armies' fuel supplies much nearer to the front than the original 'Pluto' depots established at Port en Bessin and Cherbourg had become urgent⁴, and it was therefore decided to lay new cross-Channel pipelines from Dungeness to Boulogne. The first one was completed by the 26th of October, and before the end of the year no less than eight were ready. Although the plan to discharge fuel from tankers direct to the shore by short pipelines laid off Arromanches had been very successful, the long cross-Channel lines from the Isle of Wight to Cherbourg had encountered many difficulties, and had never fulfilled their purpose.⁵ It was this type of pipeline which was now laid across the

¹ See Vol. I, pp. 325-326.

² See p. 183.

³ The 2,000th convoy actually sailed from Southend on 21st July 1944. The total was then made up of 1,467 FN (east coast) convoys, 259 CW and EC (Channel) convoys, 184 OA and OAG (outward Atlantic) convoys, and 90 'operational' (i.e. troop) convoys.

⁴ See pp. 61 and 66.

⁵ See p. 29.

much shorter distance from Dungeness to Boulogne; and, benefiting from the experience gained from earlier failures and troubles, fewer difficulties were encountered this time. None the less by the early days of 1945 only 700 tons were being discharged daily, instead of the planned figure of 3,500 tons. The decision was, however, taken to persist with the project, and by mid-March 1945 3,000 tons were being delivered daily to the continent. As by that time the Allies had many ports available to receive tankers carrying bulk fuel it could, perhaps, be argued that the need for trans-Channel pipelines had long since lapsed.

In October the Supreme Command decided that Rouen and the other Seine ports were to serve the American Army, while Boulogne and Calais served the British. Dieppe was turned over to the French before the end of the year. The clearance of the Seine, which the Royal Navy carried out, was finally completed on the 6th of November, when the large blockship *Ole Wegger* was raised.¹ By the 21st Calais was fully open to traffic, and the train ferries were once again able to run straight into the port.

The rapid withdrawal of the German land forces from north-east France and the greater part of Belgium in September caused the evacuation of all their surviving merchantmen, auxiliaries and small warships from the Channel ports. The eastward movements generally took place by night, and under strong escort. The E-boats, of which thirteen remained fit for service, withdrew from Boulogne to Rotterdam and Ijmuiden on the 4th of September and only one, which was hit by the Dover batteries, was lost. Their primary task now became the laying of mines on our east coast convoy routes and off the Belgian coasts, but they were also used periodically to run supplies into Dunkirk. On the night of the 18th-19th of September four E-boats, covered by three others, successfully landed stores and ammunition for the beleaguered garrison; but the frigate *Stayner* and two of our M.T.Bs detected the covering force, and wiped it out. Our practice at this time was to send a radar-fitted frigate and a force of M.T.Bs to lie off the enemy's most probable approach route. As soon as the frigate picked up a target on her radar she would give the M.T.Bs the course to steer, and would herself move in to support them with her guns. This system, which corresponded to that used on our east coast since 1943, except that the radar watch was kept in a ship instead of a shore station, had proved itself against the German light forces from Havre which had often tried to attack the Normandy assault shipping.² Now the same experienced ships moved up-Channel, and one finds frigates such as the *Stayner*, *Thornborough*

¹ This was one of the whale oil factory ships captured by the raider *Penguin* in the Antarctic in January 1941. See Vol. I, p. 384.

² See p. 123.

and *Retalick* operating with the M.T.Bs night after night off the coast of Flanders.

With the elimination of the enemy's land, sea and air forces from the Straits of Dover the focus of operations moved still further to the east, and on the 18th of October the Dover Coastal Forces were therefore transferred to the Nore Command, which thenceforth became responsible for all patrols off the enemy coasts. The Germans had meanwhile managed to reinforce the E-boats in Dutch bases to a total strength of twenty, and they made a number of forays to lay mines off our east coast as well as in the eastern Channel; but our patrols were very alert and well-trained, and in the frequent clashes which took place between the two sides' torpedo craft the enemy was generally worsted.

While the light surface forces patrolled and watched off the German bases, No. 16 Group carried out almost continuous day and night sweeps. The short-range aircraft, which included a number of Fleet Air Arm squadrons lent to Coastal Command, searched the Dutch creeks and estuaries for enemy minesweepers and light craft, while the two Beaufighter Strike Wings constantly swept as far east as Heligoland in search of German convoys.

Table 29. *The Air Offensive against Enemy Shipping by Direct Attacks at Sea*

(All Royal Air Force Commands—Home Theatre only)

June–December, 1944

Month 1944	Aircraft sorties	Attacks made	Enemy Vessels Sunk		Enemy Vessels damaged		Aircraft losses
			No.	Tonnage	No.	Tonnage	
June . . .	2,662	521	16	15,472	4	11,914	23
July . . .	1,854	459	21	17,088	2	4,084	22
August . . .	1,670	632	33	46,232	2	4,592	31
September . . .	1,916	557	41	16,061	2	3,886	24
October . . .	1,267	270	15	13,659	3	10,029	12
November . . .	1,154	204	12	13,927	7	18,078	11
December . . .	1,330	251	10	20,417	13	46,532	21
TOTALS	11,853	2,894	148	142,856	33	99,115	144

It was at this time that No. 16 Group introduced the system of establishing an illuminated rendezvous, at which the strike aircraft assembled shortly before dawn, with the object of catching the convoys before they had reached the shelter of one of the harbours where they generally lay up in day time; but targets had by now become extremely scarce, and the Strike Wings' operations rarely

produced big results. In September the Beaufighters only managed to sink two merchantmen and five convoy escorts. No. 16 Group actually sent its strike aircraft as far as the south-west corner of Norway at this time, but even there few targets could be found. Nor did the last months of the year produce greater successes. The pattern of operations remained unchanged, and the Beaufighters continued to carry out a great deal of arduous flying for a comparatively small return.

Having considered the results of the R.A.F.'s offensive against shipping by direct attacks at sea it will be logical to record the results of the same service's minelaying campaign, before we resume the story of the fighting in the narrow waters of the Channel and southern North Sea. It was told earlier how Bomber Command started high-level minelaying (from above 10,000 feet) early in 1944.¹ By the middle of that year it had become a common practice, and, aided by the new position-finding radar (known as H2S) the accuracy of the lays had improved. None the less we now know that many mines fell on land, and so enabled the Germans to discover the ingenuities of our latest firing mechanisms.

Whereas in June the main R.A.F. and naval minelaying effort had been devoted to the approaches to the 'Neptune' assault area and the Bay of Biscay bases, in July, by which time the Allied armies were firmly established in Normandy, the mines were mostly laid off the Dutch and north German coasts, and off the Biscay ports. August saw a renewal of air minelaying in the Baltic, for the nights had by then lengthened sufficiently to give our bombers some protection from enemy fighters; and when it became plain that the Germans were about to evacuate their U-boats and shipping from western France, large numbers of mines were also laid off that coast. Between June and August the German minesweeping service managed to keep losses of ships down to a fairly low figure (under 10,000 tons per month); but the sweepers themselves, and also the convoy escorts, suffered heavily. The reader will note from Table 30 (p. 142) that the 4,072 mines laid during those three months sank 72 vessels (24,618 tons), most of which were small. Four U-boats, however, fell victims to mines in the same period², and another three were damaged.

The mines laid in the Baltic at once began to cause the Germans serious trouble, and interfered so greatly with their U-boat training programme that, after August 1944, they were never again able to use the whole of the Gulf of Danzig for that purpose. From the Allied point of view this was particularly welcome, since the new Type XXI

¹ See Part I of this volume, p. 288.

² These were U.415 on 14th July off Brest, U.180 on 22nd August in Bay of Biscay, U.667 on 25th August off La Pallice, and U.1000 on 31st August off Pillau. See Appendix Y for details.

and XXIII boats were now running trials.¹ Another important effect was the impact of our minelaying on the Swedes, who had by this time lost fifty-one ships of over 100,000 tons from various causes. On the 18th of August they withdrew insurance on ships sailing to German ports, and on the 27th of September they closed all their Baltic harbours to Axis shipping. A final and complete embargo was not, however, placed on trade with Germany until the 1st of January 1945. But the greatest cause for German anxiety over the situation in the Baltic, which they had controlled almost unimpeded since the early days of the war, arose from the Russian advance along the southern shore of that sea. Tallinn, the capital of Estonia, fell on the 22nd of September, and the Gulf of Finland was thus closed to the Germans. The Russians now concluded an armistice with the Finns, who had been fighting against them with German support since 1941, thus securing their northern flank and releasing more forces for the westward drives. On the 10th of October they reached the Baltic coast of Lithuania, cutting off all the German forces in Riga and other ports further east; and just over a week later their forces entered East Prussia for the first time. The threat to Danzig and the adjacent U-boat training area, and to the important German bases further west was now serious.

For the last four months of the year virtually the whole of Bomber Command's minelaying took place in the Baltic, the Kattegat and Oslo fiord. Sinkings rose to fifty-two ships of nearly 50,000 tons; and it was at this time that shortage of sweepers first began to produce serious difficulties for the enemy. Not only were many of them falling victims to mines, but our sea and air offensive in his coastal waters was destroying or putting out of action an ever-rising number; and air attacks on ports and shipyards were delaying the repair of damaged vessels. Unless these trends could be reversed a collapse of the entire German minesweeping organisation was bound to take place. Indeed we now know that it was shortage of sweepers rather than the ingenuity of our own mine designers which produced the most difficult problems for the German Navy at this time.

To sum up the results of our air minelaying during the latter part of 1944, although the tonnage of ships sunk was not high in relation to the number of mines laid, the cumulative effects of the campaign were substantial; and the delays caused to training the crews of new U-boats, and to trials of new types, were particularly favourable to our cause.² In December one Type XXIII boat (U.2342) was

¹ See Part I of this volume, pp. 17-18, and Part II, Appendix X for details.

² The author considers that, in the light of the fuller and more complete research recently made, the effects of our minelaying on the German U-boat campaign were previously underestimated. (See Vol. II, p. 394.) Though actual sinkings of U-boats by mines were few, the cumulative effects of the minelaying campaign were greater than was first believed.

destroyed by a mine in the Baltic and a Type XXI boat was badly damaged. Nor were the losses suffered by Bomber Command's minelayers unduly heavy.

Table 30. The R.A.F.'s Air Minelaying Campaign

(Home Theatre Only)

June–December 1944

Month 1944	Aircraft sorties	Mines Laid	Enemy Vessels Sunk		Enemy Vessels damaged		Aircraft Losses
			No.	Tonnage	No.	Tonnage	
June . . .	463	1,778	30	9,663	5	19,411	3
July . . .	178	708	14	6,494	6	8,212	2
August . . .	398	1,586	28	8,461	12	10,842	14
September . . .	185	748	11	13,982	9	22,271	4
October . . .	257	1,133	14	10,210	12	12,830	8
November . . .	170	750	13	9,819	10	12,790	2
December . . .	259	1,160	14	15,916	12	14,559	3
TOTAL . . .	1,910	7,863	124	74,545	66	100,915	36

NOTE: In addition to the enemy losses tabulated above 5 U-boats were sunk and five damaged by air laid mines in this period. See Appendix Y for details.

We must now return to north-west Europe to consider how it came to pass that the great port of Antwerp, which had been captured virtually intact on the 4th of September, did not become available as an entry for military supplies and reinforcements until nearly three months later. The keys to control of the eighty miles of the River Scheldt below Antwerp were held by the strongly fortified island of Walcheren on the north side of the river estuary, and by the territory around Breskens on the opposite bank¹; and as long as German forces remained established in those two places the Navy was unable even to start clearing the river.

Here it is appropriate to remind the reader of the ancient tradition, several times mentioned in these volumes, that once the Army has been successfully landed on a hostile coast, the Navy should subordinate its own interests to meeting the needs of the sister service. This tradition had, indeed, quite recently been reaffirmed by Admiral Sir Andrew Cunningham during the Mediterranean campaigns²; and there is no doubt that Admiral Ramsay was also guided by it during the period of his command which followed the successful execution of operation 'Neptune'. Thus when, a week before the start of the great advance from the Seine on the 29th of August, the Supreme Commander issued a plan instructing General Mont-

¹ See Map 32.

² See Part I of this volume, pp. 141–143.

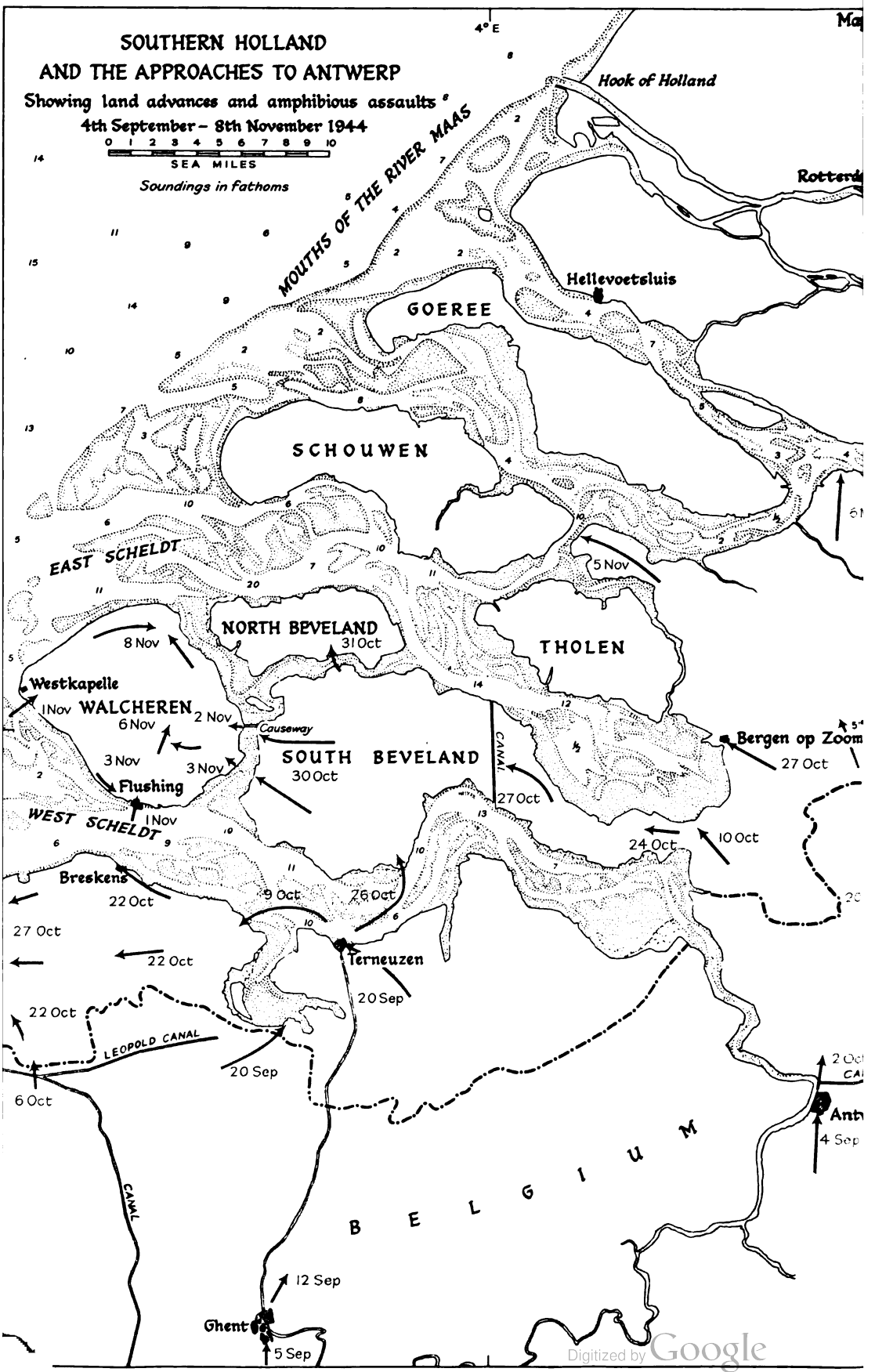
SOUTHERN HOLLAND AND THE APPROACHES TO ANTWERP

Showing land advances and amphibious assaults

4th September - 8th November 1944



Soundings in Fathoms



gomery's Twenty-First Army Group 'to operate to the north-eastward, securing successive bases along the coast with its final base as Antwerp', it was natural for the naval authorities to accept unquestioningly that the clearance and opening of the Channel ports had first priority among the many duties falling to their forces.

Although it may, at first sight, seem strange that no mention of the importance of rapidly opening the river Scheldt, and of exploiting the possession of Antwerp to promote military operations in north-west Europe, can be found in the contemporary papers of the Chiefs of Staff or Defence Committees, nor in those of their numerous sub-committees, it is certain that in British naval circles thoughts were strongly focused on those matters at an early stage. In view of the important part which control of Antwerp and the Scheldt had played during the previous three and a half centuries of British history it would, indeed, have been surprising had this not been so.¹ Thus Admiral Cunningham, the First Sea Lord, has stated that he drew the attention of the Chiefs of Staff to the urgency of the need to clear the enemy from the river banks on the very day the port was captured.² Nor is there the slightest doubt that, notwithstanding the priority initially given to the Channel ports, the naval forces needed to open the river could have been made available immediately the situation on land allowed them to start work.

For the details of the military operations of this period the reader must be referred to other volumes of this series³, but we may here note that, on receiving the Supreme Commander's orders of the 22nd of August, General Montgomery allocated the tasks given to him between the British Second and Canadian First Armies. While the former was to capture Brussels, Ghent and Antwerp, the latter was to cut off the Channel ports by advancing as far as Bruges, and then invest them.⁴ We have already seen how, by the 8th of September, Dieppe and Ostend had been captured, while Boulogne, Calais and Havre were closely besieged. Four days later Havre fell, and armoured forces also entered Bruges, only twenty miles from Breskens. They were, however, then held up on the Leopold Canal. Thus there were already indications that the clearance of the south bank of the Scheldt might be no easy task.

¹ For example in the operations against the Spanish Armada the purpose of our fleet was to frustrate the junction of Medina Sidonia's ships with Parma's army at Antwerp; throughout the wars of the seventeenth and eighteenth centuries with Holland and France control of the Scheldt was always a major issue, as was the defeat of Napoleon's intention to develop Antwerp as 'a pistol pointed at England.' The policy of preventing a major maritime power controlling the great waterway was continued in 1914, when we sent the Naval Brigade to try to hold Antwerp.

² To the author of this history; but no discussion of the subject is recorded in the minutes of the Chiefs of Staff Committee.

³ See L. F. Ellis, *Victory in the West*, Vol. II (in preparation).

⁴ See Map 32.

Meanwhile it had become apparent that General Montgomery and the Supreme Commander were by no means agreed on the strategy to be adopted for the next advance into Germany, and these differences of purpose had begun to influence all operations. Though we cannot here discuss in detail, let alone adjudicate on the relative merits of what were known as the 'narrow front' and 'broad front' strategies for striking into Germany, we may note that on the day that our troops entered Antwerp General Montgomery signalled to the Supreme Commander suggesting that 'we have now reached a stage when one really powerful and full-blooded thrust towards Berlin is likely to get there and thus end the German war'.¹ Such a proposal, however, General Eisenhower would not entertain, and on the 10th of September he met General Montgomery in Brussels to discuss future strategy. The military reasons for the Supreme Commander's refusal to accept Montgomery's strategic proposal form no part of this story; but among them was his awareness that the armies had far outstripped their supplies; and for the navies to be able quickly to replenish them 'our need for the early use of Antwerp' was, in his opinion, paramount.² On the same day, however, he authorised the Twenty-First Army Group commander to defer the clearance of the Antwerp approaches in an effort to seize the bridgehead over the lower Rhine to the north-east, and this decision led to the airborne assault at Arnhem being launched on the 17th of September. Meanwhile, on the British Second Army's front, the first attempts to force a way to the north-east from Antwerp had ended in failure, and the narrow neck of land leading on to the promontory of South Beveland had remained in German hands.³ This not only barred the only approach to Walcheren from the east, but left open an escape route for large numbers of the German Fifteenth Army, who had retreated from Normandy and the Seine valley, and were now ferried across the Scheldt to reform and continue the fight.

On the 4th of September the Prime Minister and Chiefs of Staff left London for the second Quebec conference, and they did not return until the 29th. That the question of Antwerp none the less took a prominent place in their deliberations is, however, shown by

¹ See Forrest C. Pogue, *The United States Army in World War II* (Department of the Army, Washington, 1954), p. 253; also Eisenhower, *Crusade in Europe* (Heinemann, 1948), p. 334. Montgomery, *Normandy to the Baltic* (1946), p. 193, and de Guingand, *Operation Victory* (Hodder and Stoughton, 1947), pp. 410-411 also refer.

² See Eisenhower, *Crusade in Europe* (Heinemann, 1948), pp. 335-336. Field Marshal Montgomery in his *Memoirs* (Collins, 1958), pp. 275-6, makes no mention of any emphasis being placed on Antwerp at the meeting on 10th September, and implies (op. cit., p. 283) that General Eisenhower did not order first priority to be given to opening the Scheldt until his message of 9th October 'Unless we have Antwerp producing by the middle of November, entire operations will come to a standstill'.

³ See Map 32.

the fact that on the 12th, on the motion of Field Marshal Sir Alan Brooke, the C.I.G.S., the Combined Chiefs of Staff sent a message to General Eisenhower drawing his attention 'to the necessity for the opening up of the north-west ports, particularly Antwerp and Rotterdam, before the bad weather sets in'; and four days later they informed the Prime Minister and President in identical words of the action they had taken.

On the 14th of September Field Marshal Montgomery¹, although his attention was chiefly directed to winning the bridgehead over the lower Rhine, as had been agreed with General Eisenhower at the meeting in Brussels on the 10th, issued a directive to the commander of the First Canadian Army in which he said 'we have captured the port of Antwerp, but cannot make use of it as the enemy controls the mouth of the Scheldt: operations to put this matter right will be a first priority for Canadian Army . . . the whole energies of the [Canadian] Army will be directed towards operations designed to enable full use to be made of the port of Antwerp'. But as the same directive required the Canadians also to capture Boulogne and Calais, and in summarising his strategic intentions Montgomery stated that '*our real objective . . . is the Ruhr*', it seems clear that the Field Marshal considered the several tasks allocated to the Canadians to be within their sole capacity, and that he did not envisage the need to modify or delay his attempt to win the bridgehead over the lower Rhine in order to clear the banks of the Scheldt quickly.²

Meanwhile in London the delay in bringing Antwerp into use was causing growing anxiety, especially in the Admiralty. By the middle of September it had become plain that the armies' needs could not be fully met—at any rate in the near future—through the blocked and wrecked Channel ports. Furthermore L.S.Ts and landing craft had to be used to run supplies into those small ports; and until ordinary merchantmen, such as could unload at Antwerp, had taken over the work, it was impossible to release the combined operations vessels to the Far East, where they were urgently needed. Thus the execution of future plans was being endangered by the delay in gaining the use of Antwerp.

By the 25th of September the airborne operation at Arnhem, on which high hopes had been placed, had narrowly failed; and little progress had been made towards weakening the enemy's grip on the banks of the Scheldt below Antwerp. Nor had the relative priorities

¹ General Montgomery had been promoted to Field Marshal on 1st September 1944.

² In his memoirs Field Marshal Montgomery admits to 'a bad mistake on my part—I under-estimated the difficulties of opening up the approaches to Antwerp so that we could get free use of that port. I reckoned that the Canadian Army could do it while we were going for the Ruhr. I was wrong.' *The Memoirs of Field Marshal Montgomery*, p. 297 (Collins, 1958).

between the clearance of the river and the next advance to the north-east yet been firmly decided. It seems possible that the fact that Admiral Ramsay was not at this time always invited to attend the conferences at Supreme Headquarters, at which strategy and policy were to be discussed, contributed to the naval aspects of current problems not being given due weight; but at a meeting held on the 5th of October the naval commander vigorously disputed Field Marshal Montgomery's assertion that 'we could take the Ruhr without Antwerp', and stressed that the opening of the river should be given first priority if the navies were to be able to meet the armies' needs.¹ On the day after this meeting the Canadians, who had recently cleared the Germans from Calais and the adjacent Cape Gris Nez, started to attack the pocket of resistance around Breskens; but much of the country was now flooded, and progress was very difficult. Breskens itself was not captured until the 22nd, and it took six more days to gain possession of the ground nearby where we wished to mount guns to bombard Walcheren on the other side of the estuary. On the 16th of October, however, Field Marshal Montgomery changed his plans, and concentrated the full offensive power of his Army Group on opening the river. We will return shortly to the operations which finally accomplished that purpose.

It is, of course, impossible to prove that a different choice of plans in September 1944 might have produced more favourable results on the whole campaign in north-west Europe; but it seems fair to suggest that the armies could not regain their full impetus until a first-class port close up to the front was available as entry for the sorely needed supplies and reinforcements. If that is so then it follows that the opening of the river demanded the highest priority *as soon as Antwerp itself had been captured*. Whether that would have enabled a successful thrust into the heart of north-west Germany to be made in the autumn of 1944 is likely to remain one of the unsolved riddles of the war; but it seems true to say that, had we gained the full use of Antwerp as quickly as possible, the Navy could have restored the land forces' mobility earlier than was the case, and so enabled the next offensive to be launched with all the power and impetus which had marked recent land operations. Lastly it is worth considering whether the ancient tradition that, once the Army has been landed in an overseas theatre, all purely naval considerations should be subordinated to the needs of the soldiers, was not carried too far in the autumn of 1944: and that the importance of clearing the banks of the Scheldt might have been represented earlier and more forcefully by the naval authorities. Though the establishment of correct priori-

¹ See W. S. Chalmers, *Full Cycle, The Biography of Admiral Sir Bertram Ramsay* (Hodder & Stoughton, 1959), pp. 248-253 for Ramsay's account of the meetings with Eisenhower and Montgomery at this time.

ties was probably hampered by the wide separation of Admiral Ramsay's headquarters from those of the Supreme Commander and Field Marshal Montgomery¹, it may be that the real lesson of the period lies in the need to maintain throughout a campaign the close inter-service collaboration which had so distinguished the planning and launching of operation 'Overlord'.

The island of Walcheren could only be assaulted by land across the neighbouring promontory of South Beveland, or by carrying troops across the Scheldt from Breskens to Flushing, or by a frontal assault from the sea.² The nature of the adjacent country, much of it very low lying and accessible to flooding, made it certain that the first alternative would be difficult, and probably costly. Moreover tidal conditions in the shoal-studded approaches to Walcheren would limit the suitable periods for a landing to two days in every fortnight; and, lastly, the enemy defences on the island itself were known to be very formidable.

On the 11th of September the staff of the First Canadian Army began to study the problems involved in assaulting the island, and the first plan was issued on the 19th. The intention then was only to make a land attack across South Beveland, aided by a paratroop operation, and the earliest date was considered to be the 27th. General Eisenhower, however, decided against the paratroop operation, which was therefore eliminated from the plan. On the 21st a big conference took place, and when General Crerar raised the possibility of an additional seaborne assault Admiral Ramsay said there was 'no obstacle from the naval side' to prevent the use of the Royal Marine Special Service Brigade. At the same conference General Simonds (commander of the Canadian II Corps³) urged that bombers should breach the dykes of Walcheren, so flooding the whole interior of the saucer-shaped island and making its defence more difficult. This proposal was approved by General Eisenhower on the 1st of October, and two days later Bomber Command successfully blasted a gap 100 yards wide in the dyke at Westkapelle. Between the 1st and 26th of October planning continued, and an additional seaborne assault at Flushing was introduced; but no joint

¹ Admiral Ramsay's headquarters moved from Southwick House, Portsmouth, to Granville on the west coast of the Cotentin Peninsula between 8th and 10th September 1944, just after the capture of Antwerp. General Eisenhower's headquarters were also at Granville at that time, but moved to Versailles, with a forward command post outside Rheims, on 20th September. Field Marshal Montgomery's main headquarters were near Bayeux in Normandy until the breakthrough at the end of August. They then moved forward to Brussels in two steps, but were not fully established there until early in October.

² See Map 32.

³ General Simonds took over command of the Canadian First Army from General Crerar, who was invalided to England, on 26th September.

outline plan, approved by the three Commanders-in-Chief, was issued, and it was nearly the end of the month before the units concerned received their operation orders. The chief cause of this pause was that Walcheren could not be assaulted until both the neighbourhood of Breskens and the whole of South Beveland had been cleared of enemies; and the reader will remember that it was the 16th of October before Field Marshal Montgomery gave the capture of the land approaches to Antwerp complete priority.¹

The 4th Special Service Brigade, commanded by Brigadier B. W. Leicester, R.M., consisted of Nos 41, 47 and 48 Royal Marine Commandos with a total strength of 2,135 officers and men, and No. 4 Army Commando.² After taking part in the assault on the Normandy coast on D-Day the Royal Marine Commandos had been fighting as infantry on the left flank of the British army. It was the acute shortage of trained infantry, and the fact that no new amphibious operation was at the time envisaged, which caused these specialised units to be allocated to the land forces. After crossing the Seine near Rouen, the Royal Marines entered Havre, and were then allocated to the forces investing Dunkirk. On the 27th of September they were released from that task, and moved to a base near Ostend to prepare for the attack on Walcheren. The assault troops were, however, to land from 'Landing Vehicles Tracked' (L.V.Ts) and amphibious vehicles known as 'Weasels', which were themselves to be carried from Ostend to the vicinity of the beaches in L.C.Ts; and not only were the marines unfamiliar with the L.V.Ts and Weasels, but such a novel technique plainly made it very desirable to carry out some preliminary training. As, however, the L.V.Ts were being used by the Canadian Army in operations around Terneuzen they could not be transferred to the Special Service Brigade until the end of October. For a time it seemed as though the whole operation would have to be postponed until mid-November; but on the 21st of October, at an informal meeting with his staff and Captain A. F. Pugsley, who was to command the naval forces, Brigadier Leicester declared his willingness to forego training with the L.V.Ts provided that the bombers had effectively breached the dykes and flooded the interior of the island. Next day air photographs confirmed that this condition had been met, and the decision to attack on the 1st of November was finally confirmed.

The naval forces which were to take part assembled at Ostend under Captain Pugsley on the 27th-28th of October, while the

¹ See p. 146.

² If the Brigade Headquarters and certain Army units attached to the brigade are included the strength commanded by Brigadier Leicester becomes 3,206. For the Walcheren operation one troop of Belgian, one of Norwegian and one of Dutch commandos was attached to it, all of them consisting of soldiers. They have been included in the figures given above.

L.C.As allocated to the assault on Flushing were collected at Terneuzen, whence they moved to Breskens on the last day of the month.

Meanwhile the 3rd Canadian Division continued with the clearance of the Breskens 'pocket', and on the 24th of October the 2nd Canadian Division started its advance on to South Beveland.¹ On the 26th and 27th landing craft carried two brigades of the 52nd Division across the Scheldt to join hands with the Canadians on South Beveland. All these movements encountered strong resistance on land, and the deep flooding of much of the countryside by the Germans added greatly to the difficulties of the troops. None the less by the end of the month they had reached the causeway leading to Walcheren itself, and the seaborne assaults on Flushing and Westkapelle were then set in motion.

Captain Pugsley's main force consisted of 181 vessels and landing craft; and the Royal Marine Commandos, who were to assault on both sides of the gap blown by the bombers in the dyke at Westkapelle, embarked in the latter. A squadron consisting of twenty-seven gun- and rocket-fitted landing craft was placed under Commander K. A. Sellar, who had gained much experience of inshore fire support off Normandy.² Heavy-gun support for the landings was to be provided by land artillery massed near Breskens, and by the 15-inch guns of the *Warspite*, *Erebus* and *Roberts*, all of whom had recently rendered similar service in the western Channel. The issues at stake were so important that Admiral Ramsay and General Simonds decided to disregard the threatening weather, and ordered the Ostend force to sail as planned on the last night of October. Captain Pugsley was, however, given discretion to cancel the assault if, when he arrived off Westkapelle, conditions were too bad. In fact the weather did deprive the heavy-gun ships of air observation, and also kept all the supporting aircraft grounded until just after 9 a.m.; but those handicaps were accepted.

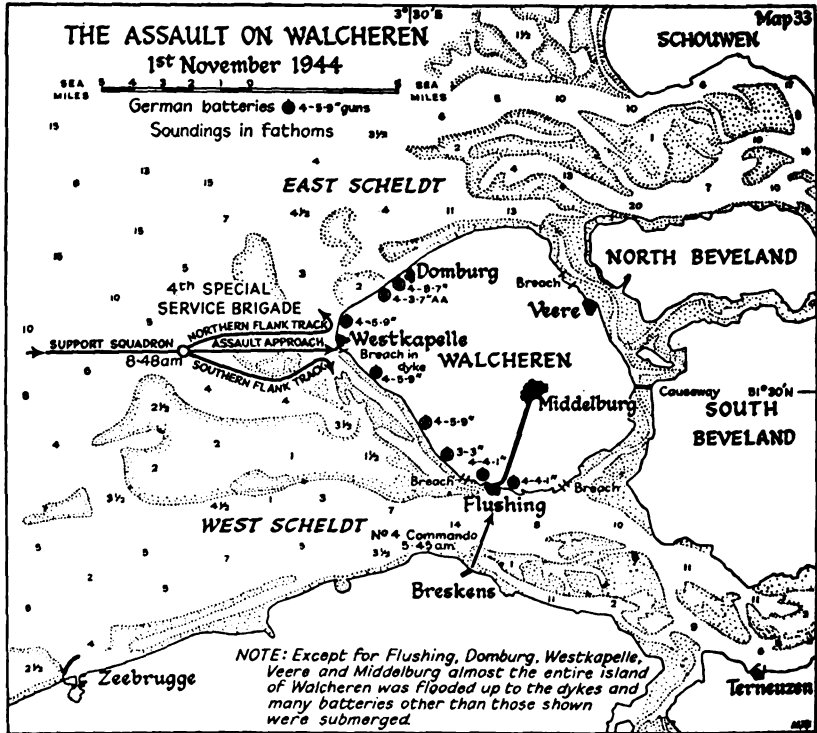
The first assault troops, consisting of No. 4 Army Commando, landed at Flushing at 5.45 a.m. on the 1st of November, and achieved complete surprise. Reinforcements followed quickly; and although resistance stiffened as the troops advanced into the town, and fighting continued until the early hours of the 4th, the issue was never in serious doubt. At Westkapelle the Royal Marine Commandos encountered perhaps the most formidable difficulties of any assault from the sea during the entire war. Apart from the numerous strong points which the enemy had built on the dykes, there were no less than ten batteries, mounting between them some forty guns (3-inch

¹ See Map 32.

² See pp. 122-123.

to 8·7-inch), capable of firing on the landing craft and offshore shipping.¹ Much depended on the ability of the heavy bombarding ships to neutralise these, but Commander Sellar's support landing craft were ordered to close the shore with the assault waves to draw on themselves a proportion of the German shell fire.

As the force moved in towards Westkapelle on the morning of the 1st of November the weather improved, and the commanders had



no hesitation in ordering the assault to proceed. Shortly before 9 a.m. the heavy warships opened fire on the enemy batteries, and the support craft closed the shore. At about the same time the fighter-bombers and rocket-firing Typhoons managed to take off and, although flying conditions were still very bad, they carried out low-flying attacks on the beach defences and the principal German batteries just before the touch-down.

As had been expected Commander Sellar's vessels soon came under heavy fire, and losses began to mount; but the survivors replied vigorously, and undoubtedly attracted to themselves a great deal of the gunfire which might have been directed at the assault craft with

¹ See Map 233.



Operation 'Dragoon', the invasion of southern France, 15th August, 1944.
An assault convoy approaching the coast. Taken from H.M.S. *Pursuer*.
The preliminary naval bombardments of the assault beaches near
San Raphael. Taken by an aircraft from H.M.S. *Attacker*.





Operation 'Infatuate', the assault on Walcheren, 1st November, 1944

The Royal Marines assault at Westkapelle.





The end of the *Tirpitz*, showing her capsized in a fiord near Tromsø after attack by R.A.F. Lancasters on 12th November, 1944.





Arctic Convoys, 1944-5

A Liberty ship returning homeward from North Russia.

Convoy R.A.64. H.M.S. *Scorpion* in foreground.

(Photograph A. J. F. Ditcham)



fatal results. As H-Hour was at 9.45 a.m., four hours after the attack on Flushing, the Commandos could hardly expect to achieve surprise. In fact it was quickly apparent that the defenders of Walcheren were fully alert. Moreover a delay of about fifteen minutes in the arrival of the assault waves, and also some confusion, were caused when a rocket-firing L.C.T. on the southern flank was hit, swung off course and inadvertently fired some projectiles. They fell on the northern flank, and were mistaken by other rocket craft for their own ranging salvos, which had just been fired. These latter vessels, whose navigational position was in error, then fired two full banks of rockets, which fell among our own assault craft and caused damage and casualties.

In spite of this mishap the assault waves managed to land on each side of the gap in the dyke, as had been intended, and the Commandos got ashore without suffering unduly heavy losses. Their accomplishment was no doubt aided by the fire of the support craft, and by the heavy ships engaging the main enemy batteries; but two special L.C.Gs (Landing Craft Gun) of a new type, which deliberately beached themselves on the flanks of the gap, were destroyed.

Once ashore the marines worked their way along the dyke in both directions; but the craft carrying the special assault equipment, which should have been landed immediately behind them, suffered heavily, and very few of the armoured tanks, bulldozers and other special fighting vehicles got ashore safely.

Throughout the forenoon a furious land and sea battle raged around the scene of the assault. Both the Support Squadron and the troop-carrying craft suffered severely, and Commander Sellar was finally left with only seven of his twenty-seven vessels undamaged. Captain Pugsley now ordered the surviving craft gradually to withdraw. During the afternoon the heavy warships and fighter-bombers continued to engage the German batteries, but the former were handicapped by lack of air spotting. They withdrew at dusk, but the monitors returned next day and continued to give their support. The *Warspite's* guns were however worn out by this time, and she took no further part in the fray.¹

On the night of 2nd-3rd of November the causeway from South Beveland to Walcheren was captured by the Canadians, who were supported by a flank movement by assault craft which carried troops across the shallow channel and mud flats to the south. With all three attacks on Walcheren now progressing favourably its fate was sealed, and on the 8th of November the German garrison formally surrendered. Our total casualties (about 7,700) were heavy, and it was

¹ The bombardment of Walcheren was the last action fought by this famous battleship, whose active career had lasted thirty-two years. See S. W. Roskill *H.M.S. Warspite* (Collins, 1957).

to be expected that the Commandos, who lost forty per cent of their troop-leaders, and the crews of the support landing craft should have suffered the most seriously in proportion to the numbers engaged. But 29,000 prisoners were captured, and with the island in our hands we could at last make headway with clearing the Scheldt and opening Antwerp. The assault on Walcheren will stand for all time as one of the finest episodes in the long history of the Royal Marines.

One of the officers of the Special Service Brigade wrote the following account of the marines' entry into the shattered town of Westkapelle: 'The morning after the battle the main street was a brave show of Dutch flags, and every girl's hair was tied with orange-coloured ribbon. These gallant and long-suffering people had little with which to greet their liberators. All they had was apples, and those they gave freely. . . . That morning a little Dutch boy in an orange sash, waving a large Dutch flag stood on top of the dyke as the marines moved up, shouting "Good morning! Good morning!" in a shrill treble voice. The marines were, however, a little *blasé*. Since D-Day . . . they had liberated many such villages. But this little boy insisted on his "Good morning" until at last the marines noticed him, waved and shouted in response as they went by. Thereupon the Dutch flag was waved wildly in the air, and the little boy fairly danced with glee, still shouting "Good morning! Good morning!"'

While the combined operation against Walcheren was being planned and executed German E-boats carried out minelaying sorties and torpedo attacks on ships in the Scheldt estuary and moving along the Belgian coast, though with little success. The 'small battle units' also quickly reappeared in those waters. In October 'Linsen' and 'Marder', whom we had last encountered in Seine Bay¹, made several attacks on bridges, lock gates and jetties in the stretches of the Scheldt and Maas held by the Allies; but they did no serious damage. On the night of the 5th-6th of October a strong force of 'Linsen' from Flushing tried to attack our minesweepers off the Belgian coast; the foray was, however, a fiasco—chiefly because the weather was very bad—and thirty-six of the explosive motor-boats were lost. Still the Germans would not give up. They sent a fresh flotilla of sixty 'Linsen' to Dutch bases, and they made four more sorties before the end of that month; but, as so often before, the losses they suffered were out of all proportion to the successes achieved.

¹ See pp. 125-126 and Appendix W.

During the last two months of the year both 'Linsen' and 'Bibers' (one man submarines) made many more sorties; but they were roughly handled by Allied sea and air patrols. Thus on the 5th of December our fighter-bombers almost wiped out a force of twelve 'Linsen', and in further sorties made on the 17th-19th many others ran aground and were lost. The 'Bibers' first attempt against shipping in the western Scheldt took place on the night of the 22nd-23rd of December. Some ran straight into our M.T.Bs, which sank several of them and also two E-boats off the Hook of Holland. The 'Bibers' managed to destroy a 4,700-ton ship off Flushing, but none of them survived to tell the tale. Two more sorties took place in the last week of December, but heavy losses were again suffered for only a very small return. By the end of the year 115 'Linsen' and 52 'Bibers' had been destroyed by our patrols, or overwhelmed by the unfavourable weather which they often encountered. The German Flag Officer, North Sea, now proposed to stop operations of this type, until such time as the new midget submarines ('Seehunds') were ready¹; but Dönitz and the German Naval Staff insisted that the other types of 'small battle units' should continue what they called *Opferkämpfer*, or suicide operations.² We may here note that, in spite of its hazardous nature, there was never any lack of volunteers from the German Navy for this type of work.

The sweeping of the eighty miles of estuary and river leading to Antwerp began on the 4th of November. A very large force, of no less than ten flotillas, was employed; and on the first day fifty mines were cleared. Some flotillas then went straight up to Antwerp, and the work proceeded from both ends. Though sometimes delayed by bad weather, the sweepers completed their task more quickly than we had expected. In all, they accounted for 267 mines in the river and the approaches to it, and on the 26th of November three coasters passed safely up-river. Two days later nineteen deep-laden vessels followed. Thus the opening of Antwerp may be said to date from the 28th of November, eighty-four days after its capture. By the beginning of December some 18,000 tons of supplies were passing through the port weekly.

After the opening of the Scheldt the E-boats several times attempted to attack the convoys sailing to Antwerp from the Thames; but the ships were strongly escorted, and the Nore Command destroyers and coastal craft had little difficulty in dealing with such forays. Moreover in December Bomber Command aircraft attacked

¹ See Appendix W.

² Literally 'self-sacrificing fighters'.

the E-boat bases at Ijmuiden and Rotterdam, and in the former they destroyed or damaged half a dozen craft, and also made many of the concrete shelters unusable.

The last two months of the year produced a number of severe gales, which handicapped the minesweepers in their unceasing work of clearing the inshore channels, and also caused severe damage to the artificial harbour at Arromanches. With the capture and reopening of so many ports further east the traffic to the original assault area had declined enormously, and the 'Mulberry' was no longer needed. Gale damage was therefore not repaired, and in December the dismantling of the movable equipment of the artificial harbour, such as the 'Whale' piers, went ahead fast. The blockships and 'Phoenix' caissons, many of which had been damaged by the force of the seas, were left in place until after the war, when the high price of scrap made it a profitable undertaking to raise the steel ships. For the rest the sea was allowed to do its work of dissolution unimpeded, and by the 1950s few signs of the temporary harbour works, on which so much labour and ingenuity had been expended, could be seen above the waters of Seine Bay. Among all the thousands of tourists and trippers who then visited the former assault beaches, some certainly came out of interest in the great events which had there been unfolded; but the majority were probably seeking only the innocent amusements of happy holiday-makers. In any case before many years had passed it needed great imagination to visualise the scenes which had taken place off that stretch of coast; for man and nature had combined to cover and conceal the scars on land, and the ceaseless surging of the sea had left few traces above high water of what we had so laboriously constructed to withstand it.

On the last day of the year Admiral Rivett-Carnac hauled down his flag, and the British Assault Area Command ceased to exist.

CHAPTER XVIII

HOME WATERS AND THE ARCTIC 1st June—31st December 1944

'The first of September [1597] . . . we got to the west-side of the River of Coola [Kola] and entered upon it . . . The second, in the morning, we rowed up the River . . . and late in the evening got to Coola, where some of us went on land . . . and we were all exceedingly glad that God of his mercie had delivered us out of so many dangers and troubles, and had brought us thither in safety.'

The Third Voyage Northward [of Willem Barents] in Anno 1596. Written by Gerat de Veer.

Printed in *Purchas His Pilgrimes*, Vol. III, pp. 517-518 (London, 1625).

WE have already seen how, in April and May 1944, the Home Fleet undertook a series of operations off the Norwegian coast with the double object of attacking the enemy's inshore traffic with carrier-borne aircraft and of furthering the strategic deception plan designed to convince the Germans that we intended to invade Norway.¹ On the 14th of June Admiral Sir Henry Moore succeeded Admiral Fraser in command of the fleet, and in that month the 1st Cruiser Squadron and other ships twice came south into the North Sea for diversionary purposes during the landings in Normandy, and to guard against any westward movement by German warships from the Baltic. Another operation to supply the garrison in Spitzbergen also took place at that time.

As soon as the success of the Normandy invasion seemed assured, the Admiralty turned its attention to the question of restarting the Arctic convoys. As a first step it was plainly desirable to inflict further damage on the *Tirpitz*, which was still in Altenfiord and might by this time have repaired the injuries received in our earlier attacks.² The Admiralty's contemporary assessment of her condition was that by June she would be capable of 'limited operations'; and, quite apart from the need to safeguard the Arctic convoys, it was impossible

¹ See Part I of this volume, p. 279.

² The midget submarine attack of September 1943 and the naval air attack of April 1944. (See Part I of this volume, pp. 66-69 and 275-278 respectively.)

to carry the strengthening of the Eastern Fleet at the expense of the Home Fleet any further until the *Tirpitz* had been sunk or put permanently out of action. The fleet carriers *Victorious* and *Indomitable* had sailed for the Far East on the 12th of June, and their new sister-ships *Implacable* and *Indefatigable* did not arrive at Scapa to replace them until early in the following month. As to modern battleships, the *Howe* had sailed to the east on the 1st of July, while the *King George V* and *Anson* were refitting preparatory to following her. Thus the *Duke of York* was the only modern battleship available to Admiral Moore after the beginning of July.

To implement the Admiralty's purpose of inflicting further damage on the German battleship, Admiral Moore sailed from Scapa on the 14th of July in the *Duke of York* with four cruisers and twelve destroyers; while Rear-Admiral R. R. McGrigor, commanding the 1st Cruiser Squadron, took command of the three fleet carriers *Formidable*, *Indefatigable* and *Furious*, in which forty-five Barracuda torpedo-bombers and fifty fighters were embarked. The attack on the *Tirpitz* took place in the small hours of the 17th, but the enemy received adequate warning of the approach of the carrier aircraft, and by the time they arrived over the target everything was shrouded in dense smoke. Bombing thus had to be carried out 'blind', with only very vague indications of where the battleship actually lay. No hits were obtained, and a second attempt was frustrated by fog.

This unsuccessful operation convinced Admiral Moore that it was futile to continue such attacks using Barracudas. They were so slow that the defences were bound to be alerted when they crossed the coast, thus giving the enemy ample time to lay their smoke screen. The Admiralty, however, considered that repeated attacks over a period of forty-eight hours might wear down the defences, and exhaust the supply of smoke-making material; and the Commander-in-Chief therefore agreed to repeat the attempt. As an alternative to the Barracudas the possibility of using Mosquito bombers from the carriers was discussed at this time; for their higher speed and longer range would greatly improve the prospect of achieving surprise, and they could carry one 2,000-pound armour-piercing bomb each. As, however, all the Mosquitos were working with the expeditionary forces, generally to escort strategic bombers on their raids into Germany, the agreement of General Eisenhower had to be obtained; and he considered their transfer to such a purpose unjustifiable. It thus came to pass that no further attacks on the *Tirpitz* took place before the first of the new series of Arctic convoys sailed. In July the fleet did, however, carry out another carrier air attack on shipping in the Norwegian 'Inner Leads', and also a mining operation designed to force the enemy's traffic further from the coast—very

similar to the well-remembered operation 'Wilfred' of April 1940.¹ But fog again frustrated the bombers, and the fighters which searched for enemy shipping off that difficult coastline met with small success. Though the material results of the operation were not great, it did perhaps help to keep the Germans in Norway in a state of uncertainty regarding our strategic intentions, and so prevent the transfer of any appreciable part of the large garrison to join the forces opposing General Eisenhower in France.

The problem of defending the Arctic convoys did not appear to Admiral Moore to have changed appreciably since the previous April. In addition to the *Tirpitz* and five destroyers in Altenfiord, there were thirty-two U-boats based on north Norway, and the Commander-in-Chief thus felt bound to escort and cover the convoys with strength comparable to that which had been so successfully deployed in the previous series.²

Before the first convoy sailed, however, Coastal Command's No. 18 Group, which had just been reinforced by detachments from the very experienced squadrons (Nos 59 and 120) in Northern Ireland and Iceland, made a valuable contribution to its safety. The Admiralty had expected the U-boats to try to attack the Home Fleet carriers as they returned from their attack on the *Tirpitz*, and on the 17th of July the long-range air patrols were therefore placed across the fleet's return track. That same evening a Liberator sighted and sank U.361, just where we expected to find the enemy's patrol line. A few minutes later one of No. 210 Squadron's Catalinas encountered U.347 on the surface, and at once attacked with depth charges from a low height. The attack proved lethal to the U-boat, but the aircraft was badly damaged by anti-aircraft fire, and its captain, Flying Officer J. A. Cruickshank, was seriously wounded. None the less he managed to struggle safely back to base.³ Next day another of the same squadron's Catalinas dealt as effectively with U.742, though the attacker was again badly damaged by the U-boat's gunfire. On the 19th the long-range air patrols encountered three more of the same group of U-boats; but although all of them were seriously damaged in the ensuing attacks none was sunk. One may sympathise with the Liberator of No. 86 Squadron which, on the 23rd, straddled U.992 so perfectly with her depth charges that one of them hit her bridge, and disintegrated without exploding. Attacks continued until the 24th, when the long-range aircraft reverted to their normal patrols over the northern transit area.

While some of No. 18 Group's aircraft were thus coping with the

¹ See Vol. I, pp. 156-158.

² See Part I of this volume, Chapter X.

³ For this successful action, and his accomplishment in bringing his Catalina home safely, Flying Officer Cruickshank was awarded the Victoria Cross.

Arctic U-boats, others were searching for the patrol line which the enemy had maintained off south-west Norway since June as a precaution against invasion.¹ In those waters, on the 15th of July, a Liberator of No. 206 Squadron attacked U.319 at a very low height and destroyed her, but was shot down in the process. Norwegian-manned Mosquitos also made many gun attacks on the same patrol line, and inflicted such casualties on the U-boat crews that the whole group was recalled to harbour.

One unhappy incident which took place in the course of these long-range air searches must be mentioned. Towards the end of July four ex-British submarines left for Russia manned by crews from that country, as part of the arrangements made to compensate the Russians for receiving none of the surrendered Italian warships.² While on passage the former *Sunfish* (renamed B.1 by the Russians) was sunk with all hands by a Coastal Command aircraft which encountered her well outside the zone in which air attacks had been forbidden during the submarines' passage. The B.1 had been instructed to make her passage on the surface, and to fire recognition signals if approached by aircraft; but she dived on sighting the Liberator which, not unreasonably, assumed her to be a German. The tragedy, which was similar to one we had experienced earlier in the war³, emphasised again the need to allow a very wide margin of safety whenever friendly submarines and aircraft were working anywhere near each other.

In summing up the results of this short but redoubtable offensive by No. 18 Group, it should be remarked that all the successes obtained in the Arctic were against U-boats which had not been fitted with 'Schnorkel' but had been equipped with the latest A-A. armaments. It was their deliberate policy to stay on the surface and fight it out with the aircraft. Such tactics represented a return to the conditions experienced in the Bay of Biscay during the period of Coastal Command's high achievement (1st of May to 2nd August, 1943)⁴, and it detracts nothing from the credit for these successes to point out that, had the Arctic U-boats been Schnorkel-fitted, and had they adopted the tactics in use at that time in the south, they would have been far more difficult to locate and sink. Nor did No. 18 Group have long to wait before the truth of this was demonstrated, for in the following month many Schnorkel-fitted U-boats passed successfully out by the northern route, in spite of a great deal of flying by our air patrols.⁵

¹ See pp. 57-59 and Map 26.

² See Part I of this volume, p. 280 and fn. (1). The submarines were the former *Unbroken*, *Ursula*, *Unison* and *Sunfish*.

³ See Vol. II, p. 275, regarding the loss of the *Unbeaten* on 11th November 1942.

⁴ See Part I of this volume, Chapter II, Table 15, and Map 1.

⁵ See p. 176.

The successes achieved in the far north by No. 18 Group in July were an excellent augury for the restarting of the Arctic convoys. The first of the new series, JW.59, sailed from Loch Ewe on the 15th of August. It consisted of thirty-three merchantmen, a rescue ship and eleven Lend-Lease submarine chasers, which were being transferred to the Russian Navy to encourage our Ally to deal more actively with the U-boats which lay in wait for our convoys off Kola Inlet. The naval forces consisted of the cruiser *Jamaica*, the escort carriers *Vindex* and *Striker* and eighteen smaller warships. A new departure was that Vice-Admiral F. H. G. Dalrymple-Hamilton, who was in charge of the whole operation, flew his flag in the *Vindex* instead of in a cruiser. The former British battleship *Royal Sovereign*, which was being transferred to Russia as the *Arkhangelsk*, sailed from Scapa on the 17th of August with a British escort. She was met by eight Russian-manned ex-American destroyers at sea¹, overtook the convoy to the west of Bear Island, and then went straight through to Kola Inlet. Admiral Moore himself took the main strength of the Home Fleet to sea on the 18th to carry out another attack on the *Tirpitz* during the convoy's passage. He had with him the battleship *Duke of York*, the fleet carriers *Indefatigable* (flagship of Rear-Admiral R. R. McGrigor), *Formidable* and *Furious*, two ships of the 1st Cruiser Squadron, and fourteen destroyers. A second force consisted of the escort carriers *Trumpeter* and *Nabob* and the cruiser *Kent*, escorted by a group of frigates lent from the Western Approaches, while two fleet oilers sailed separately under the charge of four corvettes. By the 20th all forces had reached their positions off the Norwegian coast; but the weather prospects were so bad that Admiral Moore decided to postpone the attack on the *Tirpitz*, and to use the interval to refuel his destroyers. On the 22nd the weather was still indifferent, but the striking force was none the less launched at 11 a.m. It consisted of thirty-one Barracudas and fifty-three fighter-bombers or fighters (Corsairs, Hellcats, Fireflies and Seafires); but the minelaying by Avengers from the escort carriers was cancelled because, should they have failed to get through, they would have had to jettison their mines before landing on again. When the strike aircraft reached the coast they found the hills surrounding the fiord shrouded in dense cloud, and the torpedo-bombers were forced to return. The Hellcats and Fireflies, however, managed to find the target, and achieved some measure of surprise; for the *Tirpitz* was not concealed by smoke until after their attacks had started. But the one hit with a 500-pound bomb which they claimed is not confirmed by the enemy's records, and three aircraft were lost. In the evening a small force of

¹ These were ships of the 'Town' class originally transferred to Britain by the United States under the 'bases for destroyers' exchange of September 1940. See Vol. I, p. 348.

fighter-bombers from the *Indefatigable* attacked again, but scored no hits.

While part of the fleet was withdrawing to the westward to fuel on the evening of the 22nd the escort carriers encountered U.354, which was outward-bound from Narvik. She did not return from this patrol¹, but a message she signalled at the time shows that it was one of the two torpedoes which she fired that hit and badly damaged the *Nabob*, while the other sank the frigate *Bickerton*.

On the 23rd the weather was so bad that no flying was possible; but by noon on the following day the prospects seemed somewhat better, and another combined attack from all three carriers was launched. Thirty-three Barracudas, two dozen Corsairs (some armed with 1,000-pound bombs), and half a score each of Hellcats and Fireflies took part. Only the Hellcats arrived over the target before the smoke screen had completely enveloped her. The Barracudas and Corsairs attacked 'blind', but a 1,600-pound armour-piercing bomb from one of the former struck the battleship in an ideal position—right amidships just forward of the bridge. It penetrated eight decks, including the main horizontal armour, and came to rest right in the ship's vitals—where it failed to explode.² This stroke of ill-fortune undoubtedly deprived the carrier aircrews of the satisfaction of damaging their target severely; for the only other hit obtained was with a 500-pound bomb on the heavily protected roof of one of the battleship's main armament turrets. Five of our aircraft were shot down, mostly by anti-aircraft gunfire.

The *Furious* now returned to Scapa, having reinforced the *Indefatigable's* striking force before leaving the fleet. The old carrier, whose hull had been built for a battle cruiser during the 1914–1918 war, had given remarkable service in the later struggle; but she was now far past the allotted span of a warship's life, and it was obvious that her active career was drawing to a close.

After several days of alternating fog and gale, on the 29th the other two carriers tried again. Conditions were now quite favourable; but the enemy received adequate warning of the approach of the striking force, surprise was not achieved, the smoke screen was denser and the A-A. gunfire heavier than ever, and no hits were obtained. Various secondary targets on shore and afloat were also attacked; but German records do not confirm that any appreciable damage was done to them. The fleet returned to Scapa on the 1st and 2nd of September, and so ended a series of operations whose results can only be classed as intensely disappointing. Admiral McGrigor put forward

¹ See p. 161.

² The Germans took apart and inspected this bomb, and found that it had been only partially filled. Instead of 215 pounds of explosive it contained only about 100 pounds—a convincing example of how a failure in manufacture can prejudice an operation of war.

many suggestions for making future strikes at the battleship more effective; but the plain truth was that until we had faster aircraft capable of carrying a bomb which could do lethal damage to such a powerfully protected target, the possibility of sinking her by attack from the sea would remain remote.

Convoy JW.59, which had been steaming east during these fleet operations, had a comparatively uneventful passage. The weather was unusually favourable, and this and the continuous daylight enabled the escort carriers to work their aircraft almost continuously. The U-boats, of which nine were on patrol in the Barents Sea, were never allowed a chance to approach within striking distance, and the convoy suffered no losses at all. On the 21st of August the sloop *Kite* (formerly one of Captain Walker's famous 2nd Escort Group¹) was, however, hit by two torpedoes fired by U.344, and sank immediately. There were only nine survivors—an unpleasant reminder of the fact that the hazards of these operations had not yet been eliminated. The *Kite*, and also the *Bickerton*, did not however remain long unavenged; for on the 22nd the *Vindex's* Swordfish sank U.344 with depth charges, and two days later ships of the 20th Escort Group accounted for U.354.

The corresponding homeward convoy, RA.59A of 9 ships, had an almost unopposed passage. Only one U-boat was sighted, and she (U.394) was destroyed after attacks by Swordfish from the *Vindex* and a twelve-hour hunt by the 20th Escort Group.

The next pair of convoys (JW.60 and RA.60, both of thirty ships) were in charge of Rear-Admiral McGrigor, and again an escort carrier (the *Campania*) was chosen to act as flagship. They completed their journeys between the 15th of September and the 6th of October. Lest the *Tirpitz* should come out the battleship *Rodney* sailed with the outward convoy; but the precaution proved unnecessary. The only losses suffered during the double movement were two merchantmen in RA.60 sunk by U-boats.

Towards the end of August, after the latest carrier air attacks on the *Tirpitz* had failed to inflict appreciable damage, the Joint Planning Staff in London discussed ways and means of ending the impasse whereby the presence of the battleship in Norway was frustrating our desire to build up our naval strength in eastern waters. They suggested that the best hope of solving the problem lay in using shore-based bombers, provided that the Russians would agree to them landing in their territory after the attack. The Air Staff favoured the idea, and the Chiefs of Staff therefore instructed them to discuss it with General Eisenhower, who still had control of the bomber forces. On the 2nd of September General Eisenhower gave

¹ See Part I of this volume, pp. 48 and 251.

his agreement, and as the Russians had meanwhile promised to co-operate to the limit of their resources, the Chiefs of Staff instructed Air Chief Marshal Harris, Commander-in-Chief, Bomber Command, to go ahead. His plan was to use a comparatively small force of Lancasters, mostly armed with the heaviest available (12,000-pound) bombs, rather than Mosquitos; and he originally intended that thirty-nine of the heavy bombers should leave Scottish airfields on the evening of the 11th of September, attack shortly after dawn next day, and then land on an airfield near Archangel.¹ When however the weather started to deteriorate on the 11th, Harris decided to carry out the operation the other way round, and the whole force took off for Russia under Group Captain C. McMullen that evening. The Lancasters landed in very bad weather next day, and the Russian airfields were so primitive that six of them were damaged beyond repair. Moreover re-fuelling took nearly two days, and it was thus the 15th, the day on which JW.60 sailed from Loch Ewe, before twenty-eight of the bombers were again serviceable. They took off in the early hours, but did not achieve complete surprise, and the smoke screen caused considerable interference. None the less one direct hit and two very near misses were obtained with 12,000-pound bombs, and the damage they caused to the battleship could not be repaired where she lay. The Germans, who were at the time planning to withdraw from northern Finland and realised that they would in any case probably have to abandon Altenfiord, therefore decided to move the battleship to Tromsø, and to use her as a floating coast defence battery. The Lancasters, which had all returned safely to their temporary Russian base after the attack, came back to Britain between the 16th and 21st of September. Their operation had been admirably planned, the Russians had co-operated willingly within the somewhat rudimentary limitations imposed by their inadequate base facilities; and, by damaging the German battleship and driving her away from her outpost on the flank of the Arctic route, Bomber Command had achieved an important success.

While the R.A.F. Lancasters were dealing with the *Tirpitz*, other forces were devoting their attention to the shipping traffic off the Norwegian coast, where the enemy was running small but heavily escorted convoys to carry war stores to the northern bases and return to Germany with iron ore. The importance of this traffic was enhanced when, in August, Sweden refused any longer to insure ships trading to German ports, and in the following month closed its harbours to all German ships.² The tonnage and raw materials

¹ Thirteen of the striking force were to be armed with special 'mine-bombs', and the remainder with 12,000-pound bombs. Enemy records do not attribute any damage to the former weapons.

² See p. 141.

thereby lost to the Germans were substantial, and were further increased when, in September, the Russians signed an armistice with Finland, whose ships then also ceased to trade with Germany. The German convoys sailed to and from north Norway at fairly long intervals, and because of this and the configuration of the coast, with its innumerable inlets in which ships could easily hide, they were difficult to locate and to attack.

First in the field for the renewed offensive against the inshore traffic were the Home Fleet submarines, which restarted their patrols in August, when the nights had lengthened sufficiently to afford them some concealment. The zone normally allocated to them lay off south-west Norway between Stavanger and the Naze.¹ In September they had a profitable month, and the *Venturer* and *Sceptre* both attacked escorted convoys with success. In addition the French minelaying submarine *Rubis* placed her mines so skilfully that two large ships (11,044 tons) and two anti-submarine vessels fell victims to them. But perhaps the most stimulating event of the month's underwater warfare was the second penetration of Bergen harbour made by the midget submarine X.24 (Lieutenant H. P. Westmacott).² She was again towed by the *Sceptre* from the Shetlands to the offshore position from which she was to start the attack; and in spite of encountering a gale and losing one of her officers overboard, on the evening of the 10th she slipped her tow and made off towards Bergen submerged. By the early hours of next morning she was inside the harbour, and had not been detected. Westmacott then manœuvred his craft under the large floating dock, released the delay-action charges, and set off to sea to meet the waiting parent submarine. The charges exploded later in the day, and the dock was damaged beyond repair. The midget submarine and her parent arrived safely back in the Shetlands on the 13th, and for a long time the enemy remained unaware of the true cause of the damage they had suffered.

In the same month that the new submarine patrols began, namely August, the Home Fleet carrier aircraft started a series of sweeps and strikes against shipping passing up and down the 'Inner Leads'. The usual practice was to combine the laying of mines by Avengers from the escort carriers with bomber and fighter attacks by aircraft from the fleet carriers. The minelaying was generally successful, but bad weather frequently handicapped the strike aircraft. We found that the most effective plan was to send a fleet carrier to attack at any point on the whole Norwegian coast where the weather might be suitable; and later in the year Admiral Moore therefore twice hoisted

¹ See Map 41.

² See Part I, p. 285, regarding her first operation against the Bergen floating dock.

his flag in the *Implacable*, whose aircraft then ranged up and down the coast in search of targets. They sank three supply ships (3,145 tons) and three small warships, and damaged another dozen vessels of various types. On the 27th of October aircraft from the *Implacable* sighted the large transport submarine U.1060 on the surface off central Norway, and inflicted very severe casualties on the U-boat, which had a complete additional crew on board for passage.¹ The carrier air attacks forced her ashore, and also sank the escorting minesweeper. Two days later Coastal Command Liberators completed the destruction of U.1060 with rockets and depth charges.

The repeated offensive blows struck by the Home Fleet's carrier aircraft against the traffic passing up and down the Norwegian coast had important, if unexpected, effects on U-boat operations. In the first place, after the destruction of U.1060 the enemy ordered all boats to make their passages well out into the North Sea, unescorted and submerged, instead of passing through the 'Inner Leads' on the surface and with an escort. This, of course, increased the time spent on passage, and reduced correspondingly the length of their patrols. Secondly, the Germans decided to station U-boats off the Orkneys to catch the carriers as they left or entered Scapa Flow. The first two arrived early in December, and one of them (U.297) was unlucky enough to run straight into a hunt which an escort group was conducting off Cape Wrath for a different enemy (U.775), which had just sunk the frigate *Bullen*. The hunters apparently changed foxes during the chase; for U.775 escaped, and it is virtually certain that it was U.297 which was sunk on the 6th of December by the frigates *Loch Insh* and *Goodall* of the *Bullen's* group.²

Two more U-boats arrived off the Orkneys later in December; but when U.312 tried to break into Scapa Flow through Hoxa Sound, so emulating Prien's successful entry by Kirk Sound in October 1939, all she accomplished was to damage herself severely.³ None of the U-boats stationed off the fleet's main base towards the end of 1944 ever sighted any of the aircraft carriers they had been sent to catch.

The month of September, which had produced such good results by our submarine patrols off Norway, also saw the revival of No. 18 Group's anti-shipping offensive in those same waters. The reader will remember that it had lapsed since the previous May, when Coastal Command concentrated its main effort on supporting the Normandy landings.⁴ Now the group's Strike Wing, which was

¹ This was the crew of U.957, which had been badly damaged in collision with a German ship off the Lofoten Islands on 19th October, and had been paid off.

² The destruction of U.297 was wrongly credited to a Coastal Command Sunderland until recently.

³ See Vol. I, pp. 73-74, and Map 6.

⁴ See Part I of this volume, p. 286.

stationed at Banff on the east coast of Scotland, was reformed and reinforced. It entered the fray with a series of sweeps between Kristiansand (south) and Aalesund, and sank eleven ships (7,024 tons) during September. The Germans then ordered their convoys to take shelter in the fiords by day and only continue their passages in darkness. This produced the need for the striking forces to be ready off the enemy coast, 200 miles from their base, shortly before dawn; and the new technique introduced earlier by No. 16 Group for its attacks off the Dutch coast was therefore adopted off Norway.¹ It consisted of establishing a sea rendezvous marked by flares and flame floats at which the strike aircraft, which had been sent out in darkness, concentrated. The first attack in which these tactics were employed took place on the 9th of October against a convoy of five ships with six escorts. One supply ship and one of the escorts were sunk. Next two Halifax squadrons, formerly employed on night anti-U-boat operations, joined No. 18 Group, and during the last two months of the year the day sweeps by the Strike Wing were also intensified. The air offensive thus moved a stage nearer accomplishing Coastal Command's aim, which was to deprive the enemy of any period during the twenty-four hours when he could rely on his convoys being able to move in comparative safety. In November No. 18 Group accounted for seven ships (11,370 tons), and in December for nine (20,367 tons) off the Norwegian coast.

As the autumn nights lengthened into winter the patrols by Home Fleet submarines were also strengthened. On the 14th of October the *Viking* sank a 1,300-ton ship in a convoy which she encountered off Bodö. A week later the *Sceptre* attacked a large convoy at night, and believed she had hit two ships; but the enemy's records make it plain that her only victim was one of the convoy's escorts. On the 11th November the *Venturer*, however, scored a conspicuous success off the Lofoten Islands. She suddenly sighted a U-boat's conning tower, and in a quick and skilful attack sank U.771, which was inward bound for Narvik after operating in the Arctic. December saw the French submarine *Rubis* make her last patrol. She had joined the Home Fleet at the time of the Norwegian campaign in April 1940, and during the succeeding four and a half years she and her Captain (Lieutenant-Commander H. L. G. Rousselot) had won for themselves the high regard of the British submarine service. She had carried out no less than twenty-two minelaying operations, and her personal score was fifteen enemy merchantmen (25,770 tons) and eight small warships sunk—nearly all by the mines which she had repeatedly and skilfully laid in enemy waters.

In addition to the submarine and air offensives off Norway

¹ See p. 139.

already described, in October the Norwegian-manned M.T.B's working from the Shetlands resumed their raids into the 'Inner Leads'.¹ They generally worked in pairs, lying up at night in among the numerous fiords and islands, to ambush passing convoys. During the last three months of the year they carried out no less than eight attacks on shipping. Although enemy records by no means confirm all the successes claimed at the time, they did sink or drive ashore four ships (10,960 tons) in that period, and also destroyed three small escort vessels.

Besides attacking the enemy's coastal traffic, the M.T.Bs played a prominent part in the clandestine operations which were such a marked feature of the Norwegian people's resistance to the German occupation. They frequently landed stores and arms for sabotage purposes, picked up resistance leaders and brought them to Britain, and supplied or relieved the coast-watchers who reported enemy shipping movements. In addition they carried out countless other crepuscular undertakings designed to harass and annoy the enemy, and to force him to retain large forces in the country for security purposes. The aggregate effect of all the many pin-pricks they inflicted was undoubtedly substantial.

In the middle of November the pressure against the enemy's coastal traffic off Norway was increased by the execution of a plan which Admiral Moore had for some time been hoping to carry out. Two Home Fleet cruisers (the *Kent* and *Bellona*) and four destroyers swept the waters near Lister Light, from which we had been driven for lack of air cover in April–May 1940.² They encountered a German convoy of four ships and six escorts, and sank two of the former (3,384 tons) and all but one of the latter.

It will probably not have escaped the reader's notice that, with the submarine patrols, the Fleet Air Arm's carrier-borne offensive, the operations by No. 18 Group's reinforced Strike Wing, and the raids by M.T.Bs, there was in the autumn of 1944 a plethora of vessels and aircraft all trying to destroy the same targets off the Norwegian coast. It is therefore not surprising that the various interests should sometimes have clashed. Thus Coastal Command viewed with disfavour the presence of our submarines in waters through which all U-boats bound from Germany to the north had to pass, since a zone in which air attacks were prohibited had to be established in order to safeguard our own submarines. In November the Admiralty therefore withdrew the submarines for a trial period of three weeks; but as no compensating successes against U-boats

¹ See Part I of this volume, p. 102, regarding earlier operations by Norwegian-manned M.T.B. flotillas.

² See Vol. I, Chapter X and Map 5.

were achieved by Coastal Command aircraft the submarine patrols were then re-instituted.

Before leaving the many-sided offensive against the Norwegian inshore traffic it will be convenient to summarise the results accomplished by the various arms. In September and October it was our submarines and Fleet Air Arm aircraft which did most of the damage; but with the restarting of Strike Wing operations and the temporary withdrawal of the submarines, No. 18 Group's successes overtook those of the other arms. In November, however, it was the attack by Home Fleet cruisers and destroyers that achieved the most satisfactory results. Taken together the losses inflicted on the enemy amounted to a substantial proportion of his remaining tonnage; and it is certain that the combined offensive off Norway was by this time not only making it impossible for the Germans to supply their garrisons in the north but was also steadily cutting them off from their last remaining source of supply of Swedish iron ore, namely Narvik.¹

To return to the Arctic, after Bomber Command had damaged the *Tirpitz* on the 15th of September the U-boats were the principal threat to our convoys, and for the next eastbound movement (JW.61) very strong air and surface ship escorts were therefore provided; for we hoped to conduct such an offensive as would sweep these enemies finally from their favourite hunting grounds in the Bear Island Strait and Barents Sea. The normal escort was therefore supplemented by two support groups and a third escort carrier. The convoy, which consisted of twenty-nine merchant ships and six more submarine chasers for the Russian Navy, sailed from Loch Ewe on the 20th of October. The support groups and carrier aircraft successfully cleared the U-boats out of the path, and all ships arrived safely. Similar tactics were adopted when the two sections of the corresponding homeward convoy (RA.61) sailed from the White Sea and Kola Inlet on the 30th of October and 2nd of November respectively. The support groups went to sea ahead of the convoy, and dispersed the eighteen U-boats waiting in the approaches to Kola Inlet. Not one of the thirty-three merchantmen was lost during the journey, and the failure actually to destroy any enemies can confidently be attributed to the very bad asdic conditions which prevailed throughout the double operation. The senior officer of one of the escort groups described the frustration of his efforts from this cause as 'trying to catch several irritated and offensively-minded snakes with six harmless rabbits to oppose them'.

¹ After the war Admiral Ciliax, who was German naval Commander-in-Chief in Norway from March 1943 until April 1945, wrote a report for the Admiralty in which he stated that it was our air and M.T.B. attacks which caused the greatest anxiety and the heaviest losses to the traffic for whose protection he was responsible.

The next outward convoy (JW.61A) consisted only of two large liners, carrying 11,000 Russian prisoners of war who had been released during the Allied advance across western Europe. Escorted by the cruiser *Berwick*, the escort carrier *Campania* and six destroyers they returned safely to their homeland in November.

Meanwhile naval reconnaissance aircraft from the *Implacable* had been watching and photographing the *Tirpitz* in her new anchorage, in order to establish her exact position; and by the 18th of October it was clear that she was moored three miles west of Tromsø town. As she was now some 200 miles nearer to British air bases than she had been in Altenfiord, Air Chief Marshal Harris decided that the next attack should be carried out from the west. Thirty-eight Lancasters, all armed with 12,000-pound bombs, therefore took off on the 29th; but low cloud over the coast prevented accurate aiming, and the only additional damage inflicted was by a near miss, which caused some flooding and shaft damage right aft.

Bomber Command intended to repeat the attack as soon as possible; but a spell of very bad weather caused a series of postponements, and it was the 12th of November before another striking force, of thirty-two Lancasters, could be despatched. This time the weather was clear over target, and smoke caused less interference than usual. Furthermore, owing to what the German naval C.-in-C., Norway, (Admiral Ciliax) later described as 'a whole series of unhappy coincidences and failures', the fighter protection from nearby Bardufoss airfield never materialised. Thus the Lancasters were able to enjoy unusually good aiming conditions, being unimpeded initially by smoke and without interference from enemy fighters.

Long before the battleship had disappeared beneath her smoke screen the R.A.F. aircrews knew that they had struck her very heavily. The first hit was on the port side amidships, and probably detonated on the armoured deck. The battleship at once took a heavy list (almost thirty degrees) to port. Counter-flooding was ordered, but before it could be carried out she was hit again a little further aft. These two hits, and a near miss in the same vicinity, together tore a hole about 100 feet long in her port side. A third direct hit was probably obtained on one of the battleship's forward turrets, as well as another near miss right forward; but they contributed little to sinking the ship. It was the hits amidships which proved fatal.

As the battleship listed ever further to port she was rent by an internal explosion in the after magazines, and thereupon immediately turned turtle, coming to rest at about 140 degrees to the vertical, with her superstructure resting on the bottom. About 1,000 of her crew were trapped inside her and drowned, but eighty-five men escaped in remarkable fashion. They made their way up through the inverted hull to the inner bottom, whence their signals were

heard on the outside. A hole was promptly cut in the hull, and they emerged into daylight.

Thus was the ship whose presence close on the flank of our Arctic convoy route had caused so much anxiety and trouble finally eliminated. Considering that only once did she fire her main armament in earnest¹, one may doubt whether a single ship 'in being' ever exerted such great influence on maritime strategy. We had every reason to remember, from our experience with her sister-ship the *Bismarck*², that once she got to sea her great size and strength, powerful armaments and high speed, would make her difficult to catch and sink; and it was obvious that as long as she was based on Altenfiord she could choose her own moment for a sortie against any of our convoys. As no single British ship was able to engage her on equal terms we had always been forced to keep a powerful combination of carriers, battleships, and lesser vessels ready in the offing; and had Hitler been more prepared to risk her she could probably have wrought heavy damage, even if in the end she had been cornered and sunk as were the *Bismarck* and the *Scharnhorst*. In fact, as Admiral Tovey's operations against her in March 1942 had shown³, weather conditions in the Arctic were so favourable to lightning raids that there was always a good chance that she would escape from the Home Fleet. Given a determination commensurate with her fighting strength she might, one may now feel, have accomplished far more; and at the worst she could only have met her end in battle at sea, instead of being battered into immobility and finally destroyed in the harbours where she strove to find shelter. None the less we must recognise that, quite apart from her strategic influence on our dispositions, she forced on us the need to expend a very great naval and air effort in trying to damage or destroy her. Table 31 (pages 170-171) shows the strength deployed in the many attacks made on her by naval and R.A.F. aircraft during the two years and ten months that she was stationed in Norway; and in addition to those substantial efforts there were the occasions when other weapons, from mines to midget submarines, were used against her.

It was rather paradoxical that the first pair of Arctic convoys to start out after the destruction of the *Tirpitz*, JW.62 and RA.62, of thirty and twenty-eight ships, which sailed from Loch Ewe and Kola Inlet on the 29th of November and 10th of December respectively, should have encountered stronger opposition than their immediate predecessors. But such was the case; for the Germans had managed, after an interval of two years, to send two 'Gruppen'

¹ During the raid on Spitzbergen on 18th September 1943 (see Part I, p. 63).

² See Vol. I, pp. 395-415.

³ See Vol. II, pp. 120-124.

AIR ATTACKS ON THE TIRPITZ

Table 31. Fleet Air Arm and Royal Air Force Attacks on the 'Tirpitz' in North Norway January, 1942–November, 1944

Date	By whom carried out	Aircraft used	Position of the <i>Tirpitz</i>	Results achieved	Aircraft losses	Remarks
28/29 Jan. 1942	R.A.F.	9 Halifaxes 7 Stirlings	Aasfjord (near Trondheim)	No hits	0	Night bombing attack (see Vol. II, p. 117)
9 March 1942	<i>Victorious</i>	12 Albacores	At sea off Lofoten Is.	No hits	2	Torpedo attack (see Vol. II, p. 122)
30/31st March 1942	R.A.F.	33 Halifaxes	Föttenfjord (near Trondheim)	No hits	5	Most aircraft failed to locate target on account of bad weather (see Vol. II, p. 127)
27/28th April 1942	R.A.F.	31 Halifaxes 12 Lancasters	Föttenfjord near (Trondheim)	No hits	5	Night bombing attack (see Vol. II, p. 127)
28th/29th April 1942	R.A.F.	23 Halifaxes 11 Lancasters	Föttenfjord (near Trondheim)	No hits	2	Night bombing attack (see Vol. II, p. 127)
3 April 1944	<i>Victorious</i> <i>Scarrier</i> <i>Pursuer</i> <i>Furious</i> <i>Emberor</i> <i>Fencer</i>	40 Barracudas 21 Corsairs 20 Helicats 40 Wildcats	Altenfjord	14 hits 1 near miss (4-1,600 lb.) (11- 500 lb.)	4	(see Vol. III, Part I, pp. 275-278)
24 April 1944	<i>Victorious</i> <i>Scarrier</i> <i>Emberor</i> <i>Pursuer</i>	cancelled owing to bad weather	Altenfjord			(see Vol. III, Part I, p. 279)
15 May 1944	<i>Victorious</i> <i>Furious</i>	27 Barracudas 28 Corsairs 4 Scafires 4 Wildcats	Altenfjord	—	—	Attack abandoned on reaching the coast owing to dense low cloud at 1,000 ft. (see Vol. III, Part I, p. 281)
28 May 1944	<i>Victorious</i> <i>Furious</i>	cancelled owing to bad weather	Altenfjord			(see Vol. III, Part I, p. 281)

AIR ATTACKS ON THE TIRPITZ

17 July 1944	<i>Formidable</i> <i>Indefatigable</i>	<i>Furious</i>	44 Barracudas 18 Corsairs 12 Fireflies 18 Hellcats	Altenford	No hits	2	(see Vol. III, Part II, p. 156)
22 August 1944 (a.m.)	<i>Formidable</i> <i>Indefatigable</i> <i>Trumpeter</i>	<i>Furious</i> <i>Nabob</i>	31 Barracudas 10 Hellcats 11 Fireflies 24 Corsairs 8 Seafires (for diversionary attacks)	Altenford	No hits	3	Barracudas and Corsairs returned on reaching the coast owing to dense low cloud at 1,500 ft. (see Vol. III, Part II, p. 159)
22 August 1944 (p.m.)	<i>Indefatigable</i>	<i>Indefatigable</i>	6 Hellcats 8 Fireflies	Altenford	No hits	0	(see Vol. III, Part II, pp. 159-160)
24 August 1944	<i>Indefatigable</i> <i>Formidable</i>	<i>Furious</i>	33 Barracudas 10 Hellcats 24 Corsairs 10 Fireflies	Altenford	Two Hits (1-1,600 lb.) (1-500 lb.)	6	(see Vol. III, Part II, p. 160)
29 August 1944	<i>Indefatigable</i> <i>Formidable</i>	<i>Formidable</i>	26 Barracudas 17 Corsairs 7 Hellcats 10 Fireflies 7 Seafires (for diversionary attacks)	Altenford	No hits	2	(see Vol. III, Part II, p. 160)
15 September 1944	R.A.F.	R.A.F.	28 Lancasters	Altenford	One hit (12,000 lb.)	0	Operating from a Russian airfield (see Vol. III, Part II, pp. 161-162)
29 October 1944	R.A.F.	R.A.F.	38 Lancasters	Tromsø	No hits one near miss	1	(see Vol. III, Part II, p. 168)
12 November 1944	R.A.F.	R.A.F.	32 Lancasters	Tromsø	Probably three hits and two near misses (12,000 lb.)	0	<i>Tirpitz</i> sunk. (See Vol. III, Part II, pp. 168-169)

each consisting of about thirty-five Ju.88 torpedo-bombers back to north Norway, and had also stationed nearly a score of U-boats in the Barents Sea. As, however, additional support groups and carrier air escorts were again provided, the enemy reinforcements made little difference to the outcome of the double operation. The east-bound convoy suffered no losses, and before the homeward one sailed our anti-submarine vessels had forced the U-boats away from the approaches to Kola Inlet. All that they accomplished was to torpedo and damage the destroyer *Cassandra*. Nor did the nine Ju.88s which attacked the convoy with torpedoes on the 12th of December hit any of its ships. Moreover the escorts of RA.62 scored a double success when the frigate *Bamborough Castle* sank U.387 on the 9th of December, and the *Campania's* Swordfish accounted for U.365 four days later.

The great change which had come to pass in the Arctic since the harrowing experiences of the 1942 convoys is clearly revealed in the escort commanders' reports of this period. The officers who conducted the earlier operations could only tell a tale of heavy losses suffered, and of severe trials endured; and their reports, though always written with great restraint, made plain what these operations meant to the crews of the escort vessels and merchantmen. Now, at the end of 1944, the escort commanders obviously knew that they had the measure of their enemies, and they even regarded the appalling weather generally encountered as merely one of the inescapable hazards of war. One consequence was that the little touches of humour, with which naval officers delight to enliven the formal accounts of their doings, but which were conspicuously absent from reports on the earlier Arctic convoys, now reappeared. Thus after JW.62 the senior officer of the 20th Escort Group noted that 'By 6 p.m. [on the 3rd of December] the weather had deteriorated . . . H.M.S. *Tortola* at this time reported her Captain sick with appendicitis, operation not immediately necessary. H.M.S. *Tavy's* gyro had also developed an internal complaint, but was operated on successfully and by midnight was running correctly.'

To sum up the results accomplished by the Arctic convoys during the second half of 1944, 159 loaded ships sailed outwards, and not one of them was sunk. Of the 100 ships which returned westwards in the same period only two were lost.¹ Nine U-boats were destroyed in course of these operations, six of them by the carrier aircraft and surface escorts, and the other three by Coastal Command's long-range air patrols. The only serious damage inflicted on the escorts themselves was the sinking of the *Kite*. Enormous quantities of stores and equipment were thus safely delivered to our Russian Allies at astonishingly small cost.

¹ Appendix R contains full particulars of the whole series of Arctic convoys.

CHAPTER XIX
THE BATTLE OF THE ATLANTIC
1st June—31st December 1944

‘My Captains know the seas surrounding these islands, and the methods of fighting the Dutch, far better than those commanding the French ships possibly could. Moreover it is the custom of the English to have command at sea’.

Charles I to Colbert de Croissy, French Ambassador at the Court of St. James.

IT was told earlier how, by the end of August 1944, the surviving Bay of Biscay U-boats were all transferring to Norwegian bases, and the efforts of other U-boats to interfere with the new series of Arctic convoys and with our cross-Channel traffic have also been described. In one sense these operations all formed part of the long-drawn Atlantic battle; for no U-boat could attack an Allied merchantman, and no Allied escort could sink a U-boat without those events having some impact on the flow of troopships, tankers and dry cargo vessels to and from the ports of Britain; while the maintenance of our invasion armies on the continent, and also to some extent the progress of the great Russian land offensives in the east, depended on the unimpeded passage of our merchant ships across the western ocean. But in another sense the operations of the U-boats in the English Channel and its approaches in the summer of 1944 formed a part of the German campaign to defeat our invasion plans; and as such they could not be considered separately from the E-boats, bombers, minelayers, ‘small battle units’ and all the other weapons which the enemy deployed for the same purpose. Similarly the U-boat operations in the Arctic had to be recounted with the story of the Home Fleet’s endeavours to carry supplies for the Russian armies to Murmansk and Archangel. Although, therefore, we have already covered part of the struggle against the U-boats between June and September 1944, we have not yet considered their appearances during those months in waters remote from the British Isles. It will be logical to complete that part of the story before turning to the events which took place in the same period much nearer to our shores.

On the day that the invasion armies sailed from Britain for Normandy (June 6th) there were three U-boats stationed in the North

Atlantic for weather-reporting duties, one was patrolling off Halifax, another was about to enter the Caribbean, two were cruising off West Africa near Takoradi, and U.505 had just been captured intact by the American escort carrier *Guadalcanal* and her attendant destroyers, and was being towed towards Bermuda.¹ Thirteen other boats were on passage to various remote patrol positions, including four of the 1,600-ton U-cruisers, which were bound for the Indian Ocean.² The last surviving U-tanker (U.490) was on her way south to act as supply ship for these latter, but on the 9th of June she was caught on the surface in mid-Atlantic by the American escort carrier *Croatan* and her destroyers, and was sunk. This was a severe blow to the German campaign in distant waters.

Here we may note how the cessation of pack attacks against our Atlantic convoys had released several American escort carriers from convoy support duties, to form what our Ally called 'hunter-killer groups'. These groups ranged the central Atlantic looking for U-boats in the positions which our wireless intelligence service had indicated as likely to prove fruitful; and had they not been provided with such excellent intelligence it is improbable that they would have been any more successful than our own early 'hunting groups'.³ The matter is important, because the successes of the 'hunter-killer groups' (they actually totalled seventeen⁴) were far fewer than those achieved by the sea and air convoy escorts. Yet the old tendency to regard hunting for such enemies as more 'offensive', and so in some way superior to the escort-of-convoy strategy seems remarkably persistent.

Off the eastern seaboard of the United States and Canada the one or two U-boats present in June accomplished nothing, and on the 2nd of July the minelayer U.233 was sighted by aircraft from the U.S.S. *Card* and sunk after a three-day pursuit. No Allied losses were suffered in those waters in June and July, while the two U-boats present in the Caribbean at the same time only sank one ship. On the 15th of June the roving escort carrier U.S.S. *Solomons* sank one of the U-cruisers mentioned earlier (U.860) in the South Atlantic, but the other three all reached the Indian Ocean safely. In late June another boat of the same class successfully broke out by the Denmark Strait, and she reached the Indian Ocean early in August.

One of the two West African boats (U.543) came to grief at the hands of the U.S.S. *Wake Island's* aircraft on the 13th of June, but the

¹ See Morison, Vol. X, pp. 290-293, and Rear-Admiral D. V. Gallery, *We captured a U-boat* (Sidgwick and Jackson, 1957), for a full account.

² See pp. 204-205 for the results achieved by the Indian Ocean U-boats in this period.

³ See Vol. I, pp. 10, 130, 132 and 134, and Vol. II, Chapter XIV.

⁴ This excludes, of course, the large number of U-boats sunk by carrier aircraft when escorting or supporting convoys. See Appendix Y for full details.

other one (U.547) sank two ships and an escort trawler and finally reached Bordeaux safely. Meanwhile the American carriers and their destroyer escorts scored two more successes in mid-Atlantic by sinking I.52, a Japanese boat carrying a valuable cargo to Germany on the 24th June, and U.154 on the 3rd of July. During these two months we lost no ships at all in the North Atlantic, and Coastal Command's close air escorts were therefore gradually replaced by aircraft giving only general cover over the waters through which our convoys were passing.

The loss of the Biscay bases in August, the recent destruction of the last U-tanker, and the successes achieved by the American 'hunter-killer' groups combined to prevent the despatch of further U-boats to the Caribbean or to West Africa; for even the large Type IX boats could not work effectively in those waters while they lacked any prospects of refuelling. Thereafter, except for the U-cruisers in the Indian Ocean, the large U-boats could reach no farther than the east coast of North America or north-west Africa; while the smaller (Type VII) boats were confined to British coastal waters.

The next success obtained by the American escort carrier groups came on the 20th of August, when the *Bogue's* aircraft sank U.1229, which was on her way to the coast of Maine to land agents. Although one enemy (U.802) penetrated into the St Lawrence river at this time, stayed there for three weeks and survived to tell the tale, she did no damage. Thus by the early days of September 1944 Dönitz's campaign in remote waters, which he had started soon after the U-boats had sustained their heavy defeats in the Atlantic in May of the previous year¹, had declined almost to insignificance. But if the U-boats' spasmodic appearances in waters far distant from Europe inflicted few losses, they certainly caused us and our American Ally an expenditure of effort which was quite disproportionate to their numbers.

As the summer of 1944 advanced into autumn the Admiralty had good reason to be more worried by developments in the home theatre than by the occasional sinking of one or two ships for overseas. The reader will remember that Coastal Command's No. 18 Group had been strongly reinforced in July, when No. 19 Group's duties in the Bay of Biscay became less onerous.² The object of the switch was to strengthen the air watch on the waters between the Shetlands and Iceland, through which all U-boats bound to or from Germany or their Norwegian bases had to pass. These patrols were actually a joint Navy-R.A.F. affair, and were controlled from the Area Combined Headquarters at Rosyth by the naval Commander-in-Chief

¹ See Vol. II, pp. 372-381, and Part I of this volume, pp. 16 and 19.

² See p. 129.



and his air colleague of No. 18 Group. Four Western Approaches support groups were allocated to work with the patrolling aircraft, for our experience in many theatres had proved that intimate collaboration between surface ships and aircraft was the most effective way of locating the U-boats and then hunting them to destruction.¹ In August still more reinforcements joined No. 18 Group's squadrons in Scotland, the Shetlands and Iceland, and in the middle of that month a stream of U-boats started to come out from Norway and Germany. Some were destined for the distant waters already mentioned, while others were to take up various positions in the coastal waters of the British Isles. By the end of the month no less than sixteen were passing out by the northern route; but they all proceeded with the greatest circumspection, using their 'Schnorkels' constantly. Only two were sighted from the air, and no attacks took place. After the successes of the previous month against the Arctic U-boats this was an unpalatable change.²

In the meantime, while the Bay of Biscay bases were being rapidly cleared of U-boats, the Admiralty was planning to route certain North Atlantic convoys much further south, and to bring them in by the South-Western Approaches, instead of passing round the north of Ireland. This reduced the importance of the naval and air bases in Iceland, which had served us so well since the dark days of 1940, but increased the importance of the bases recently acquired in the Azores.³ The air group stationed in the latter islands (No. 247) was therefore strengthened by Liberators from No. 19 Group. Nor was it long before the Azores-based aircraft drew blood, for on the 26th of September while flying in support of convoy CU.40⁴ they several times sighted a 'Schnorkel', and finally sank U.871. She was bound for the Indian Ocean.

The reorganisation of our Atlantic shipping actually took some time to carry out. At the end of August the combined convoy SL.167/MKS.58, homeward-bound from the South Atlantic and Gibraltar, was routed close to the Portuguese coast, and entered the South-Western Approaches on the 27th. This was the first big ocean convoy to approach Britain by that route, which had been closed to our shipping ever since the fall of France in June 1940. In mid-September the Halifax convoy HXS.306 came home through the same waters, and was the first North Atlantic convoy to do so. On the 17th of September the Admiralty informed all authorities that in future, whenever circumstances permitted, outward as well as homeward convoys should pass to the south of Ireland. Separate

¹ See Part I, pp. 208-209 and 326, regarding similar experiences in the Mediterranean.

² See pp. 157-158.

³ See Part I of this Volume, pp. 46-47.

⁴ See Vol. II, Appendix F, for the meaning of the designation letters of all convoys.

sections were to be formed of ships proceeding to or from ports on the south and east coasts of Britain, and they were to pass through the English Channel. This organisation was identical to that which we had adopted in September 1939 but were forced to abandon nine months later.¹ The wheels of war had indeed turned full cycle.

To return to the measures taken to deal with the inshore U-boats, on the 11th of September Air Chief Marshal Sir Sholto Douglas issued a new directive to Coastal Command, by which patrols off Cape Wrath, Northern Ireland, and in the St George's and Bristol Channels were given priority. They were to be controlled by No. 15 Group, which had first call on Nos. 18 and 19 Groups for reinforcements for these purposes. One effect of this redeployment was that No. 18 Group's patrols in the northern transit area were relegated to a low importance, and it is therefore hardly surprising that, of the twenty-five U-boats now known to have passed through the northern waters towards the end of the month, few were sighted and none was sunk. Between the 17th and 19th of September, however, a breakdown by U.867, whose signal requesting a tow back to Norway was intercepted, produced interesting developments. Three U-boats moved to her assistance, but when she was sighted and attacked by a Liberator on the 19th she scuttled herself and her crew took to their dinghies. Another Liberator then attacked and claimed to have sunk the immobilised U-boat; but we now know that her target must have been U.858, one of the rescue boats, which actually received no damage. What the Liberator saw after her attack undoubtedly was the dinghies with U.867's crew on board; but until recently she was credited with having sunk U.865, which disappeared from unknown causes soon after leaving Trondheim on the 8th of September. In fact the only positive success achieved by No. 18 Group's anti-submarine squadrons in that month was to sink U.855 off Bergen on the 24th—rather a poor result in relation to the large number of enemies which crossed the patrol area at that time. Nor did October produce an improvement; for the sinking of U.1006 on the 16th by the Canadian frigate *Annan*, one of the surface vessels sent to co-operate with the northern air patrols, was the sole success of the month, apart from that achieved by the Home Fleet carrier strikes off Norway recounted earlier.² Our difficulties were still further increased when the U-boat command abandoned the practice of escorting boats on the surface through the Inner Leads, and ordered them to pass in and out from their bases submerged and at a good distance from the Norwegian coast.³

¹ See Vol. 1, pp. 92-93 and Map 9.

² The destruction of U.1060 by the *Implacable's* aircraft. See p. 164.

³ See p. 164.

With the results obtained in October even worse than those of September (only one U-boat damaged out of the forty-nine which passed through the northern waters) it was, perhaps, natural that some discouragement should have been felt by the Coastal Command aircrews; and it is this which partly explains the acceptance in the following month of a large number of false reports of sightings of U-boats. There is no doubt at all that almost all the plumes of 'smoke' sighted and reported at this time as coming from Schnorkels were in fact the small incipient water spouts (colloquially called 'willywaws' by seamen) which are frequently encountered at sea. Although in June 1943 'willywaws' had been photographed and recognised for what they were, by the autumn of the following year this seems to have been forgotten; the crop of sightings of alleged Schnorkels was accepted without adequate investigation, attacks on the 'willywaws', or less commonly on spouting whales, continued; and the earlier sense of frustration experienced by the air crews was replaced by a wave of optimism. Photographs of plumes of spray which had nothing to do with U-boats were widely promulgated by Coastal Command and the Admiralty¹, and the error remained undetected until the enemy's movements were closely investigated after the war. It then became obvious that no U-boats had been anywhere near the positions of the attacks. The lesson to be drawn appears to be the old one that claims of damage inflicted on enemy submarines, though made in perfectly good faith, should not be accepted until after the most thorough and careful investigation has produced some tangible evidence to confirm them. Historical research has thus quite recently proved that all air reports of sighting and attacking 'Schnorkelling' U-boats made between September 1944 and the end of the war must be regarded with grave suspicion.

By the beginning of November the last of the stream of U-boats from the Biscay bases had reached Norway, and traffic on the northern routes therefore declined; but in the following month its direction was reversed, and many more boats came out to take up patrol positions in the English Channel and Irish Sea. In November we scored only a single success, when a Norwegian-manned Sunderland of No. 330 Squadron sighted U.322 on the 24th, and called up an escort group. The frigate *Ascension* sank her next day. December produced even worse results. Of fifty U-boats which passed in or out by the northern routes none was even sighted.

From the foregoing brief account of a very frustrating period the extent to which the Schnorkel had defeated our air patrols will be plain. Not only did all the thirty-one U-boats from Biscay reach Norway safely but, after the U-boat command had completed its re-

¹ See illustrations of real and false Schnorkel plumes facing p. 182.

organisation in October, boats began to pass in and out by the northern routes almost unhindered. On our side a prodigious amount of patrolling by warships and aircraft was undertaken during the last three months of the year for singularly small results; but to keep the matter in fair perspective the reader should remember that, after the U-boats had arrived in their patrol billets, they brought off few successful attacks. In fact if the Schnorkel brought our enemies great benefits by making detection much harder for us, its constant use deprived them of mobility, and so prevented them from fully exploiting the immunity from detection which they had gained. As destroyers of merchant shipping the surfaced U-boats of the 1941 'wolf packs' were immeasurably superior to the submerged 'Schnorkellers' of 1944, creeping unseen around our coasts; and, even if the latter caused us much irritation and wasted effort, they never came near to becoming a serious threat to our Atlantic life-line—as the former certainly did. Indeed the story told in these volumes of how the asdic initially had the upper hand over the submerged U-boat¹, then the surfaced U-boat defeated the asdic², next radar returned to us the initiative over the surfaced U-boat³, and in the final stage the Schnorkel reduced almost to zero the effectiveness of our radar, appears to be an excellent example of how in war a swing of the pendulum in favour of the offensive is sooner or later countered by a defensive development.

We have already told the story of the U-boats' attempt to interfere with our traffic in the Channel between the launching of the invasion of Normandy and the end of August 1944⁴; and the reader will remember that although Coastal Command scored substantial successes at the beginning, once the Schnorkel boats had arrived in July the air patrols lost a very great measure of their effectiveness. In that month and August all the successes against the Channel U-boats were obtained by the surface ship patrols and the convoy escorts.

We must now recount the operations of the U-boats in British coastal waters between the 1st of September and the end of 1944. Since the early days of 1941 only very occasional visits had been paid to these waters by enemy submarines⁵; but in June 1944 the Germans did make a half-hearted attempt to restart inshore operations by sending one to the North Minch and another to the North

¹ See Vol. I, pp. 34, 68 and 90.

² See Vol. I, pp. 354-358.

³ See Vol. II, pp. 205, 207, 364-365 and 369.

⁴ See pp. 57-58, 67-68, 126-127 and 133-134.

⁵ See Vol. I, p. 351. The destroyer *Warwick* was sunk by U.413 off the north coast of Cornwall in February 1944 (see Part I of this volume, p. 293), and in March of that year three U-boats patrolled for a time off the north coast of Ireland.

Channel.¹ The former (U.247) apparently attacked but missed a Home Fleet battleship on the 18th of June and was never detected by our forces; the latter (U.719) was found after prolonged sea and air searches and was sunk by the destroyer *Bulldog* on the 26th. Early in August one enemy (U.667) appeared in the Bristol Channel, sank one merchantman and the Canadian corvette *Regina*, and escaped our searching forces.² Next five boats left Norway to patrol in the North Channel, off the North Minch and Moray Firth, and off Reykjavik in Iceland; and they were all in position by the end of August. Four more boats from Norway and three from the Bay of Biscay followed. Thus the start of the Inshore Campaign by the U-boats, which was to last until the end of the war, may be said to date from September 1944. Although the Admiralty was well aware of what was in train, and Coastal Command established air patrols at all points where U-boats might appear, we got very few glimpses of these enemies. Only one of them, however, achieved any substantial success, and that was U.482. During the last two days of August, close off the coast of Northern Ireland, she sank two merchantmen (one a tanker of 10,448 tons) in convoys, and also a corvette. Then, on the 8th of September, she sank two ships (one of 15,702 tons) out of convoy HXF.305 only fifteen miles offshore; after which she returned safely to Norway, in spite of our air patrols having been strengthened to search for her. The loss of large ships such as fell to this single U-boat almost on our front door-step and at our most sensitive spot—for comparatively few ships were as yet coming in through the South-Western Approaches—was an unpleasant shock, the more so because all the victims were sailing in convoy. They were, however, without air escorts—a state of affairs which, coming so late in the war, seems very surprising; for we had long since learnt that convoys accompanied by air as well as surface escorts were almost immune from U-boat attack. The captain of U.482 (Count von Matushka) attributed his success to the skilful use of his Schnorkel, to the difficult asdic conditions which usually prevailed in those waters, and to the fact that his was the first U-boat to appear there for some time. Between leaving Bergen on the 16th of August and returning there on the 26th of September he travelled 2,729 miles, only 256 of which were made on the surface. His claim that he was never sighted by our air patrols, or firmly located by any of the asdic-fitted ships which searched for him appears to be well-founded.

Happily U.482's success was not repeated by the four fresh U-boats from Norway which took up inshore patrol positions early in September. The surface escorts of convoy ONF.252 quickly sank U.743

¹ See Map 41.

² See p. 133.

on the 9th off the Irish coast, and U.484 was almost certainly destroyed by the Canadian escort vessels *Dunver* and *Hespeler* southwest of the Hebrides on the same day. During August and September there were other U-boats off southern Ireland, in the Bristol Channel, and between the North Minch and Cape Wrath; but none of them accomplished anything significant, and two were damaged in attacks by surface ships. We now know that at this time U.296 cruised submerged for thirty-four days off the north of Scotland, and U.1199 for fifty days off the Moray Firth. It will thus be seen that, of the twenty U-boats stationed around our coasts in September, only U.482 achieved any substantial results. On the other hand it seems true to say that their appearances did succeed in diverting our attention from the movement of the U-boats from the Bay of Biscay to Norway—as the enemy had intended.¹ From Coastal Command's point of view it had been a discouraging month; for it was the surface warships which achieved all the successes, namely two enemies sunk and two damaged. The order given by Air Chief Marshal Douglas early in September that, subject only to meeting the needs of the Atlantic convoys, priority was to be given to patrolling the inshore waters where we believed the U-boats to be lurking, was thus unsuccessful. We were, moreover, slow to reintroduce air escorts and to adapt their tactics to the new conditions prevailing in our coastal waters; for it was the end of October before No. 15 Group's aircraft began to fly ahead and on either bow of an advancing convoy. Even so—and this was perhaps still more disturbing than the comparative failure of the patrols—the air escorts rarely sighted any enemies; and still more rare was a successful attack on one of them. In October, however, there was actually a dearth of targets, because the Germans were re-organising the Norway bases, and only five U-boats were present in all our inshore waters. No damage was done on either side in that month.

To impede the entry of U-boats into the Irish Sea and English Channel the Admiralty reverted to measures which they had used at the beginning of the war, but had virtually abandoned since 1942—namely the laying of defensive minefields.² At the beginning of October the *Apollo* and *Plover* started to lay a deep field off southern Ireland, which was later extended to the Cornish coast; and it was while carrying out these operations that the *Plover*, which had taken part in the laying of the original Dover barrage in 1939³, laid her 10,000th mine. In November the *Apollo* shifted to the northern Irish coast, to lay a field off Malin Head; but before it had been carried

¹ See p. 131.

² See Vol. I, pp. 95-97, 126, 263-266, and Vol. II, p. 255.

³ See Vol. I, p. 96.

very far the Admiralty decided to concentrate on closing the South-Western Approaches to the enemy, since many of our convoys were now coming in through those waters. Both ships were therefore ordered to continue laying the fields between southern Ireland and the north coasts of Devon and Cornwall.¹ No U-boats were however sunk by these mines in 1944.

The enemy's ability to continue the U-boat campaign now depended considerably on the completion of the concrete shelters at Bergen and Trondheim. When the main base of operations was shifted from western France to Norway only a few pens were ready to receive U-boats, and the larger (Type IX) boats were therefore forced to work from German bases. This, of course, further limited their radius of action. Progress with the shelters was constantly watched by our reconnaissance aircraft, and by the early days of October the time was considered ripe to attack them from the air. On the 4th Bomber Command therefore made a heavy raid on Bergen, using 1,000-pound bombs. Much damage was done to the uncompleted pens, but no bombs penetrated the roofs of the finished shelters. Four of the U-boats which had recently arrived from France were, however, destroyed or damaged beyond repair. Next an attack by fifty-one Lancasters on the night of the 28th-29th devastated the dockyard, but did no further damage to the shelters. Nor were the raids on the Norwegian bases the only contribution Bomber Command and the U.S. Air Force made to the Atlantic battle at this time; for the delays experienced by the Germans in getting the new types of U-boats² into service were undoubtedly aggravated by the attacks made on the building yards. A Type XXIII boat (U.2323) had been destroyed and a Type XXI boat severely damaged in a raid on Gdynia in the previous July, and the Lancasters destroyed U.735 at Horten near Oslo on the night of the 28th-29th of December. Next, when American bombers raided Hamburg on the last day of the year, they destroyed two Type XXI boats (U.2532 and 2537) and damaged two others. It therefore seems true to say that the heavy bombers' attacks on land targets first made an important direct contribution to the struggle against the U-boats in the autumn months of 1944.

By the end of October the Germans had completed between fifty and sixty of the new types of U-boat, and had begun to pay off the older and smaller models. Final trials and training in 'Schnorkel' work were now being carried out in Oslo fiord, and the repair and servicing facilities at many of the Norwegian bases had been improved. By the beginning of November the enemy was thus ready to

¹ See Map 41.

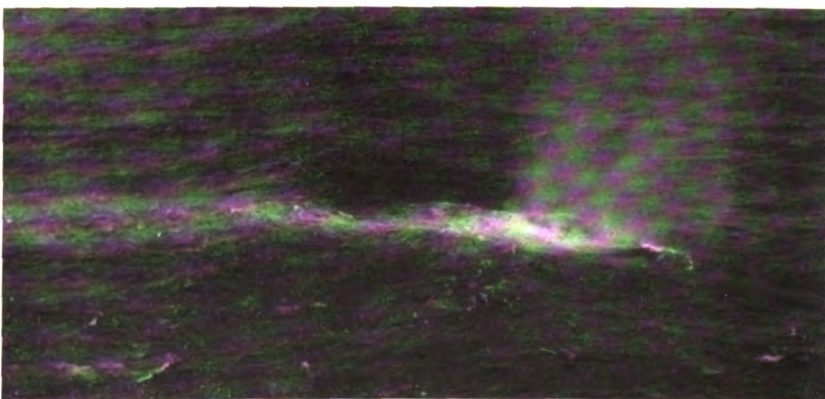
² See Part I of this volume, pp. 17-18, and Appendix X.

*Genuine and false sightings
by aircraft of U-boat
'Schnorkels'*

An attack on U.275 by a
Liberator of U.S.N. 110
Squadron, 18th June,
1944. The U-boat was
only slightly damaged.
Note plume from
'Schnorkel' Funnel.



Example of a 'Willy-
waw' reported by aircraft
as a 'Schnorkel' plume,
21st January, 1945.
Note track.



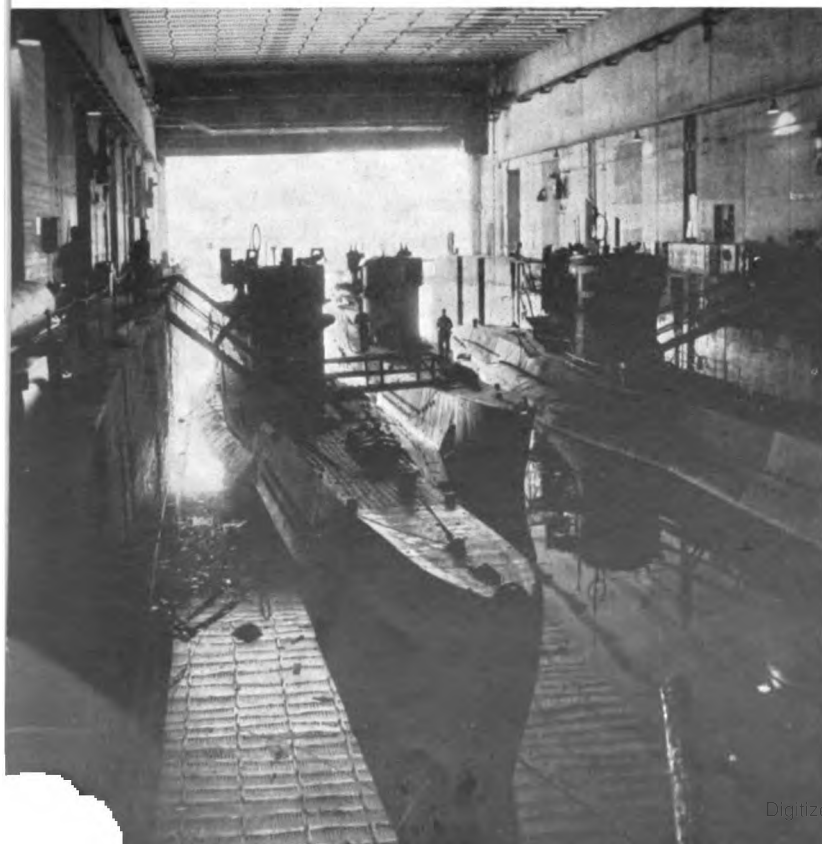
A spouting whale shortly
after it had been depth-
charged from the air by a
Liberator of U.S.N. 103
Squadron, 23rd Feb-
ruary, 1945.



Bomb-proof U-boat Shelters

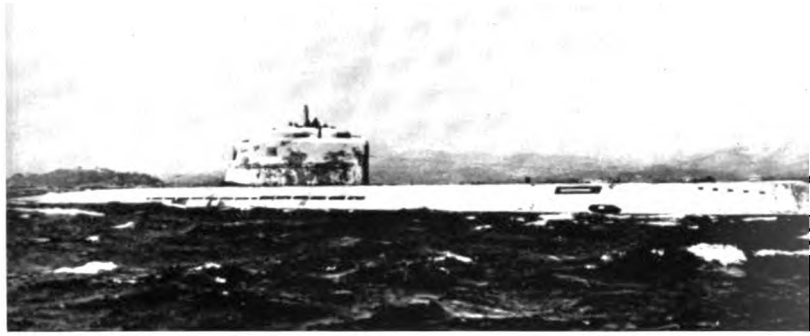


U-boats outside (*top*) and inside (*bottom*) the shelters at Trondheim, Norway.



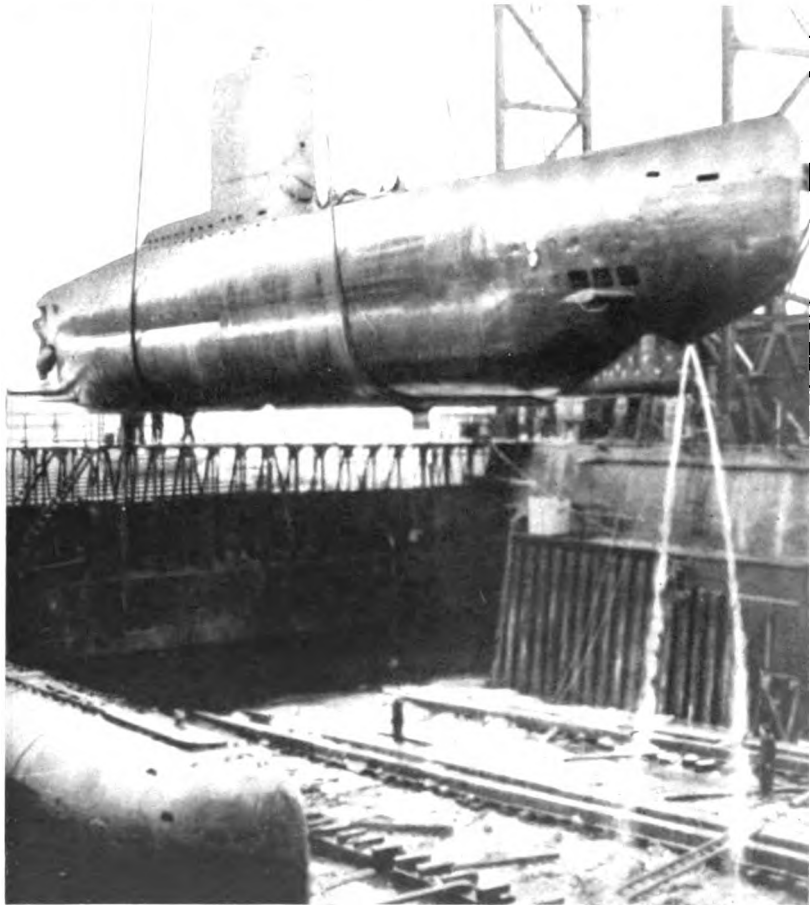
*New U-boat types in service,
1944-5*

A Type XXI boat under way.



A Type XXIII boat being lowered into a floating dock.

(Photograph Franz Selinger)



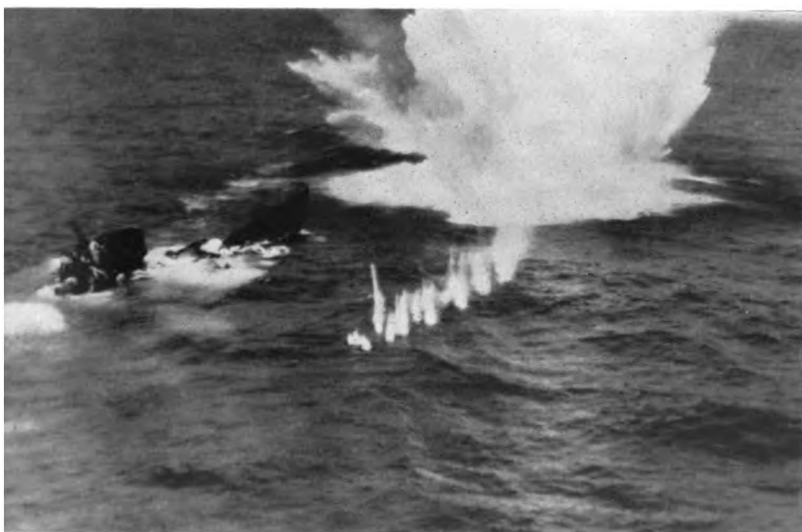
A type XXVII 'Seehund' midget submarine under way.

See Appendices X
(p. 456) and W (p. 455)
for principal characteri-
stics of all these vessels.





Top and Middle. The sinking of U.243 by Sunderland H/10 Squadron R.A.A.F., on 8th July, 1944.



An attack by Liberator R/86 Squadron on U.968 on 19th July, 1944. The U-boat was seriously damaged.

exploit to the limit the tactics of continuous submergence, made possible by the Schnorkel. From that time on the U-boats generally submerged on leaving their bases, and only surfaced again on their return to them, perhaps eight weeks later.

Coastal Command had meanwhile been training its aircrews on British submarines fitted with dummy Schnorkels, and was planning to provide air escort to all convoys and to make constant sweeps sixty miles ahead of them while they were in the dangerous waters; but such tactics demanded very large numbers of aircraft, and as more convoys were now coming in by the South-Western Approaches No. 19 Group as well as No. 15 found itself faced by heavy demands.

In the last two months of the year the enemy sent increased numbers of U-boats to all the usual inshore billets, and they also re-appeared in the English Channel for the first time since August. One of the four ordered to the Channel was U.1006, which, as already mentioned, was sunk in the Faeroes-Shetland passage by the frigate *Annan* on the 16th of October; and surface ships supporting convoy HX.317 despatched U.1200 off Cape Clear (the south-west corner of Ireland) on the 11th of November. Only one of the first flight of Channel U-boats reached its patrol billet safely, and all that she accomplished was to sink an American merchantman off Cape Barfleur. Meanwhile eight more had been ordered to the same waters; but they were handled nearly as roughly as their predecessors. Their first loss occurred when, as already mentioned, the frigate *Ascension* sank U.322 west of the Shetlands on the 25th of November¹; and her sister ship the *Nyasaland* accounted for U.400 while escorting a convoy off Cape Clear on the 17th of December. Next day U.1209 rammed the Wolf Rock accidentally and sank. By far the most successful of the four U-boats which reached the Channel in the last month of the year was U.486, which sank four merchantmen and also the frigate *Capel*. The merchantmen included the troopship *Leopoldville*, sunk off Cherbourg on Christmas Eve with the loss of over 800 American soldiers. On the 30th, however, a Leigh Light Wellington of No. 407 Squadron destroyed U.772 off Portland Bill—a rare success for Coastal Command during this period.

In coastal waters outside the Channel only a few losses of merchantmen and occasional damage to an escort vessel were suffered at this time. Taken as a whole, and if one remembers the density of the traffic in those waters, the twenty U-boats which took part in the inshore campaign during the last two months of 1944 only achieved very moderate successes (eleven merchantmen and two frigates sunk). But we, on the other hand, only sank five of their number; and in spite of the very large amount of flying carried out, only one of

¹ See p. 178.

those five was accounted for by Coastal Command. A great many attacks were made by aircraft during those two months, but we now know that nearly all of them must actually have been made on 'willywaws' or spouting whales.

The reader will see from the foregoing that by the end of 1944 we and the U-boat Command had arrived at a condition not far short of a stalemate. The enemy was doing us little damage, but we were not inflicting losses such as would drive the U-boats from our coastal waters. Indeed unless and until a U-boat committed a hostile act, thereby giving the anti-submarine forces a datum point from which to start a search, they were proving very difficult to locate. The enemy was no doubt right in deciding to persevere with the campaign, especially as he hoped for much better results from the new Type XXI and XXIII boats.

To revert to the story of U-boat operations in distant waters, the only theatre to which the enemy sent reinforcements in the autumn was the Indian Ocean. U.863, another U-cruiser, left by way of the Denmark Strait in September, but on the 29th she was sunk in the South Atlantic by two U.S.N. Liberators flying from bases in Brazil. On the night following this success another of the roving American escort carrier groups, centred on the *Mission Bay*, destroyed U.1062, which was returning to Germany from the Far East, north of the equator.

All boats sent overseas were now Schnorkel-fitted, which no doubt accounts for their comparative immunity from air attacks. Two spent most of October in the Gulf of St Lawrence, and successfully evaded the frequent searches made for them. Towards the end of the year there were five or six enemies off Halifax and in the Gulf of St Lawrence; but they only sank one merchantman and two small Canadian warships.

The Germans attached considerable importance to the weather reports obtained from boats in the Atlantic, and in addition to the two or three which they normally kept stationed for the purpose, those which were outward-bound to distant waters were told to transmit meteorological information. The timing of General von Rundstedt's Ardennes offensive, which started on the 16th of December, was apparently decided on the strength of weather reports from the Atlantic. In spite of the frequent use of their wireless these scattered enemies were hard to locate, but on the 27th of December the surface escorts of convoy HX.327 encountered one of them (U.877) and sank her.

The only other waters visited by the U-boats at this time were the approaches to Gibraltar, where none had appeared since the previous May. One of the boats detailed, U.1227, attacked convoy ONS.33 on the 4th of October, but only succeeded in damaging an escort

vessel; another attacked an L.S.T. convoy bound for America from Britain on the 20th of December and sank one of its number; but that was all they accomplished.

At the close of 1944 the U-boats in the outer oceans were thus very sparse. Apart from two weather-reporting boats in the North Atlantic, there were only three off Halifax and Newfoundland, and one on patrol off Gibraltar. Yet we were still forced to sail the vast majority of our ships in escorted convoys; and although Coastal Command's main effort had been concentrated in our coastal waters, the northern transit area, and the approaches to the Norwegian bases, an enormous amount of flying was still being undertaken in the Atlantic for only occasional rewards. The prodigious sea and air effort which comparatively few U-boats then forced on a maritime power whose shipping was inevitably spread all over the oceans, is a feature of this period which should not be forgotten.

A few figures will, perhaps, summarise the accomplishments and trends in the Atlantic battle during the last four months of 1944 more clearly than many pages of narrative. Between the beginning of September and the end of December the U-boats sank fourteen ships in our coastal waters (eleven of them in convoy), and two in the Atlantic. On the other hand 12,168 merchantmen were safely convoyed through the battle zone. During that period the Germans lost fifty-five U-boats, and of that total thirty-seven met their end in the Home theatre, the North Atlantic and the Arctic. Thus the U-boats' coastal campaign, though not decisively checked, was having no appreciable effect on the progress of the Allied offensive on the continent; and the losses they had incurred, if small compared with those we inflicted during the great convoy battles of May 1943¹, were certainly not insignificant. The Admiralty's anxiety at this time stemmed far more from the feeling that the new types might regain the initiative for the enemy than from the accomplishments of the boats then in service; and the sinking of six ships in the English Channel during the latter part of December appeared to be a warning of what we might have to face when the Type XXI and XXIII boats entered service in numbers.

¹ See Vol. II, pp. 376-377.

CHAPTER XX
THE INDIAN OCEAN
AND PACIFIC
1st June–31st December 1944

'I coined the title of "The Pacific Fleet" for the great Imperial Navy to be hereafter provided as one homogeneous whole by Canada, Australia, New Zealand, South Africa and India.'

Lord Fisher to Gerard Fiennes,
14th April 1910.¹

By the beginning of June 1944 the twin offensives across the Central Pacific and along the north coast of New Guinea had achieved outstanding success.² The Marshall Islands were firmly in Allied hands, the Japanese main base at Truk in the Carolines had been neutralised, the Bismarck barrier had been breached, the attack on the Marianas was about to be launched, and planning for the occupation of the Palau Islands and the assault on the Philippines was in progress.³ These were great accomplishments, and had brought such an upsurge of confidence in American circles that they were even hoping to accelerate their future plans, and possibly strike directly at Formosa. In the South-East Asia Command, however, there had been no comparable progress, and the Americans were considerably alarmed by the deterioration of the situation on the frontier between Burma and China, which threatened to sever the slender communications whereby the Chinese armies and the American air bases in that country were supplied. This led to a divergence of opinion between Britain and America on the strategy to be pursued in South-East Asia; for while we considered that to drive the Japanese from the northern frontiers of Burma and India would be a long and costly process, and wished to throw the full weight of British arms, and in particular our naval forces, into the main Pacific battle, the Americans held that the supply route to China should be kept open at all costs.⁴ We were, however, of the

¹ See Arthur Marder (Ed.), *Fear God and Dread Nought*, Vol. II, p. 321 (Jonathan Cape, 1956).

² See Part I of this volume, Chapter XIII.

³ See Map 34.

⁴ For a full account of these differences in strategic purpose the reader is referred to John Ehrman, *Grand Strategy*, Vol. V, pp. 481–485.

opinion that American views were to some extent coloured by their lack of enthusiasm for British participation in the Pacific struggle. On the 18th of August our proposals on that matter were forwarded to the American Chiefs of Staff, and as they fundamentally affected the future disposition and allocation of the maritime strength which we had been re-building so laboriously in the Indian Ocean since the disastrous days of 1942, it is desirable to examine them in some detail. The British Chiefs of Staff stated their intention to continue attacking on the Burma-China frontier, and proposed to launch an assault from the sea against Rangoon as soon as our strength permitted—probably in March 1945. But our main fleet, which by that time would consist of a powerful assembly of warships of all classes, was not needed for such an operation, since strong opposition from the Japanese Navy was not to be expected; and it was our desire 'that this fleet should play its full part' under American command 'in the main operations against Japan wherever the greatest strength is required'.¹ If the Americans declined this offer of help in the main theatre we would, said the Chiefs of Staff, suggest forming an Empire task force, consisting of British, Australian and New Zealand ships, to serve under a British officer in General MacArthur's South-West Pacific command. It was, as we had rather anticipated, this latter proposal which the Americans accepted when they replied on the 9th of September; but on the 12th, when the heads of the two states met at the second Quebec Conference and Mr Churchill repeated the offer of the fleet for the main theatre of operations against Japan, President Roosevelt handsomely replied that 'it was no sooner offered than accepted'.² Shortly afterwards the Combined Chiefs of Staff expanded this verbal agreement into a formal statement, whose most important clause recorded their view that the British fleet should be balanced in form and self-supporting as regards supplies. Our alternative proposal for the employment of the fleet was at the same time withdrawn. As to future operations in South-East Asia the British view was accepted; but, unfortunately, the frustration of our hopes that Germany would be defeated in 1944 soon ruled out once again the possibility of launching a major combined operation against Rangoon, or across the Bay of Bengal to Malaya or Sumatra.³ The Admiralty's planning staff had meanwhile been tackling the very intractable problem of providing adequate shore-based and floating support for the fleet which was to go to the East; for it was obvious

¹ See Ehrman, *Grand Strategy*, Vol. V, pp. 500-502 (H.M.S.O., 1956).

² See Churchill, Vol. VI, p. 136. The words attributed in this history to President Roosevelt, which differ slightly from those quoted in Mr Churchill's account, accord with the memories of the majority of those present. See, for example, Viscount Cunningham of Hyndhope *A Sailor's Odyssey* (Hutchinson, 1951), p. 611.

³ See Part I of this volume, pp. 344-346, regarding earlier proposals of this nature.

that, whichever strategy was adopted, the main base would have to be in Australia, to which country great quantities of stores and supplies would therefore have to be carried. But Australia was several thousand miles from either theatre where the fleet might be needed, and both an advanced base and a mobile 'Fleet Train' of supply ships would therefore be essential if our ships were to work effectively with the Americans. These needs, coming at a time when shortage of shipping and, still more, of man-power were acute, were the most difficult issues which the Admiralty had encountered since the successful landing in Normandy in the previous June. We will return later to the manner in which they were tackled.¹

In the last chapter dealing with Pacific operations we saw how, at the end of May, General MacArthur's forces assaulted the island of Biak, close off the north-western coast of New Guinea.² To the Japanese the loss of that position would mean that the ring of air-fields surrounding the Philippine Sea, from which they were preparing to attack the American fleet, had been pierced; and they therefore reacted vigorously. They sent air reinforcements to adjacent islands to attack Allied warships, and collected naval vessels to rush troops to Biak from the Philippines, while a battleship and two cruisers covered the movement.

Admiral Kinkaid's Seventh Fleet, which provided all MacArthur's naval needs, was far weaker than the mighty fleets of the Central Pacific command; and in fact there were only the *Australia* (flagship of Vice-Admiral V. A. C. Crutchley, V.C.), three American light cruisers and fourteen destroyers in the forward area at this time. Fortunately the Japanese Navy showed unusual timidity when, on the 2nd of June, their first reinforcements moved south towards Biak from the Philippines. Having been sighted by reconnaissance aircraft, and believing that much stronger forces were ready to oppose them than was actually the case, they turned back. A week later they made a second attempt to strengthen the garrison of Biak, using light cruisers and destroyers to transport the troops. Admiral Crutchley, whose ships had been patrolling to the west of the island each night, had just returned to Hollandia to refuel when news of the movement reached him. He at once went back to Biak; but the Japanese had received warning of his approach and, hastily slipping the barges loaded with troops which they were towing, they turned tail with Crutchley's ships in hot pursuit. Three hours later, when the pursuers were entering waters where Allied aircraft had permission to sink all ships at sight, Crutchley was forced to call off the chase. For their third endeavour the Japanese intended to throw in much stronger

¹ See pp. 330-333 and Appendix P.

² See Part I of this volume, p. 342 and Map 34.

forces, including their two largest battleships the *Musashi* and *Yamato*; but events in the Marianas frustrated that plan, and it thus came to pass that the attempt to reinforce Biak was a complete failure. By the 21st of June General MacArthur's men were firmly in possession of the island. We may here note that the repeated westward thrusts of the South-West Pacific forces had drawn away very considerable enemy forces, and especially aircraft, from the Marianas; and that they also diverted the enemy's attention from the main Allied offensive then developing against that very important group of islands.

General MacArthur's campaign in New Guinea may be said to have ended on the 1st of August, 1944, by which date he had seized the offshore island of Noemfoor, and had also landed forces on the western tip of New Guinea itself. Since the capture of Huon Gulf in September 1943¹, he had made a succession of leaps by sea and air to advance a distance of over 1,000 miles. His next object was the island of Morotai in the Halmahera group², which lay some 450 miles to the north-west of Biak directly on the route towards the Philippines; and it was on the latter islands that MacArthur's eyes had been fixed ever since he had been forced to evacuate them early in 1942.³ The expedition against Morotai was, however, to be timed to coincide with the assault on the Palau Islands by the Central Pacific forces. Thus did the two arms of the gigantic pincer movement, which had started thousands of miles apart, from the Solomon Islands and from Pearl Harbour, draw together in the Philippine Sea; and the whole grandiose strategic plan can truly be said to have been as brilliant in conception as the numerous combined operations which it entailed had been in execution.

We must now turn to the Central Pacific to recount the concurrent progress of the main Allied thrusts. By June 1944 Admiral Nimitz's forces had become so large, and the operations they were carrying out so complex, that the American Chiefs of Staff decided to appoint under him two officers of equal status, who would plan and carry out alternate assaults. While one commander was at sea the other would be ashore at Pearl Harbour preparing the next blow; and it was thus possible greatly to shorten the time between successive operations. Admiral Spruance retained the title of Commander-in-Chief, Fifth Fleet, which by this time he had made historic; while Admiral Halsey, on his transfer from the South Pacific to the central theatre, brought with him his earlier title of Commander-in-Chief, Third Fleet.⁴ The ships of the two fleets were in general the same, but the

¹ See Part I of this volume, p. 226.

² See Map 34.

³ See Vol. II, p. 6.

⁴ See Vol. II, p. 413, and Vol. III, Part I, pp. 339-340.

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title under which they worked depended on which Commander was flying his flag at sea at any time. At the end of October 1944 a similar arrangement was applied to the famous Fast Carrier Task Force, which was placed under Admiral Mitscher while Spruance was afloat and under Vice-Admiral J. S. McCain during the periods of Halsey's command of the fleet. It will be appropriate to tabulate here the vast increase in ships and men achieved by the United States Navy during the war.

Table 32. *The Strength of the United States Navy, 1940-1945*¹

Date	Number of Vessels of all Types	Personnel (Including coastguards and marines)
30 June '40	1,099	203,127
30 " '41	1,899	258,021
30 " '42	5,612	843,096
30 " '43	18,493	2,207,720
30 " '44	46,032	3,623,205
30 " '45	67,952	4,031,097

As an indication of the strength which the American Navy could now allocate to a single operation, the expedition to capture the Mariana Islands included fourteen battleships, fifteen large and medium aircraft carriers, ten escort carriers, twenty-four cruisers, about 140 destroyers and escort vessels, and a host of minor warships and auxiliary vessels. Over fifty transports and supply ships carried the 130,000 troops (two-thirds of whom were U.S. Marines) taking part in the initial assaults, and a gigantic fleet train supported the movements.

The Mariana group, the assault on which had been approved on the 12th of March 1944, consists of a chain of islands some 700 miles long; but only the four most southerly ones—Saipan, Tinian, Rota and Guam²—were strategically important, as all the others were too volcanic and too rocky for it to be possible to build airfields on them. Seizure of the southernmost islands of the group would not only enable the Allied fleets' advanced bases to be moved forward about 1,000 miles from the Marshall group, but airfields capable of working the heaviest bombers could be established there; and from them the Japanese homeland could be directly attacked. Lastly their capture would deprive the Japanese of an important staging post for ships and aircraft in transit between their home bases and their distant

¹ From *The United States Naval Chronology, World War II* (U.S. Government Printing Office, 1955).

² See Map 35.

possessions. Though the Japanese Navy fully appreciated the importance of the Marianas, the rising toll which American submarines were taking from their merchant shipping prevented the defences of the group being fully completed by the time that the assault was launched.¹ None the less there were 30,000 enemy troops on Saipan, 19,000 on Guam and 9,000 on Tinian; and Admiral Nagumo, who had made his name in command of the Japanese carrier force which had done such deadly execution in the early days of the war, and was now their Commander-in-Chief, Central Pacific, had his headquarters on Saipan. By early June some 540 Japanese aircraft were distributed around bases stretching from the Marianas through the Palau group and the southern Philippines to the islands off north-western New Guinea.² These dispositions formed part of a plan to bring about a battle in which the Japanese intended that their shore-based aircraft should catch the American fleet while it had only carrier air support, and was hampered by the protection of a great amphibious force. In the middle of May Vice-Admiral Ozawa, in command of the First Mobile Fleet, which consisted of almost the whole of the former Combined Fleet³, concentrated his strength at the anchorage of Tawitawi between Borneo and Mindanao.⁴ On paper it was a considerable force; for Ozawa had five battleships, nine large and medium-sized carriers, thirteen cruisers and twenty-four destroyers. Embarked in the carriers were 430 naval aircraft, but both the aircraft and their crews were now greatly inferior to the Americans in quality. The Japanese Admiral hoped to lure the opposing fleet towards Ulithi or the Palaus with a decoy force, and then, when it came within range of his shore air bases, to attack with his full strength. With refuelling bases close at hand for his aircraft, he hoped to extend their range sufficiently for them to strike their blows while keeping his own ships beyond the reach of the dreaded American carrier-borne aircraft; but although Ozawa knew that an invasion fleet had assembled in the Marshall Islands, he was still in doubt where the American blow would fall. MacArthur's landing on Biak, mentioned earlier, seemed to indicate a southerly target, which would suit the decoy plan very nicely; but, unfortunately for Ozawa, this appreciation of the situation by his Commander-in-Chief, Admiral Toyoda, was basically wrong.

At the end of May the two Attack Forces into which Spruance's Fifth Fleet had divided sailed from Pearl Harbour and Guadalcanal, and on the 8th of June they arrived in the Marshall Islands. It will be seen that the preliminary movements were on similar lines to those

¹ See Morison, Vol. VIII, pp. 167-168.

² See Maps 34 and 35.

³ See Part I of this volume, p. 224.

⁴ See Map 34.

which had preceded the assault on the Gilbert Islands in November 1943.¹ The Northern Attack Force (Vice-Admiral R. K. Turner, U.S.N.) was to make the assault on Saipan on the 15th of June, and the Southern Attack Force (Rear-Admiral R. L. Conolly, U.S.N.) that on Guam; but the date of the latter was left open, and was to depend on the progress made against Saipan. Meanwhile reconnaissance aircraft had reported the disposition of the main Japanese forces fairly accurately, and submarines had been sent to lie in wait off their bases and on their probable approach routes; while shore-based aircraft had been attacking the ring of enemy airfields defending the Marianas. On the 6th of June Admiral Mitscher's Fast Carrier Task Force, now consisting of fifteen carriers with 900 aircraft embarked, and supported by numerous other powerful warships, sallied forth from Majuro lagoon to start softening the Japanese defences by heavy air and naval bombardments. On the 9th, only one day after they had concentrated in the Marshall Islands, the two Attack Forces also moved to the west. Between the 11th and 13th Mitscher's naval airmen obtained complete mastery above the Marianas, and virtually wiped out the Japanese air forces on Saipan, Tinian, and Guam—at very slight cost to themselves. Then it was the turn of the heavy bombarding ships, which poured a rain of shells on to the islands for seven hours on the 13th; but lack of training in the highly specialised task of bombardment, combined with the presence of minefields and restrictions placed on the heavy ships' movements in order to keep them outside the range of the shore batteries, reduced the effectiveness of the gunfire to a disappointing extent. Next day, however, the older battleships attached to the two Attack Forces arrived; and because they were better trained in bombardment and were able to move closer inshore by the channels which the sweepers had cleared through the minefields, they accomplished rather more. Lastly, for the four hours preceding the touchdown of the assault forces on Saipan, which was to take place at 8.40 a.m. on the 15th, aircraft and surface ships struck their final blows; but the defences were far from silenced when the first waves climbed over the coral reefs in their hundreds of L.V.Ts (Landing Vehicles Tracked). By nightfall 20,000 men had landed, but the beach-head had not been firmly secured when, during the night, the Japanese counter-attacked fiercely. None the less the Americans managed to hold on, and on the 16th they gained a firm foothold on Saipan.

At first the Japanese hoped that the carrier raids on the Marianas would prove to be only diversions, intended to draw their forces away from the defence of Biak, which MacArthur had been assaulting for the previous fortnight; but by the 13th they realised that a

¹ See Part I of this volume, p. 237.

genuine invasion was in progress, and that the opportunity for which they had been waiting had come. They then abandoned their plan to reinforce Biak, thus releasing the two giant battleships and a number of cruisers and destroyers to join the main force, and the signal to 'prepare for the decisive operation' was made.¹ Ozawa at once put to sea from Tawitawi, and headed north-east to enter the Philippine Sea by the San Bernardino Strait²; but, unfortunately for him, his departure was reported by an alert American submarine. On the evening of the 15th he emerged from the strait, only to be reported again by another well-placed submarine; and her sighting report made it plain to Admiral Spruance that a major battle was imminent. Twenty-four hours later the Japanese detachment under Vice-Admiral Ugaki, which had come north from the base in the Halmahera group, joined Ozawa; and on the 16th and 17th the latter refuelled his ships while just outside the range of American air patrols flying from Manus in the Admiralty Islands. By the afternoon of the 17th Ozawa was ready, and set course to the north-east at high speed.³

Meanwhile in the American Fifth Fleet Admiral Spruance had been making his preparations to deal with the expected onslaught. He first cancelled the projected landing on Guam, and sent all his transports well clear to the east. Then, leaving a strong detachment to protect the Saipan invasion force, he concentrated the rest of his strength 180 miles west of Tinian. By noon on the 18th, when the two groups of carriers which had been detached to raid the Bonin Islands rejoined his flag, his concentration was complete. Spruance regarded the protection of the Saipan force as his primary duty, and was therefore chary of being drawn too far to the west. Moreover the intelligence which had so far reached him had not yet accounted for all the enemy's major units. His broad plan thus was to steam westwards during the day and retire towards the Marianas by night—until his air searches had located all his adversaries. It will be seen that, so far, Ozawa's plan had worked well; for he had succeeded in keeping outside the range of Mitscher's carrier aircraft (about 350 miles), and his own reconnaissance planes had located his adversary. He intended to keep his distance from the American fleet, and to attack with his full strength of both ship-borne and shore-based aircraft next day. On the night of the 18th–19th he therefore divided his forces into an advance guard under Admiral Kurita, who was given four battleships and three medium-sized carriers, and a main force under himself which included his five large carriers and one medium-sized ship of the

¹ The Japanese called this the 'A-GO (i.e. Number A) Operation'.

² See Map 34.

³ See Map 35.

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San Bernardino Str. Main body of Japanese Fleet (OZAWA)
 9 Carriers
 3 Battleships
 10 Cruisers
 19 Destroyers

FLYING FISH reports 6-35pm Samar 15th

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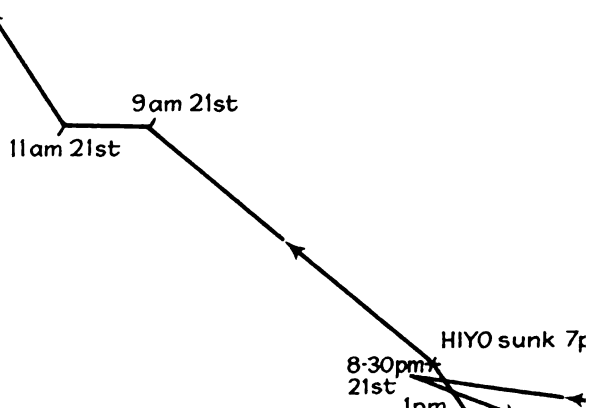
SEAHORSE reports 7-45pm 15th

UGAKI's force joining from the Halmaheras
 2 Battleships
 3 Cruisers
 9 Destroyers

R/V 5pm 16th

1pm 17th Fuelling

6am 18th D/F Fix of enemy fleet
 8-20pm 18th 9p 18th
 3am 19th



HIYO sunk 7p

8-30pm 21st

1pm 20th

6am 18th D/F Fix of enemy fleet
 8-20pm 18th 9p 18th
 3am 19th

PALAU ISLANDS

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same class. Ozawa hoped that, if he kept his main force about 100 miles astern of the advance guard, it would be on the latter that the expected blows from the American carriers would fall; and that his own striking power would thus be preserved for decisive use against the Fifth Fleet. On the evening of the 18th Ozawa broke wireless silence to call for the fullest possible effort from the shore-based squadrons next day—unaware that they had already suffered very heavy losses at the hands of Mitscher's aircrews. This message was picked up by American direction-finding stations, and the estimated position from which it had been sent, which was within 40 miles of Ozawa's actual position at the time, was passed to the fleet at 10 p.m.¹ Mitscher at once suggested turning west and closing the enemy with the object of striking him hard next day; but Admiral Spruance mistrusted the accuracy of the fix, and was conscious of the danger that some part of the Japanese fleet might yet outflank him and attack the Saipan invasion force. His decision not to close immediately has since been criticised, but in the circumstances prevailing at the time it can easily be understood. Night and dawn air searches having failed to locate Ozawa, who was actually still just beyond their range, Spruance turned to the south-west at 6.30 a.m. on the 19th; but progress in that direction was delayed by having to turn into an easterly wind to fly off aircraft. While awaiting further news of his elusive adversary Spruance ordered Mitscher to attack the Guam airfields with part of his force, and their blows finally eliminated any support Ozawa might have received from that source.

The Japanese air searches sent out at dawn on the 19th had meanwhile relocated the Fifth Fleet, and at 8.30 a.m. they launched the first of four heavy attacks. Hardly had Ozawa's flagship, the new fleet-carrier *Taiho*, flown off her quota for the second striking force when she was struck by a torpedo fired by the submarine *Albacore*. A petrol explosion followed, and she sank. This success remained, however, unknown to the Americans for several months.² Then, towards noon, a second disaster befell Ozawa; for the submarine *Cavalla*, which had been trailing his ships, overtook the fleet-carrier *Shokaku* and sent her to the bottom with three torpedoes. These were heavy blows to suffer just when the fruits of his carefully laid plans seemed ripe for harvest. Nor did the Japanese air striking forces do anything to restore the balance; for the majority of the bombers and torpedo-bombers were detected and intercepted by fighters from the American carriers long before they reached their targets. They did practically no damage, and themselves suffered very heavily. Over 300 carrier aircraft were lost to the Japanese during the day, while American



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¹ See Map 35.

² As the *Albacore* was lost on her next patrol her crew never learnt of their outstanding accomplishment.

losses amounted to no more than a tenth of that figure. In the afternoon (probably at about 2.30) Ozawa, still ignorant of the full extent of the day's disasters and still hopeful of renewing the attacks next morning, turned north-west for a rendezvous with his supply tankers¹; while Spruance, after recovering his aircraft, continued on a westerly course with the greater part of his fleet. But he was still without accurate knowledge of the enemy's movements, and it therefore seems surprising that he ordered no night searches to be carried out. Nor did either the dawn reconnaissance on the 20th or a special long-range search, which was actually flown well to the north of Ozawa's true position, bring enlightenment. Not until 3.42 p.m. was the first sighting report of the Japanese fleet, then some 300 miles away, received in the American flagship. Although launching an attack at such a distance so late in the day would mean recovering the aircraft in darkness, and few of the pilots had been trained in night deck-landings, Mitscher did not hesitate. At 4.30 p.m. 131 torpedo- and dive-bombers, escorted by 85 fighters, flew off from his carriers, and between 6.40 and 7 p.m., in rapidly fading light, they pressed home their attacks with deadly effect. Of the three fleet carriers remaining to Ozawa the *Hiyo* was sunk, and the *Zuikaku* (now his flagship) and the *Junyo* were considerably damaged, as were the two light fleet-carriers *Ryuho* and *Chiyoda*, a battleship and a heavy cruiser. The recovery of the American striking forces proved, however, costly—as had been expected. In all about 100 aircraft were lost; but a high proportion of their crews were saved by the very efficient rescue service organised in the fleet. The surviving Japanese ships, none of whose speed had been appreciably reduced, now made for Okinawa, and the dawn searches flown by the Americans on the 21st failed to relocate them. Spruance continued the pursuit until evening, and then returned east to refuel at a rendezvous off Saipan.

So ended the Battle of the Philippine Sea.² In American circles, and especially in the Fifth Fleet, there was a good deal of disappointment over the failure to destroy the entire Japanese Mobile Fleet; but had they known that the *Taiho*, as well as the *Shokaku* and *Hiyo*, had been sunk it is likely that the disappointment would have been mitigated. In the light of history, however, the battle will always be of great tactical and strategical interest, and the benefits which it brought to the Allied cause were undoubtedly immense. Not only was Japanese naval air strength once more almost annihilated, but control of the Philippine Sea passed firmly to the Allies, and the fate of the Mariana Islands was thereby sealed. Nor do the contemporary criticisms of Spruance's strategy and tactics appear, with one excep-

¹ See Map 35.

² For a full account of the battle the reader should refer to Morison, Vol. VIII, Chapters XIV to XVI.

tion, to be well-founded; for the defeat of Ozawa's striking forces on the 19th, which was the turning point of the battle, would hardly have been so decisive had Mitscher's fighters not been available in full force. Had the two fleets been within striking distance of each other at the time, a large proportion of the American fighters would undoubtedly have been escorting their own bombers, and the Japanese raids might thus have inflicted far more severe losses. The one possible error by Spruance now seems to lie in the failure to send out night searches on the 19th; for they might well have relocated Ozawa, and so enabled new blows to be struck at him early next day. One thing at least is certain—namely that the Japanese knew that they had sustained a heavy defeat. Admiral Ozawa indeed offered to relinquish his command, while General Tojo, the Prime Minister, and his whole Cabinet resigned a short while later; and a note of anxiety, even of pessimism, can for the first time be detected in the Japanese official pronouncements on the battle.

The greater part of the Fast Carrier Task Force next returned to its base in the Marshalls; but one group carried out further attacks on the Bonin Island airfields, whence the Japanese were still endeavouring to reinforce the Marianas. Once again the results underlined the great superiority of the new types of American naval aircraft and their well-trained crews.

Meanwhile the struggle for Saipan was continuing with unabated fury; and not until the 9th of July, three weeks after the first landings, was Japanese resistance finally quelled. American casualties were as high as 16,500; but Japanese losses were at least half as great again, and among them was Admiral Nagumo, who committed suicide at the end. With Saipan firmly in their hands the Americans could proceed with the reduction of Tinian and Guam. After the heaviest air and naval bombardment yet recorded in the Pacific the assault on the latter was launched on the 21st of July. Once again the enemy resisted fanatically, and it was the 12th of August before that one-time American possession, which had been lost two days after the attack on Pearl Harbour, was recaptured. Tinian was submitted to the same preliminary softening as Guam, and on the 24th of July the U.S. Marines who had recently been engaged on Saipan assaulted it. On the 1st of August Japanese resistance ended, and thus did all the important islands of the Mariana group pass into Allied hands. The combined operations had been most skilfully and resolutely conducted; but it was the overwhelming sea and air power now available to the Americans which enabled these important successes to be achieved at a cost which to-day seems remarkably light.

An important subsidiary success scored during the Marianas campaign was that American sea and air escorts destroyed no less than ten of the twenty-six submarines deployed by the Japanese in defence

of their island bases; and not one Allied ship was hit by a submarine's torpedo. This was a remarkable tribute to the vigilance and efficiency of the escorts charged with the defence of the vast invasion fleet.

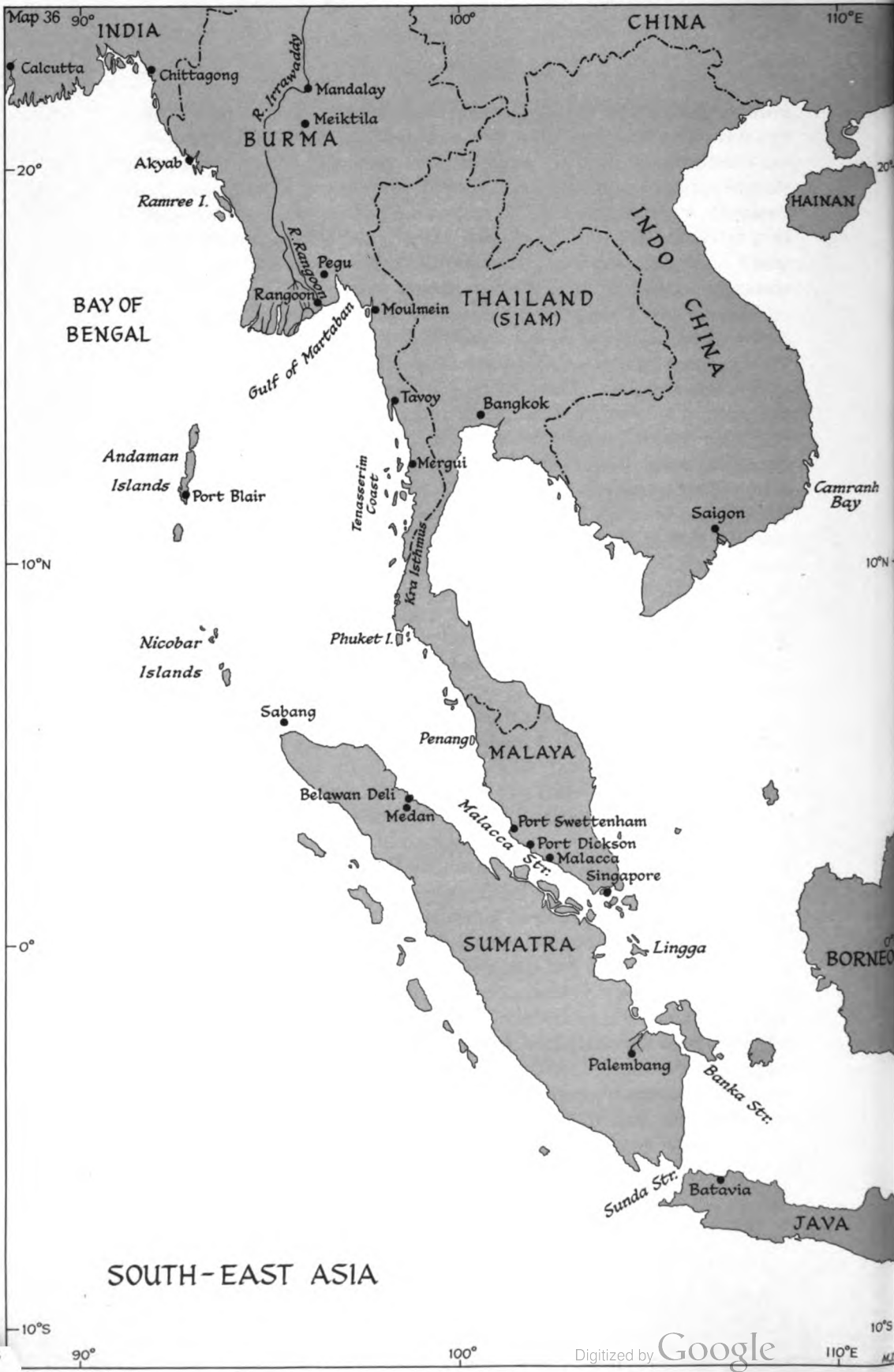
A glance at Map 34 (opposite page 191) will show how, by August 1944, General MacArthur's advance to Biak and Admiral Nimitz's to the Marianas had brought the spearheads of the South-West and Central Pacific commands within mutual supporting distance. Only the Halmahera and Palau groups and the western Caroline Islands now separated them; but before another westward lunge could be made new forward naval and air bases had to be established. Saipan and Guam in the recently captured Marianas could meet the air requirements very well, especially for attacks on the Japanese mainland; but naval bases could not be developed there without much expenditure of time and labour. The Americans' choice therefore fell on Ulithi in the western Carolines to provide a more advanced naval base than Majuro in the Marshalls; and the first intention was that Yap in the same group should be attacked simultaneously with Ulithi.¹ In addition Morotai in the Halmahera group and Pelelieu in the central Palaus were to be seized in order to provide air bases from which the Philippines could be heavily bombed. At the end of July Mitscher's carriers raided the Palau Islands, to which little attention had been given since the previous March²; but they found few naval targets. During the following month MacArthur's air forces stepped up their raids on his next objectives, and by the end of August preparations for a dual assault on Morotai by the South-West Pacific Command, and on Pelelieu, Ulithi and Yap by central Pacific forces were in full swing.³ The Japanese had, however, decided not to contest possession of the Carolines, but to concentrate instead on the defence of the Philippines; and it thus proved unnecessary to seize Ulithi by assault.

On the 26th of August Halsey relieved Spruance, and the title of the command therefore changed to Third Fleet. His first duty was to cover and support both the Seventh Fleet's assault on Morotai and his own command's attack on Pelelieu, both of which were to take place on the 15th of September. From the 6th to the 8th Mitscher's carriers pounded all the principal islands of the western Carolines and the Palau group, after which they moved west to attack bases in the Philippines; but the softening of Pelelieu, although continued for three days, proved less effective than had been hoped, because the Japanese had profited from the rocky nature of the tiny island (only ten square miles in area) to construct elaborate defences, many of

¹ See Map 34.

² See Part I of this volume, pp. 340-341.

³ The assault on Yap was cancelled in September, so that the forces could be diverted to the Philippines (see p. 209).



SOUTH-EAST ASIA

which were cunningly sited in caves, and were so well camouflaged that the attackers were unaware of their existence until the assault troops came under heavy fire from them. Only with great difficulty, and after suffering heavy losses, did the U.S. Marines win a beach-head; and more than two months of heavy fighting were needed finally to quell a garrison whose combatant strength probably did not exceed 8,000 men. On the 23rd of September, eight days after the assault on Pelelieu, Ulithi was seized without opposition.

The assault on Morotai, which was mounted from the recently captured bases in New Guinea, was on a smaller scale than that on Pelelieu; and the assault force was carried to its destination mainly in landing ships and craft. Luckily the weather stayed fine, since otherwise the plan to use L.S.Ts to tow L.C.Ts a distance of some 700 miles could never have been carried out. Rear-Admiral D. E. Barbey, U.S.N., was in command of the naval forces, which included the cruisers *Australia* and *Shropshire* of the Royal Australian Navy, and two of the same service's destroyers. Air cover for the passage was provided from shore bases, while six escort carriers gave close cover to the assault force when it moved in to the beaches. Meanwhile the Third Fleet, operating off the Palaus, was keeping a watchful eye on the safety of the expedition. So effectively had MacArthur's shore-based aircraft neutralised Japanese air power in the Halmaheras and Celebes, and Mitscher's carriers dealt with the bases in the southern Philippines, that Admiral Barbey's force achieved complete surprise. The landing on the 15th of September was almost unopposed, and Morotai passed easily into Allied hands. With the fall of Ulithi, Pelelieu and Morotai the final links were forged in the chains joining the Central and South-West Pacific forces; and splendid naval and air bases were available within easy striking distance of the Philippines. This great achievement was the result of less than a year's offensive; for it had only started with the assault on the Gilbert Islands in November 1943.¹ Rarely, if ever, can maritime power have been used to such good effect as in the operations here described.

Meanwhile a basic disagreement with regard to future strategy had arisen between General MacArthur on the one hand and Admirals King and Nimitz on the other. The General held not only that the earliest possible recapture of the Philippines was the best way of opening the sea road to the mainland of Japan, but that the United States was under a moral obligation not to allow the Japanese occupation of those islands to continue for a day longer than was necessary. The Admirals, however, wished to leap from the Marianas direct to Formosa, and then to seize bases on the coast of China—in spite of the fact that the Japanese army had recently tightened its

¹ See Part I of this volume, pp. 237-238.

grip on that coast. The differences were not resolved until President Roosevelt met General MacArthur at Honolulu at the end of July, when the President accepted the General's view that the next move should be against 'Leyte and then Luzon'. None the less discussion continued among the American Chiefs of Staff, though on the 1st of September they did direct MacArthur to occupy Leyte on the 20th of December—a date which was later considerably advanced. In retrospect it is plain that the strategy which MacArthur advocated, and which was in the main carried out, was the better of the alternatives—as Admiral Nimitz himself has since admitted.¹

While the Central and South-West Pacific forces were making such impressive progress, the British Eastern Fleet had again made its presence felt in the approaches to Malaya and the Dutch East Indies; but the abandonment of all hopes of launching a combined operation across the Bay of Bengal, for reasons explained earlier², meant that the fleet's offensive operations were limited to large-scale raids. On the 19th of June Vice-Admiral Sir Arthur Power, second-in-command to Admiral Somerville, sailed from Trincomalee to carry out an attack on Port Blair in the Andaman Islands³; but the weather was indifferent, and the *Illustrious's* aircraft did little damage. Early in the following month, by which time the *Victorious* and *Indomitable* had joined the fleet, a more ambitious foray was planned⁴; and on the 22nd of July the Commander-in-Chief himself sailed with two carriers (*Victorious* and *Illustrious*), three battleships, seven cruisers and ten destroyers with the object of bombarding Sabang at the northern tip of Sumatra. At dawn on the 25th the carrier aircraft attacked the nearby airfields; but they found few targets. Then the heavy ships opened fire on the harbour and shore installations, while the cruisers and destroyers moved closer inshore to engage batteries and radar stations. The Dutch cruiser *Tromp* and two British destroyers swept round the outer bay, engaging shore targets at point-blank range; and the destroyers fired torpedoes into the harbour as they passed the entrance—action which Admiral Somerville described as 'spectacular'. The air and surface ship attacks jointly inflicted considerable damage on the oil tanks and repair shops of the port, and two small vessels (1,500 tons) were sunk. No Allied ship suffered more than superficial damage from the enemy's return fire,

¹ For a full discussion of these strategic differences and their resolution see Morison, Vol. XII, pp. 4-12.

² See Part I of this volume, pp. 345-346.

³ See Map 36.

⁴ The naval operations of the Eastern Fleet were of course a general responsibility of the Supreme Commander, Admiral Mountbatten (see Part I of this volume, pp. 214-218), and in their strategic aspects were planned in his headquarters.

and the carriers' fighters easily dealt with the few Japanese aircraft which tried to attack the fleet as it withdrew.

On the 8th of August the Eastern Fleet was deprived of the services of the battleship *Valiant*, which was damaged when the floating dock at Trincomalee suddenly collapsed. She was an unlucky ship, for she had been out of commission for a long time earlier in the war while repairing the serious damage sustained when Italian frogmen penetrated into Alexandria on the 19th of December 1941.¹ Nor could she now come home for repairs by the shortest route through the Suez Canal; for her exceptionally deep draught caused her to ground at the southern entrance, and she had therefore to be diverted round the Cape of Good Hope. As the new battleship *Howe* soon arrived in the Eastern Fleet her departure did not, however, appreciably affect its strength.

The attack on Sabang on the 25th of July was the last operation to be planned and executed by Admiral Somerville, who was succeeded by Admiral Sir Bruce Fraser, lately Commander-in-Chief, Home Fleet, on the 23rd of August. Somerville's period of command had begun at a time of grave anxiety in the dark days of March 1942.² Even after the worst clouds had lifted his task had often been a thankless one; for his fleet had constantly been deprived of much of its strength in order to reinforce other theatres. Thus he had never been able to conduct offensive operations with a vigour comparable to that which had earned him such great distinction in Force H in 1941.³ His next appointment was as head of the British Admiralty Delegation in Washington.

Towards the end of August, and again in the middle of September, Rear-Admiral C. Moody, who was in command of the Eastern Fleet's carriers, attacked Japanese port installations in Sumatra with aircraft from the *Victorious* and *Indomitable*. Neither raid produced very significant results, and they showed that the training of our young naval aircrews had by no means yet reached a pitch which would enable them to work confidently alongside their American comrades. Next, on the 15th of October, Admiral Power sailed with the fleet's main strength to carry out an attack on the Nicobars. Its main purpose was to distract Japanese attention from the Philippines; for the American landings on Leyte were to take place on the 20th. Between the 17th and 19th the fleet made several air strikes and bombardments; but the chief significance of the operation was that it was the first occasion when the Eastern Fleet stayed off Japanese-held positions for a prolonged period—a sure indication of the extent

¹ See Vol. I, pp. 538-539.

² See Vol. II, p. 23.

³ See Vol. I, pp. 242-244, 298, 302-304, etc.

to which we had recovered command of the Indian Ocean. As a diversion the raid had little, if any effect; and the damage done to enemy shipping and shore installations was slight. It is indeed now plain that even a full-scale amphibious operation across the Bay of Bengal, such as the Supreme Commander had long wished to carry out, would not have induced the Japanese to divert any appreciable strength from the Pacific, where at this time they were very hard-pressed.

In mid-November Rear-Admiral Sir Philip Vian, whom we last encountered in command of the Eastern Naval Task Force in the Normandy landings, took command of the Eastern Fleet's aircraft carrier squadron, and on the 17th of December he sailed from Trincomalee with the *Indomitable*, *Illustrious* and certain light forces for the final sortie of the year. This was to be a carrier air attack against the oil refinery at Belawan Deli in northern Sumatra¹; but the striking force found it shrouded in low cloud and so had to switch to the harbour works and railway yards. There too visibility was very bad, and little damage was done.

While our naval forces in the Indian Ocean were thus steadily increasing their offensive pressure, and improving their training, the Royal Air Force's strength in maritime aircraft was also growing. By October the number of reconnaissance and flying-boat squadrons available in India and Ceylon had risen to four of Liberators or Wellingtons, and seven of flying boats; and it was on them that the provision of air escorts for convoys principally fell. Their work was controlled by the Air Officer Commanding No. 222 Group, whose headquarters were in Ceylon, and he was now appointed the co-ordinating authority for maritime air operations in the whole theatre.² The R.A.F.'s air minelaying campaign was also being stepped up; but we will consider that later with the other measures taken at this time to tighten the blockade of Japan.

On the 22nd of November Admiral Fraser hoisted his flag as Commander-in-Chief of the still unformed British Pacific Fleet, and Admiral Power took over the ships earmarked to remain in the South-East Asia Command, with the title of C-in-C, East Indies Fleet. In the following month the British Pacific Fleet began to form in Ceylon, and by the end of the year five fleet carriers (*Illustrious*, *Victorious*, *Indefatigable*, *Indomitable* and *Formidable*), two battleships (*Howe* and *King George V*), seven cruisers (*Swiftsure*, *Argonaut*, *Black Prince*, *Ceylon*, *Newfoundland* and the New Zealand Navy's *Gambia* and *Achilles*), and twenty-two fleet destroyers had been allocated to Admiral Fraser. Not all of the ships had, however, yet arrived on the station when, on

¹ See Map 36.

² See Part I of this volume, pp. 219-220, regarding the formation and duties of No. 222 Group of the R.A.F. up to this date.

the 4th of December, the C-in-C flew from Ceylon to Australia and thence on to Pearl Harbour for conferences with Admiral Nimitz on the future employment of his fleet. The problems which faced Admiral Fraser were extremely complex, and his position was probably unique in the long annals of the Royal Navy; for while he was under Admiral Nimitz for operational purposes, he was responsible to the Admiralty for the maintenance of his ships and the welfare of their crews; and the governments of Australia and New Zealand owned the rearward bases and shore installations on which he depended. Lastly nearly all his supplies had to be transported across some 12,000 miles of sea from the British Isles.

During the latter half of 1944 the Japanese abandoned the attempt to convoy ships of any size to the ports of Burma, and were endeavouring to supply their armies through the small harbours of southern Burma, north Malaya and Siam (Thailand), whence they transhipped stores and reinforcements by road or railway to the front. But this switching of the enemy's supply traffic had been observed by our reconnaissance aircraft, and in consequence we planned to disrupt it by bombing the ports and laying mines in their approaches. This new offensive started in the summer of 1944, and was ultimately extended to cover all the enemy-held harbours in south-east Asia. We will return later to the results it accomplished, but may here note that it was the virtually undisputed sea and air supremacy which we had established in the Bay of Bengal that drove Japanese shipping from those waters; and that it was mainly our minelaying aircraft, bombers and patrolling submarines which inflicted such losses as forced the enemy to abandon his most direct and efficient supply routes. In the last six months of 1944 the submarines of the Eastern Fleet sank sixteen merchantmen (over 500 tons) totalling 35,356 tons. In addition the *Telemachus* sank the large Japanese submarine I.166 in the Malacca Straits on the 17th of July¹, the *Trenchant* sank the German U.859 off Penang on the 23rd of September, and the Dutch submarine *Zwaardvisch* accounted for U.168 off the north coast of Java on the 5th of October. Those achievements showed yet again the deadly capabilities of submarines as anti-submarine vessels. Also in October the *Trenchant* carried two 'Chariots'² to the harbour of Phuket, north of Penang³, where they destroyed a ship of 4,859 tons and damaged another severely. Both 'Chariots' returned safely to the parent submarine. The only loss suffered by our submarines in this period occurred on the 22nd of November, when the *Stratagem*

¹ A vivid description of this success, written by the officer who achieved it, may be found in Commander William King's *The Stick and the Stars* (Hutchinson, 1958).

² See Vol. II, pp. 258, 342-343, 307-308 and 434 regarding earlier 'Chariot' operations. This was the first occasion on which they were used in the eastern theatre.

³ See Map 36.

was caught in the dangerously shallow waters of the Malacca Strait and was sunk by a Japanese destroyer.

Though we shall revert to the work of the submarines of the Eastern Fleet when we consider the blockade of Japan, we may here note that, of all the maritime forces in the theatre, it was for a long period only they who could take the offensive against the enemy. Beginning early in 1942, when the first two had reached Colombo from the rapidly disintegrating ABDA command¹, their strength had gradually increased until, in September 1944, shortly before the depot ship *Maidstone* and the 8th Flotilla of ten boats moved to western Australia², there were twenty-six submarines based on Ceylon. But whether many or few boats were available they had steadily continued their patrols in enemy-controlled waters; and the contribution which their minelaying operations and torpedo attacks made to the turn of the tide in the Indian Ocean was certainly very great. Their work was all the more commendable because the 'S'- and 'T'-class boats, which comprised the Ceylon-based flotillas, were by no means well suited to long patrols in tropical waters; their base facilities—on which submarines must always greatly rely for rest and refitting—had until 1944 been grossly inadequate; and the waters in which they had to work were often both difficult and dangerous. None the less the great majority of the eighty-eight patrols carried out between January and September 1944 produced satisfactory results of one kind or another; and at the period now reached in this history their main trouble was to find worth-while targets.

To turn to the depredations of the enemy's submarines (both German and Japanese) in the Indian Ocean, the Germans renewed their activities in the middle of 1944, and during June, July and August they sank no less than seventeen Allied ships totalling 107,227 tons. As in the first quarter of the year, it was this theatre that produced the greatest successes of the period to the U-boats³; and the reason was basically the same as before—namely that we did not possess sufficient escort vessels to convoy all merchantmen over the great distances involved. To reduce congestion in ports while waiting for convoys to be formed many ships were sailed independently; and it was generally from them that the U-boats claimed their victims. Admiral Somerville had foreseen what might arise if U-boat activity was renewed after the lull between March and May; but the Admiralty had discouraged the use of his fleet destroyers to augment the convoy escorts and had also advised against forming so-called 'hunter-killer' groups around his escort carriers on the model used by the

¹ See Vol. II, pp. 21–22.

² See p. 230.

³ See Part I of this volume, pp. 349–350.

Americans in the central Atlantic.¹ In recommending that such ships as he could spare would be better employed as convoy escorts the Admiralty was undoubtedly on firm ground; but the Commander-in-Chief none the less formed a 'hunter-killer' group. Though the sighting of U.198 by aircraft flying from its escort carriers on the 10th of August led to her destruction two days later by the frigate *Findhorn* and the Royal Indian Navy's sloop *Godavari*, that solitary success can hardly be taken to vindicate the departure from the principle which all our recent experience had substantiated—namely that, unless and until a surplus of sea and air escorts was available over and above those needed for convoy duties, hunting for U-boats was unlikely to prove a profitable venture.

From June to August there were generally four or five German and two Japanese U-boats in the Indian Ocean, and it was one of the latter (I.8) which sank the American ship *Jean Nicolet* on the 2nd of July, and then massacred most of the survivors with callous brutality. The Japanese effort had, however, by this time been spent, and thereafter their submarines worked only in the Pacific. By the autumn of 1944 the German U-boat campaign had also collapsed, and only three more ships (19,695 tons) were sunk during the last four months of the year. Various causes contributed to this. No fresh boats arrived from Europe, shortages of torpedoes and fuel were becoming serious, repairs and maintenance work had become increasingly difficult, and in October the R.A.F. closed Penang with mines, thus forcing the U-boats to shift their base to Batavia. Nor should we forget that the air escorts provided by the R.A.F. commands in the theatre, from Aden and East Africa to India and Ceylon, though never large in numbers by Atlantic standards, undoubtedly contributed to the discomfiture of the U-boats and to the safe arrival of the thousands of fighting men and vast quantities of supplies needed by the Allied land forces in India and Burma.

The curtain finally fell on the U-boat campaign in South-East Asia when headquarters in Germany ordered all the boats which could be made seaworthy to leave for home not later than mid-January 1945. Three were lost very soon after the homeward movements began², and one (U.183) fell victim to the American submarine *Besugo* in the Java Sea on the 23rd of April 1945. Three reached Europe safely—in spite of having no 'Schnorkels'; and the last four were turned over to the Japanese on the surrender of Germany. Of these boats U.862 operated off Australia from mid-November 1944 to February 1945, and sank two ships. The second

¹ See pp. 174-175.

² These were:

U.168 sunk by the Dutch submarine *Zwaardvisch* on 5th October off Batavia (see p. 203).

U.537 sunk by the American submarine *Flounder* off north Java on 9th of November.

U.196 lost from unknown cause in the Sunda Strait on the 30th November.

of the latter, the American ship *Peter Sylvester*, sunk on the 6th of February 1945, was the last Allied vessel to fall victim to an enemy submarine in the Indian Ocean. So ended the underwater threat to British shipping in this vast theatre. At several periods—notably from October to November 1942 and again from January to March 1944¹—the campaign had brought the enemy a comparatively large return for a relatively small effort; but that is not surprising in remote waters where it was difficult, if not impossible, to organise escorted convoys on every route.

One interesting side of the sea-air anti-submarine operations carried out in the Indian Ocean in 1944 was the number of occasions on which the flying-boats and land-based aircraft of Nos. 222 and 225 Groups sighted and reported lifeboats containing survivors from sunken merchantmen, so enabling warships to be sent to rescue them. To give only one example of this work, when the P. and O. liner *Nellore*, with 341 persons aboard, and the American ship *Jean Nicolet* were sunk by Japanese submarines on the 29th of June and 2nd of July respectively to the south of the Maldivé Islands, Catalinas and Liberators from Diego Garcia and other bases flew prolonged and widespread searches with the triple object of finding the enemy, escorting other ships through the danger zone, and locating survivors. It was entirely thanks to aircraft sighting the lifeboats that we were able to save 234 of the *Nellore's* complement and twenty-three of the ill-fated crew of the *Jean Nicolet*.

While these events were in progress at sea the British Army had driven back the Japanese offensive against India in the middle of the year, and had at last taken the measure of their adversaries. To this victory the maritime forces contributed only the safe arrival of the supplies and reinforcements needed for the land campaign. On the Arakan coast of Burma, where the light naval forces had been doing good work in preventing supplies reaching the enemy, the breaking of the monsoon in April put a stop to operations, and all craft except a few M.Ls and L.C.Ps had to be withdrawn. The remaining M.Ls continued to patrol the many jungle-banked inlets or 'chaungs', while the L.C.Ps acted as ferry craft for the Army. When the monsoon season ended in October the small vessels returned in full strength, and thereafter worked continuously off that difficult coast on duties such as landing reconnaissance or raiding parties and bombarding enemy positions. In December the Australian destroyers *Napier* and *Nepal* arrived to give the support of their heavier guns to the opening of the third Arakan campaign.

Meanwhile planning for the assault on Akyab in February 1945 was approaching completion when, on the 27th of December, we

¹ See Vol. II, pp. 28 and 184-185, and Part I of this volume, pp. 349-350.

learnt that the Japanese were preparing to evacuate the port.¹ The plans were quickly adjusted to profit from this favourable development, and by the end of the year the modified expedition was ready to sail from Teknaf, about 120 miles south of Chittagong. The story of the final campaign in the Arakan will be told later.²

We left the forces of the South-West and Central Pacific commands at the time of the seizure of Morotai, and of Pelelieu in the Palau group and Ulithi in the western Carolines, in September 1944³; and it is now time to review events in their theatres during the last three months of the year. The latest Allied advances had forced the Japanese to recast yet again their plans to hold a defensive perimeter in the Pacific⁴; for they realised, correctly, that a new attack was probable in the very near future, and considered that it would be aimed at either the Philippines or Formosa. They fully appreciated that a successful assault at either point would probably be fatal to their cause; since communications between their homeland and the southern territories, on which they depended for supplies of oil fuel and of many raw materials, would thereby be severed. They therefore gave the defence of the Philippines and Formosa the highest priority, concentrated as much air strength as possible in them, and prepared to commit all their surviving naval forces to the task of repelling the invaders; but trained air groups to replace those lost in the Philippine Sea battle could not yet be provided for the carriers, which in consequence were more or less immobilised in Japanese home waters. The second factor which greatly vitiated the prospects of the new Japanese plan was the severe shortage of oil fuel from which their homeland was suffering; for it had forced them to station their major warships at Singapore or in Borneo, where stocks were ample, rather than at the bases which were most favourably placed strategically. Lastly, although on paper Japanese naval strength was still considerable⁵, insufficiency of flotilla vessels and lack of carrier air power had greatly reduced its true fighting value. Their intention was that, if the next Allied offensive was launched before the new air groups had completed their training, the battleships and cruisers stationed in the south would at once counter-attack at the points of disembarkation. Meanwhile the empty or partially manned carriers from Japan proper would act as decoys to draw away the American carriers, and would also deliver flank

¹ See Map 36.

² See Chapter XXV.

³ See pp. 198-199.

⁴ See Part I, pp. 224-225 and 331-332, regarding earlier plans for the defensive perimeter.

⁵ In the autumn of 1944 the Japanese possessed nine battleships, eleven aircraft carriers of all types, twenty-four heavy and light cruisers, and sixty-three destroyers. Not all of these were, however, in a fit state for operations.

attacks on the invasion fleets; while the land-based aircraft would make their maximum effort against the same targets.

We saw earlier how Halsey's fast carrier task force pounded the Philippine air bases in the second week of September¹, as a preliminary to the assault on the Palau Islands. The damage then done was considerable, but the Japanese soon flew in fresh aircraft from their more northerly bases, and the presumption that their shore-based air strength had been 'annihilated', which Admiral Nimitz had accepted, thus soon proved optimistic. The American Chiefs of Staff, however, acted on his report, and at once approved a direct descent on Leyte, in the central Philippines, instead of first assaulting Mindanao in the south of the same group.² They also advanced the date of the landings from the 15th of November to the 20th of October. These decisions accorded fully with the contemporary American policy of speeding up the tempo of their offensives and reducing the number of separate combined operations, each of which required considerable time to plan and mount. Inevitably this entailed acceptance of considerable risks, chief among which was the need to rely entirely on carrier-borne aircraft to win supremacy over the beaches, and maintain it until such time as bases could be established on shore; for Morotai, the nearest Allied air base to the Philippines, was some 500 miles from the scene of the assault. A second risk arose from the fact that October was likely to produce some of the worst weather of the year in those waters. Not only is the typhoon season then not quite over—and a storm of typhoon intensity could totally disrupt a big combined operation—but the north-east monsoon begins to blow in that month, sometimes reaches gale force, and invariably brings a great deal of rain. Such weather might well hold up a landing, and would almost certainly delay the construction of new airfields on shore.

Hitherto the Central and South-West Pacific commands, though their plans had been co-ordinated on the level of the American Chiefs of Staff, and naval forces had sometimes been sent by Nimitz to assist MacArthur's offensives³, had generally worked as separate entities. By September 1944, however, the two great advances had met in the Philippine Sea, and the forces of both commands were poised alongside each other for the next blow. Thus a redefinition of the responsibilities of the two commanders became necessary, and the Combined Chiefs of Staff therefore nominated MacArthur to direct the new enterprise. This change meant that his naval forces had to be strengthened; for the Seventh Fleet of the South-West Pacific

¹ See p. 198.

² See Map 34.

³ For example Admiral Mitscher's Fast Carrier Task Force came south to support MacArthur's assault on Hollandia in New Guinea in April 1944 (see Part I, p. 341).

command had so far been conspicuously weaker than the Third or Fifth Fleet in the Central Pacific.¹ Nimitz therefore transferred a substantial number of ships to MacArthur, including the whole of Vice-Admiral T. S. Wilkinson's Amphibious Force; but he himself retained control of the Third Fleet, including the Fast Carrier Task Force, which was to cover and support the landings. The consequences of this division of command will be discussed later.

The revised date for the assault on the Philippines left MacArthur and his staff barely four weeks in which to complete their plans and issue the orders. Vice-Admiral T. C. Kinkaid, U.S.N., commander of the Seventh Fleet, was placed in charge of the naval side of the operation, and under his general control two separate assault forces were to land on the eastern shore of Leyte Island.² The more northerly force was to assemble at Hollandia in New Guinea, whence some 50,000 troops would be carried to the scene of the assault by Rear-Admiral D. E. Barbey, U.S.N., and his experienced Amphibious Force; while the southern landings were to be made in about the same strength by the troops originally detailed for the assault on Yap.³ These latter had been diverted to Manus while on passage from Hawaii when the date of the Leyte operation was advanced. The detachments from the Third Fleet, sent to reinforce Kinkaid and support the landings, consisted of a powerful bombardment group of six old battleships, a like number of cruisers and sixteen destroyers; while eighteen escort carriers, as well as air groups from the Fast Carrier Task Force, were to furnish overhead cover. Lastly close surface ship cover was to be provided by four cruisers and seven destroyers, which included the *Australia*, *Shropshire*, two R.A.N. destroyers, and the fast minelayer *Ariadne*, which was serving as an assault troop carrier.

While the assault forces were assembling and training at Hollandia and Manus, the Fast Carrier Task Force, which had supported the assaults on the Palau Islands and Morotai in mid-September⁴, switched its effort back to the Japanese airfields and harbours in the Philippines. The strike groups met little opposition during these incursions, and again inflicted heavy losses. Before the end of September they claimed to have destroyed about 1,000 more Japanese aircraft, and some 200,000 tons of shipping.⁵ Next the Third Fleet's main force entered the fray with the primary object of 'creating an opportunity to engage and destroy a major portion of the enemy

¹ See p. 190 regarding the alternative titles of the Central Pacific naval forces.

² See Maps 34 and 35.

³ See p. 198 and fn. (3).

⁴ See p. 198

⁵ These contemporary claims cannot be verified from Japanese records, and are probably exaggerated.

fleet' and the secondary one of neutralising the Japanese air bases in the Nansei Shoto, which provided staging points on the reinforcement route for aircraft flying from the homeland to the Philippines, and in Formosa.¹ Okinawa in the Nansei chain was the first to receive the attentions of Halsey's ships, which arrived off that very important base on the 10th of October in the wake of a convenient typhoon, which helped them to achieve surprise. Two days later they switched to the Formosan airfields, and although opposition was at first quite heavy, it dwindled rapidly under the heavy blows struck by the carriers' striking forces. After two days, during which they ranged continuously up and down the island, they claimed another 500 enemy aircraft and 50,000 tons of shipping.

On the evening of the 13th, while Halsey was withdrawing southwards, a Japanese aircraft torpedoed the heavy cruiser *Canberra*² close off the Formosan coast, and damaged her so severely that the Admiral had to decide whether to sink her or accept the risk of exposing his fleet to further attacks while trying to tow her to safety. He chose the second alternative, and attacks increased next day, as he had expected. The heavy cruiser *Houston* was crippled by an air torpedo and had to be taken in tow, while several other ships suffered lesser damage; but American fighters exacted a very heavy toll from the attackers, both over the fleet and around the bases from which they had come. Halsey hoped that his cripples would serve as a bait to lure out the Japanese fleet, and disposed a proportion of his strength in readiness to meet it. So greatly exaggerated were the claims made by the enemy aircrews that a powerful Japanese squadron did in fact sail from the Inland Sea on the 14th; but its commander realised in time that he was steaming into a trap, and reversed course two days later without ever coming within range of Halsey's carrier aircraft. On the 15th and 16th air attacks on the fleet continued and the *Houston* was torpedoed a second time; but this modest accomplishment cost the Japanese so heavily that, for the third time, their carrier air groups were virtually wiped out while working from shore bases.³ This deprived their Navy of the aircraft and crews which might have played a decisive part in the battle for the Philippines now pending; and the tendency of the Japanese to misuse their carrier air power with reckless prodigality is once again to be remarked.

By the 17th of October the damaged American cruisers had been towed out of range of the enemy, and for the next two days Halsey

¹ See Map 34.

² This American ship had been named in compliment to the Australian Navy's *Canberra*, which was sunk in the Battle of Savo Island on 9th August 1942. (See Vol. II, pp. 224-225).

³ See Vol. II, p. 423, and Part I of this volume, p. 235, regarding the earlier occasions.

concentrated his effort against the air bases on Luzon. Meanwhile the main invasion forces had sailed from Manus and Hollandia, and on the night of the 19th they arrived safely off the entrance to Leyte Gulf, where preliminary landings on offshore islands, bombardments and minesweeping were already in progress. Early next morning the warships and bombers started their final softening of the defences, and at 10 a.m. the main landings took place at Tacloban and Dulag.¹

As the beaches were weakly held, and there were no underwater obstacles such as had produced serious difficulties in Seine Bay², the assault forces got ashore at small cost and quickly captured Tacloban airfield—which was very soon to prove its value; but thereafter Japanese resistance stiffened and progress became far more difficult. The supporting naval forces suffered few casualties, but on the 21st the cruiser *Australia* (R.A.N.) was hit by a 'Kamikaze' suicide bomber which dived into her bridge, killed her captain and inflicted damage which forced her to withdraw to Manus. This was the first suicide attack on any Allied ship, and gave a foretaste of a new peril which was to become very familiar in the near future.

As early as the 17th the Japanese had assessed, correctly, that the invasion of the Philippines was imminent. Next day Admiral Toyoda, Commander-in-Chief of the Combined Fleet, ordered the execution of his carefully thought out countermeasures³; but the attempt to defend Formosa against Halsey's devastating raids had cost him so dearly that only about 100 aircraft were left to man the Japanese carriers, and it was therefore plain that their rôle would have to be that of decoy rather than striking force. Toyoda's counter-attack had originally been timed for the 22nd, but various delays caused a three-day postponement.

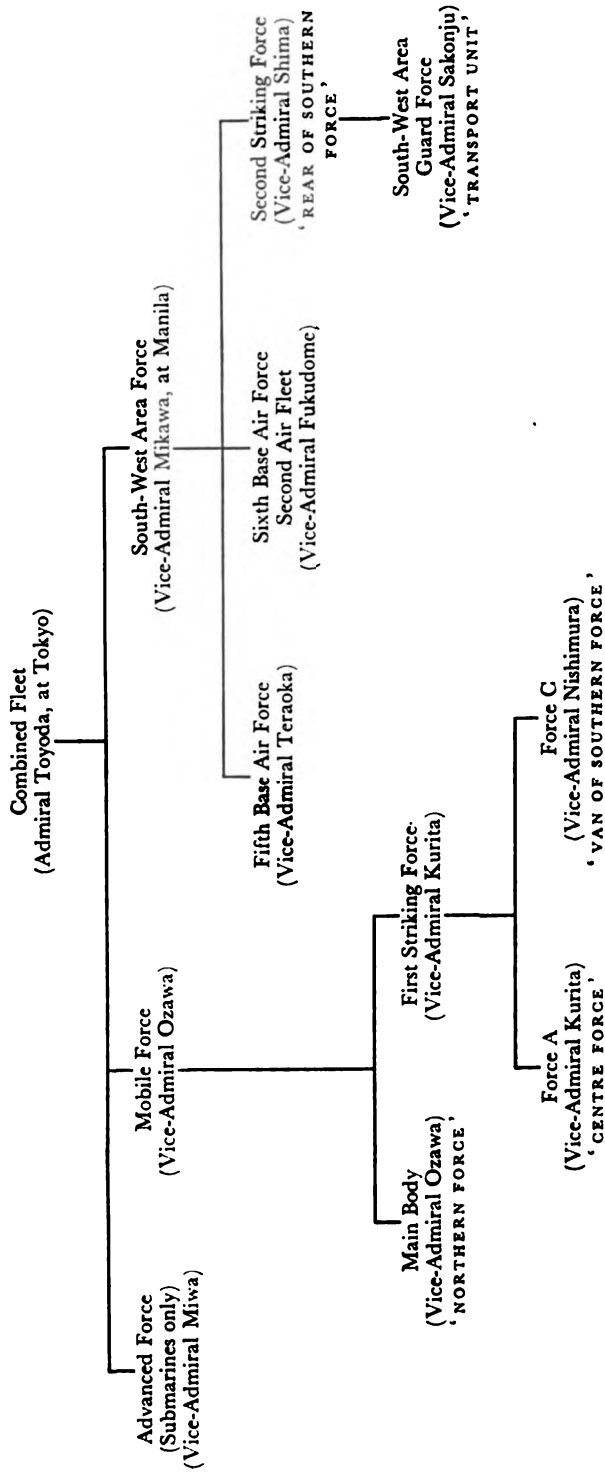
To follow the complicated fleet movements and the succession of sea and air battles which took place off the Philippines between the 23rd and 27th of October 1944 it is necessary to understand the somewhat bizarre Japanese command structure, and to examine in some detail the duties allocated to the various forces. The command structure is shown diagrammatically below (page 212); but in this narrative we will adhere to the commonly accepted practice of referring to Vice-Admiral Ozawa's Main Body as the 'Northern Force', Vice-Admiral Jurita's Force A as the 'Centre Force', and Vice-Admirals Nishimura's and Shima's Force C and Second Striking Force as the 'Van' and 'Rear' of the 'Southern Force' respectively.

To consider now the principal Japanese forces in turn, Admiral

¹ See Map 38.

² See pp. 44, 47 and 50.

³ These were known as 'Plan SHO (i.e. Victory) 1'.



Ozawa had in the Northern Force one fleet carrier (*Zuikaku*), three light fleet carriers (*Chitose*, *Chiyoda* and *Zuiho*), two converted battleships fitted with flight decks (*Ise* and *Hyuga*), three light cruisers and eight destroyers. His few aircraft were divided among the four carriers; but none at all remained for the two converted battleships. His orders were that he should steam south from Japan towards the Philippines with the object of luring Halsey's Fast Carrier Task Force away from Leyte Gulf, regardless of cost to himself, thus making it possible for the other forces to attack and destroy the invasion fleet. Kurita's Centre Force comprised the main Japanese surface ship strength. He had the two battleships *Yamato* and *Musashi*, of 64,000 tons and mounting 18·1-inch guns, the older battleships *Nagato*, *Kongo* and *Haruna*, twelve heavy and light cruisers and fifteen destroyers; and with this considerable strength he was to penetrate into Leyte Gulf by the San Bernardino Strait.¹ The ships detached to Nishimura were far fewer than those Kurita kept under his own command; for he was only given two battleships (*Yamashiro* and *Fuso*), the heavy cruiser *Mogami* and four destroyers; while Shima's squadron was weaker still, and consisted only of three cruisers and four destroyers. The two sections of the Southern Force were both to fight their way through to Leyte Gulf by the Surigao Strait, and the intention was that they should meet Kurita's Central Force off the assault beaches in the early hours of the 25th of October. But the diagram opposite shows how, although Nishimura's and Shima's ships formed part of the same movement and had identical objects, they were responsible to different superiors. It would have been hard to devise a command structure more likely to cause confusion.

Kurita arrived at Brunei in Borneo from Singapore on the 20th of October, refuelled his ships and divided them between himself and Nishimura as had been planned. Both Admirals sailed on the 22nd, Kurita taking the Palawan passage towards Mindoro, and Nishimura passing through the Sulu Sea towards Mindanao.² Shima's small squadron had meanwhile left the Pescadore Islands off western Formosa on the 21st, and was on its way south to 'support and cooperate' with Nishimura; but as no tanker met him at the anchorage off Palawan Island where he called, he was short of fuel when he started off for the Surigao Strait on the 24th. It is noteworthy that he and Nishimura had no contact with each other before they sailed to carry out the operation; nor did either of them become aware of the other's position and progress until some twenty-four hours later.

Admiral Ozawa's 'Northern Force' had meanwhile left the Inland

¹ See Map 38.

² See Map 37.

Sea on the 20th, and headed south for Luzon. To further his decoy function he was anxious that his movements should be reported to the American fleet as early as possible; but by a curious chance the patrolling American submarines which had been watching the exit channels from the Inland Sea had just withdrawn in order to resume attacks on merchant shipping. Ozawa's departure was thus entirely undetected.

So much for the preliminary Japanese movements. On the Allied side, early on the 23rd two American submarines reported strong enemy forces moving through the Palawan passage (actually part of Kurita's Centre Force); and both of them attacked. The *Darter* sank Kurita's flagship (the heavy cruiser *Atago*) and severely damaged the *Takao*¹; while the *Dace* sank the *Maya*. Unhappily the *Darter* then ran aground and had to be abandoned; but the first round in what was to prove an unusually long-drawn contest had undoubtedly gone to the Allies. The rear squadron of the Southern Force (Admiral Shima) was also reported by an American submarine on the 23rd; but her attack was unsuccessful. That night another submarine tracked Kurita's Centre Force into the Mindoro Strait; but neither Ozawa's Northern Force nor the van of the Southern Force (Nishimura) had yet been reported.

The sightings so far made by the American submarines were, however, quite enough to indicate to the commanders of the Third and Seventh Fleets that important enemy movements were in train. Admiral Kinkaid guessed that they presaged an attack on the invasion shipping in Leyte Gulf by way of the Surigao Strait, and prepared his dispositions to meet the threat. The Third Fleet's main strength (Mitscher's Fast Carrier Task Force²) was already organised into four groups of approximately equal strength, and on the 23rd Halsey stationed three of them to the east of the Philippines about 125 miles apart. The most northerly, under Rear-Admiral F. C. Sherman, U.S.N., consisting of four carriers, two battleships and four light cruisers, was off Central Luzon; in the centre group, off the San Bernardino Strait, were Rear-Admiral G. F. Bogan's three carriers, two battleships and three light cruisers; while the southernmost group, consisting of Rear-Admiral R. E. Davison's four carriers, two battleships and two heavy cruisers was off the island of Samar.³ Vice-Admiral J. S. McCain, U.S.N., was on his way to Ulithi to refuel the fourth group, which comprised four more carriers, two battleships and four light cruisers. Admiral Halsey's fleet flagship was the battleship *New Jersey*, which was serving in Bogan's group; while the fleet

¹ See Map 37. The *Takao* eventually reached Singapore safely, but suffered further damage in the attack by British midget submarines on 31st July 1945 (see p. 376).

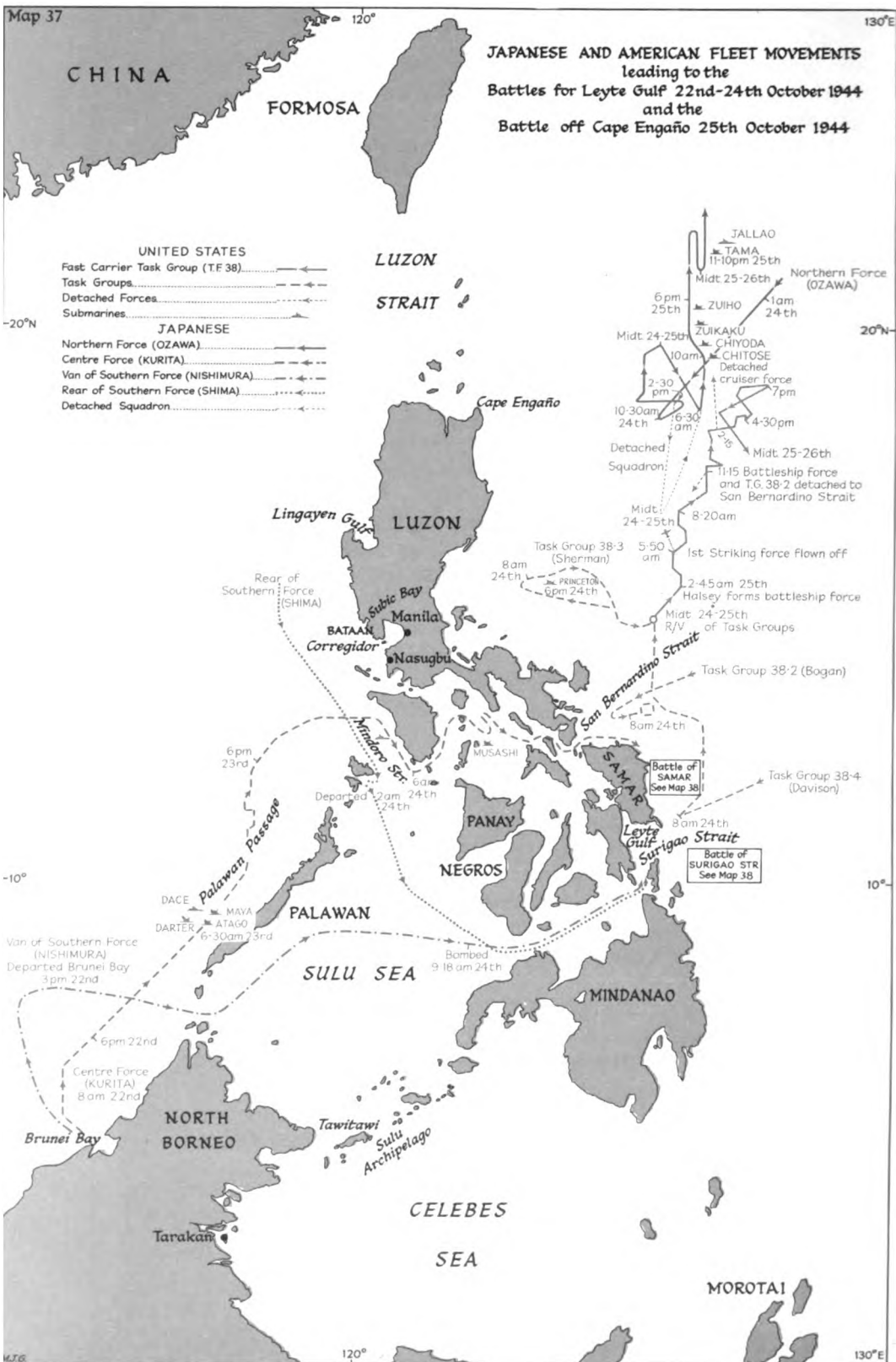
² This was called Task Force 38.

³ See Map 37.

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carrier *Lexington* of Sherman's group flew Mitscher's flag. No less than fifty-eight destroyers were shared between the four carrier-battleship groups for screening and general duties. This tremendous concentration of power was, of course, fully adequate to deal with both Kurita and Ozawa; but the first essentials were to find the main Japanese forces, and to estimate their intentions correctly.

Halsey therefore ordered air searches to be sent out at dawn on the 24th over a wide arc stretching from Lingayen Gulf to northern Mindanao; but he ordered no searches to the north or north-east, which now seems surprising. It thus came to pass that although the enemy's Central and Southern Forces were reported early in the forenoon to be steering towards the San Bernardino and Surigao Straits respectively, no glimpse was gained of Ozawa and the carriers of the Northern Force. The reports received did, however, cause Halsey to concentrate the three groups under Admirals Sherman, Bogan and Davison, and recall Admiral McCain's group, which was now 500 miles to the east. But before these orders had taken effect Japanese aircraft from the Philippines sighted Admiral Sherman's group, and a succession of heavy attacks followed. Most of the American fighters were far away making a sweep over the Philippine air bases, or escorting the reconnaissance planes at the time; and the few remaining were therefore hard pressed to defend their ships. No damage was, however, suffered until at 9.40 a.m. the light fleet carrier *Princeton* was struck by a single bomb, which started serious fires. Persistent attempts to save the carrier resulted only in damage and casualties to other ships, and in the evening she had to be sunk.

While the struggle to save the damaged *Princeton* was in progress Ozawa's carriers arrived within range, and at 11.15 a.m. he launched the greater part of his striking force—poorly trained though the aircrews were. The weather was now deteriorating, and only about forty of the seventy aircraft sent out found Sherman's ships. Not one of their attacks succeeded, and they themselves suffered severely. Ozawa was now left with only some thirty aircraft in his whole force; but this was not necessarily fatal to his plan because, as we have already seen, his real purpose was to draw the American carriers away to the north, and so leave the field clear for the Centre and Southern Forces to attack the invasion fleet in Leyte Gulf.

Halsey was puzzled that the searches to the west had not sighted the Japanese carriers—the more so because the recent attacks strongly suggested that they were within some 250 miles of his position. At about 10.45 a.m. he therefore told Sherman to search to the north; but the group commander was so busy repelling air attacks at the time that he could not comply until 2 p.m. It was thus 4.40 p.m. before Ozawa's carriers were at last sighted, 190 miles away to

the N.N.E.; and by that time it was too late to organise an attack before dark.

Throughout the 24th Mitscher's three groups made attack after attack on Kurita's centre force in the Sibuyan Sea¹, concentrating chiefly on the battleships *Yamato* (now the flagship) and *Musashi*. Anti-aircraft fire was intense; but hardly any fighters came out from the nearby Philippine airfields, and co-operation between Kurita's squadron and Admiral Fukudome's shore-based air forces failed completely. Apart from difficulties caused by bad weather and the inexperience of the Japanese aircrews, the chief reason for this seems to have been that Fukudome considered that he could best help Kurita by attacking the American carriers. On returning to their ships the American aircrews reported widespread damage to their targets; but in fact their only successes were to sink the *Musashi*, after she had been struck by about a score of torpedoes and twice that number bombs, and to cripple the heavy cruiser *Myoko* so badly that she returned to Singapore. At about 3 p.m. however Kurita reversed course for two hours, in order to escape further attacks and to await news of the progress of Ozawa's diversionary plan. This withdrawal, and the exaggerated claims of the American aircrews, which Halsey apparently accepted at face value, convinced him that the Japanese Centre Force had been so severely mauled that 'it could no longer be considered a serious menace' to Admiral Kinkaid's Seventh Fleet. He regarded Ozawa as his chief antagonist, and therefore decided to take his whole fleet north to attack him next day. By midnight on the 24th-25th he and all his battleships and cruisers, as well as the entire carrier strength of the Third Fleet, were thus acting in precisely the manner desired by the Japanese.

A decision to attack Ozawa with part of the Fast Carrier Force (say two of the four groups) can, in the light of what Halsey knew or believed at the time, easily be understood. But the wisdom of diverting all four groups to such a purpose seems much more open to question; while the removal as well of all the battleships and cruisers, thus leaving only Kinkaid's much weaker fleet to oppose the two powerful enemy surface forces known to be making towards Leyte Gulf, appears yet harder to justify. This latter decision was made still more unfortunate by the ambiguity of the wording of a message sent by Halsey to all his own forces, and intercepted by Kinkaid, at 3.12 p.m. on the 24th. This said that a new Task Force of battleships and cruisers '*will be formed*' by the Third Fleet to oppose Kurita off the eastern entrance to the San Bernardino Strait. Halsey actually only meant the message to indicate a future intention; but Kinkaid and other authorities assumed it to mean that the new force *actually had*

¹ See Map 38.

been formed and detached for that purpose; for such action by Halsey would certainly have accorded with Admiral Nimitz's broad instructions that he was to engage the enemy fleet if and when an opportunity occurred. It thus came to pass that not only were no ships at all left to guard the exit from the San Bernardino Strait, and to oppose Kurita, but Kinkaid *believed* that the Third Fleet's battleships and cruisers were there to fulfil such a purpose.¹ Not until the early hours of the 25th, by which time Kurita's threat had become plain, did Kinkaid seek confirmation that the strait was in fact so guarded. So far, in spite of the losses suffered at the hands of American submarines and carrier aircraft during the approach, the Japanese plan had worked very much as intended in the north; but in the south it was a different story, and it is to the fight between the Seventh Fleet and Nishimura's force that we must now turn.

Soon after noon on the 24th Admiral Kinkaid ordered all his ships to prepare for a night engagement with the Japanese Southern Force. The principal strength of the Seventh Fleet lay in Rear-Admiral J. B. Oldendorf's bombardment and support group and Rear-Admiral S. Berkey's close covering group, which together comprised six old battleships, five heavy and three light cruisers, and twenty-eight destroyers. The battleships were ordered to patrol across the exit from the Surigao Strait, with two forces of cruisers and destroyers stationed to the south of them, while a total of thirty-nine motor torpedo-boats (PTs) were disposed at various points along the length of the Strait.² Their primary duty was to report the enemy's progress, but they would also attack whenever opportunities offered. One anxiety that beset Kinkaid was that his battleships, which were primarily bombardment units, were provided with more high explosive than armour-piercing shell; and they had already expended over half of their outfits of the former in softening up the beach defences. His destroyers were also low in 5-inch ammunition, and no shell or torpedo replacements were available locally. In fact, however, the shortages do not appear to have been as severe as was believed at the time, and in no case did they affect the issue.

Nishimura's ships had made steady progress towards the Surigao Strait since they had first been reported on the forenoon of the 24th.³ That evening he learnt that, because of the American carrier aircraft attacks, Kurita would be some six hours late in reaching the rendezvous in Leyte Gulf, which had been planned for 4.30 a.m. on the 25th; but he none the less decided to press ahead on his own. At 10.36 p.m.

¹ For a full discussion of Admiral Halsey's decision, and how it was regarded at the time by senior officers in the Third Fleet, including Admiral Mitscher, the reader must be referred to the account in Morison, Vol. XII, Chapter X.

² See Map 38.

³ See p. 215.

the most southerly of the PT-boat patrols picked him up in the Mindanao Sea; and that contact heralded the start of the Battle of the Surigao Strait. Admiral Shima's rear squadron was about thirty miles astern of Nishimura at the time. As the two sections of the Japanese southern force progressed up the strait several other American PT-boats located and attacked them; but although they fired a total of thirty-four torpedoes only one of them found its mark, and that was on the light cruiser *Abukuma* of Shima's squadron. This first phase of the battle ended soon after 2 a.m. on the 25th, with the enemy's southern force accurately located and considerably harassed—but still virtually intact. The next few hours were, however, to tell a very different story.

Acting on the PT-boats' sighting reports Admiral Oldendorf sent his destroyers down the strait to attack. The first wave consisted of an American destroyer squadron of five ships, three of which kept to the eastern and two to the western side of the enemy formation. Just after 3 a.m. the former launched their torpedoes, at least one of which hit the battleship *Fuso*. About ten minutes later the western group also fired, and we now know that one torpedo hit the battleship *Yamashiro*, though it did her no very grave harm. The destroyers in Nishimura's van, however, suffered heavily; for one of the four (the *Yamagumo*) blew up immediately, and two others were so badly damaged that they fell out of formation and sank later. About an hour later another destroyer squadron, whose six ships formed the second wave, came in to attack—also in two divisions. It is difficult to allocate the hits now suffered by the Japanese to particular groups, let alone to individual ships of the Allied striking forces; but it seems certain that the first section, which was led by the Australian Navy's *Arunta*, scored another hit on the *Yamashiro* at 3.25, and that the second section sank the *Michishio*, one of the destroyers damaged by the first wave. At about 3.49 a heavy explosion took place in the battleship *Fuso*, which broke in two and drifted in a southerly direction. Recent American research attributes her destruction to the torpedoes fired by the first wave of destroyers.¹ Before the second wave's attacks were completed Admiral Oldendorf released six more destroyers from screening duties, and they followed down the strait in two divisions soon after 4 a.m. It seems certain that their torpedoes scored two more hits on Nishimura's flagship at about 4.11 a.m.; but

¹ For many years we believed that it was the *Yamashiro* which was hit in this attack, and blew up at about 3.49 a.m.; and that the *Fuso* survived until the gun action with Oldendorf's battleships (see below) to be sunk at about 4.19 a.m. (See, for example, Van Woodward, *The Battle of Leyte Gulf*, Macmillan, U.S.A., 1947.) Very careful research, and plotting carried out in the United States has, however, convinced Professor Morison and his staff that the two Japanese battleships were sunk in the sequence here stated. By the same token it now seems probable that it was the torpedoes fired by the first destroyer squadron, rather than the second, which did the greater part of the damage to Nishimura's ships.

122°

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LUZON

11-30 am 24th

6 pm 24th

3 pm

9 pm 24th

MIDT. 24/25th

9-30 25

Under heavy fast air carrier attack force

MUSASHI

SIBUYAN SEA

MASBATE

San Berna

KURITA'S FORCE
5 Battleships
9 Cruisers
13 Destroyers

8-10 am 24th.

NOSHIRO 26th

VISAYAN SEA

PANAY

NEGROS

CEBU

BOHOL

10-30 pm 24th

NISHIMURA'S FORCE
YAMASHIRO
FUSO
MOGAMI
4 Destroyers

ABUKUMA 26th

SHIMA'S FORCE
NACHI
ASHIGARU
ABUKUMA
4 Destroyers

MINDANAO SEA

122°

124°



still she steamed on. It was only in these last attacks than any Allied destroyer suffered appreciably; and it is likely that most of the damage sustained by that ship, the U.S.S. *Albert W. Grant*, was caused by her own side's gunfire. To the Japanese squadron the aggregate effect of the destroyer attacks was devastating. Its formation was completely broken up, and only the flagship *Yamashiro*, the cruiser *Mogami* (both of them considerably damaged) and one destroyer remained to face the tremendous gunpower of the heavy ships which Admiral Oldendorf had deployed right across the Japanese line of advance.¹

The final phase of the Battle of Surigao Strait, the gun action, actually began before the last of the destroyer attacks was over. We need not here follow this one-sided duel in detail, but from 3.50 to 4.09 a.m. on the 25th the American battleships and cruisers poured a devastating fire into the remnants of Nishimura's force. The *Yamashiro* and *Mogami* took tremendous punishment, and by 4 a.m. the flagship was burning from stem to stern. Both ships turned south in the endeavour to escape from the maelstrom into which they had so rashly steamed; but at 4.19 the *Yamashiro* capsized, taking down with her the Admiral and almost all her crew. The *Mogami*, which had survived the Battle of Midway almost miraculously², once again seemed to bear a charmed life. Though heavily on fire she broke clean away—only to collide with the heavy cruiser *Nachi* of Admiral Shima's force at 4.30; but she finally struggled safely out of the Surigao Strait. Only one destroyer of Nishimura's force (the *Shigure*) escaped comparatively undamaged.

Admiral Shima, with the rear of the Southern Force, who had followed Nishimura at about thirty miles distance, then withdrew by the way that he had come, harried by PT-boats and pursued, though at a somewhat leisurely speed, by Oldendorf's cruisers and destroyers. These latter sank the destroyer *Asagumo*, whose bow had been blown off in the first of the night destroyer attacks³; but Shima's ships and the remnants of Nishimura's force would have made good their escape but for American air attacks, which started soon after daylight on the 25th. As it was, bombers flown from Rear-Admiral T. L. Sprague's escort carriers brought the gallantly fought *Mogami* to a stop in the Mindanao sea early in the forenoon, and she was finally sent to the bottom by her own side's torpedoes; while the light cruiser *Abukuma*, which had been hit by a PT-boat's torpedoes early that morning, was finally sunk by U.S. Army Air Force bombers on the 26th.

So ended a long series of night actions, which in two respects

¹ See Map 38.

² See Vol. II, pp. 40-41.

³ See p. 218.

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reproduced classical naval tactics. The first was the night destroyer attacks, which broke up the Japanese formation and prepared it for its doom; and the second was the gun action fought by the American heavy ships in 'line of battle'. Although it seems possible that, even in the new era ushered in by air power, fast-moving torpedo craft may again attack larger units, it seems very unlikely that the battle-ship action will ever be repeated. Indeed throughout the whole course of the war of 1939-1945 only one other battle—that fought by Admiral Cunningham off Cape Matapan on 28th March 1941¹—bears a resemblance to that which took place in the Surigao Strait three and a half years later; and it seems certain that those two actions will mark the end of the long influence of the 'line of battle' on naval warfare, which dates from the seventeenth century.

The contrast between the undisputed passage of Kurita's powerful centre force through the San Bernardino Strait and Nishimura's virtual annihilation in the Surigao Strait could not have been more marked; for in the early hours of the 25th the former, still with four battleships, eight cruisers and eleven destroyers, emerged into the Philippine Sea, and turned south-east down the coast of Samar Island to make for Leyte Gulf.² It had been, in the words of the American historian, 'a chain of wrong assumptions' on the part of Kurita's adversaries which thus endangered the American invasion fleet³. Cruising in those waters at the time was the most northerly of three groups of ships, each consisting of four to six American escort carriers and about half a dozen destroyers, all under Rear-Admiral T. L. Sprague, U.S.N. The other two groups were about thirty miles to the south-east and 130 miles to the south of the northern group, whose senior officer was Rear-Admiral C. A. F. Sprague, U.S.N. All three groups, which formed part of the Seventh Fleet, had been providing air cover for the landings, and flying anti-submarine patrols in the approaches to Leyte Gulf. Early that morning Admiral Kincaid seems to have had his first doubts whether his reading of Halsey's message about the formation of the new task force of battleships and cruisers was correct⁴; for at 4.12 a.m. he signalled to ask his colleague whether the San Bernardino Strait was in fact guarded. The message was not, however, received until more than two and a half hours later; and before Halsey's answer had revealed the true state of affairs the escort carriers were engaged in a desperate action against a vastly superior enemy. Nor was this the only example of

¹ See Vol. I, pp. 427-431.

² See Map 38.

³ Morison, Vol. XII, p. 289.

⁴ See pp. 216-217.

American communications working so slowly that it is difficult to avoid the conclusion that the crisis which had so suddenly arisen may in part be attributed to such a cause. For example reconnaissance aircraft from the Third Fleet had reported Kurita's progress several times during the early part of the night of 24th-25th; and the Japanese Admiral's position at 8.30 p.m. on the 24th was definitely received by Halsey and passed by him to Kinkaid. But the air report which placed Kurita still further to the east at 9.45 p.m., which was received by Halsey at 11.20, never reached Kinkaid at all. At any period when large-scale combined operations are in progress communications are bound to be severely congested; but observing that the American Navy, like its principal Ally, always gave over-riding priority to the transmission of enemy sighting reports, delays such as have been mentioned do appear difficult to explain. The probability is that the basic cause of the delays was the separate command organisations of the Third and Seventh Fleets, and their use of different communication networks; and it seems undeniable that, but for signalling delays, Kinkaid would have been better informed of his own side's dispositions and intentions, and of the enemy's progress; and that would probably have prevented Admiral Sprague's escort carriers being taken wholly by surprise and caught quite unsupported. Had the escort carriers received even short warning of Kurita's approach they could probably have got in some heavy blows; for between them they had 450 aircraft embarked. In the event, however, it was 6.45 a.m. on the 25th, only twenty minutes after the first daylight patrols had flown off, that air reports and anti-aircraft gunfire warned Admiral C. A. F. Sprague that enemy ships were near.¹ He himself sighted their masts shortly afterwards.

Sprague at once turned east, ordered his group to fly off all available aircraft to attack the enemy, and his destroyers to lay smoke astern of him. Kurita, who had probably mistaken the escort carriers for larger ships in the prevailing low visibility, also turned east; and at 6.55 the *Yamato*, soon followed by the other three battleships, opened fire at about seventeen miles range. Admiral Sprague's first enemy report did not reach Kinkaid until about 7.25 a.m.; and as he had not yet received an answer from Halsey to his enquiry about whether the battleships and cruisers of the Third Fleet were guarding the San Bernardino Strait, this was the first intimation of Kurita's arrival off Samar to reach the commander of the Seventh Fleet. At 8.50 Kinkaid ordered Oldendorf, whose ships were now even shorter of ammunition, to proceed to the north side of the entrance to the Surigao Strait. An hour later the fleet commander followed this up with another message telling Oldendorf to take about half of his

¹ See Map 38.

force north to support Sprague; but it was plain that the detachment was unlikely to arrive in time to rescue the escort carriers from what was plainly a desperate situation. Kinkaid also sent repeated messages to Halsey, several of them in plain language, urging that his ships should come south and attack Kurita. Admiral Nimitz, at Pearl Harbour, also seems to have been uneasy; for at 10.00 a.m. just when Kinkaid's calls for help were reaching Halsey, he asked him to report the whereabouts of Task Force 34 (the battleships).¹ But the Third Fleet, now some 350 miles to the north-east of Samar, could not at once intervene in the battle in the south.²

In the first phase of the action against C. A. F. Sprague's weak force the Japanese battleships did not do well. They neither gained on the retiring carriers appreciably, nor scored a single hit on their very vulnerable adversaries. Even allowing for Kurita's belief that he was engaging vastly more powerful ships than escort carriers, the need for immediate pursuit and for pressing his advantage to the utmost should have been plain to him. Instead he manoeuvred as though to encircle his enemy, who was thus allowed to alter to a southerly course at 7.20 and so open the range whilst steering towards Oldendorf's battleships. Ten minutes later Sprague launched his screening destroyers in a counter-attack. They pressed in most gallantly to make individual attacks—for there was no time to co-ordinate their tactics. Three of the seven destroyers were sunk, with heavy loss of life; but the cruiser *Kumano* was hit by one torpedo, which damaged her so severely that she withdrew.

Not until after 9 a.m. did the Japanese score any significant success against C. A. F. Sprague's ships. Then the escort carrier *Gambier Bay* was stopped and sunk. Meanwhile the hard pressed group's aircraft, though armed only with light bombs—or none at all, made repeated attacks on or dummy passes at the enemy ships, to try and force them off course; while other aircraft, from the centre group of escort carriers, arrived at a critical moment and so damaged the heavy cruisers *Chikuma*, *Chokai* and *Suzuya* with bombs and torpedoes that they had to be abandoned, and sank later.³ Soon after this heartening

¹ For security reasons the U.S. Navy's cypher messages had 'padding' added to the beginning and the end of the actual text; and the padding was separated from the text by double letters. The message in question was encyphered at Pearl Harbour to read '[Turkey trots to water GG] (Address) Where is (Repeat) where is Task Force Thirty-four [RR the world wonders].' The padding, printed here in square brackets, should have been removed before the message was delivered to Halsey, but by an error in his flagship the terminal words were left in. The choice of those words, possibly suggested by Tennyson's *Charge of the Light Brigade*, was not only unfortunate but contravened the rule that padding should have no possible connection with the text. The result of the double error was that Halsey read what he took to be 'a calculated insult' from the C.-in-C., Pacific. (See *Admiral Halsey's Story*, McGraw-Hill Book Co., 1947) p. 220, and *U.S. Naval Institute Proceedings*, October 1960, pp. 76-80).

² See Map 37.

³ These ships may also have received some damage in the attacks by the destroyers of Admiral C. A. F. Sprague's group.

success, to be precise at 9.25 a.m., there took place what must have seemed like a miracle to Sprague and his ships' companies; for the Japanese, having ineffectually fired torpedoes at long range, turned sixteen points and retired to the north.¹ By 9.40 all firing had ceased. Kurita had actually ordered his scattered force to re-form, preparatory to setting course to the south to carry out his badly delayed foray into Leyte Gulf. But in fact he never attempted to carry out that plan; for after nearly three hours of futile manœuvring, at 12.36 he signalled that he was abandoning it and proceeding north 'to search for enemy forces'.

Several factors seem to have contributed to this astonishing decision by the Japanese Admiral. It is reasonable to suppose that the early loss of two heavy cruisers (one of them his flagship) in the Palawan passage², soon followed by the sinking of the *Musashi*, had shaken his confidence in the outcome of the operation on which he was engaged. Nor can the loss or disablement of four more heavy cruisers after he had emerged from the San Bernardino Strait have done anything to restore it. But it was probably lack of accurate intelligence which contributed most to his decision. He knew that very powerful forces were concentrating against him, but had no idea of their composition, nor how close they were. He considered that, if he entered Leyte Gulf, he would be subjected to heavy attacks from carriers and shore air bases, and knew that he could expect little or no support from the air. He was aware of the disaster suffered by Nishimura and, lastly, he was anxious about the fuel situation in his ships; for if they carried out much more hard steaming they might not be left with enough to regain their bases far to the west. Of all these factors it was probably the lack of intelligence, combined with failure of his own resolution, which contributed most to the loss of the greatest opportunity to come the way of the Japanese Navy since Pearl Harbour; for a determined drive into Leyte Gulf might well have played havoc among the invasion shipping.

But Kurita's withdrawal did not mean that C. A. F. Sprague's gallant little force could at once relax; for at 10.50 a.m. large numbers of suicide aircraft from Luzon attacked them, the escort carrier *St Lo* was sunk and three others of her class were damaged. At about the same time other 'Kamikazes' attacked the southern group of escort carriers, and they too had three ships damaged. After their latest ordeal at the hands of the suicide bombers the survivors of Sprague's group withdrew to the south-east, and in due course reached Manus safely. Though they had lost two escort carriers and three destroyers, and suffered over 1,500 casualties, their resolute defence probably saved the invasion fleet.

¹ See Map 38.

² See p. 214

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Nor did Kurita, by his sudden withdrawal, avoid further losses; for Vice-Admiral McCain, whose group of the Fast Carrier Task Force had been recalled by Halsey on the 24th when it was on the way to Ulithi¹, had intercepted Kinkaid's first call for help while fuelling his ships 360 miles to the north-east of Samar. At 8.48 a.m. Halsey signalled that he should go to the help of C. A. F. Sprague's force; but it is doubtful if McCain ever received the message. A few minutes later, moreover, the Fleet Commander changed his mind, and substituted an attack on Ozawa's Northern Force. But these vacillations actually made no difference, because another call for help from Kinkaid had convinced McCain of the right action to take. He had already stopped fuelling and, anticipating orders from his Task Force Commander Mitscher (which actually reached him shortly afterwards), he set course for Samar at high speed. Because of the great distance at which the first air striking force was launched (300 miles), and of doubts regarding the serviceability of Tacloban airfield, torpedoes could not be carried; and that made it unlikely that the aircrews could do lethal damage to Kurita's battleships. In fact we now know that neither of the two heavy attacks made during the afternoon accomplished anything significant. At 9.30 that night Kurita re-entered the San Bernardino Strait, and gained a respite; but the air attacks were renewed next day, the 26th, and continued until he had passed out of range. The only other ship sunk was, however, the light cruiser *Noshiro*; and the rest of Kurita's battered force ultimately reached safety.

We must now retrace our steps to the night of 24th–25th of October, when Halsey turned north with the whole Third Fleet, and see what happened to that great concentration of strength while the Seventh Fleet's various forces were fighting Nishimura and Kurita. At 2.40 a.m. on the 25th Halsey did form the new Task Force of battleships and cruisers, to which he had referred in his ambiguously worded message of the previous afternoon²; but its purpose was to provide co-ordinated surface and air attacks on Ozawa's carriers—not to guard the San Bernardino Strait as Kinkaid had anticipated. At 7.10 a.m., when the first striking force from the three carrier groups was already airborne, contact was gained with the enemy's Northern Force. A second striking force quickly followed, and between them they sank the light carrier *Chitose* and a destroyer, and damaged all the other three carriers.³ It was while these attacks were in progress that the calls for help, already mentioned, came in from Kinkaid. At 11.15 a.m. therefore Halsey, whose flagship, the *New Jersey*, was by that time well ahead of the carriers and only about forty miles

¹ See p. 215.

² See p. 216.

³ See Map 37.

from the enemy whom he had pursued with such ardour, reluctantly turned south with his battleships and Admiral Bogan's carrier group¹; but it was now too late for him to influence the course of events off Samar, or to prevent Kurita withdrawing. These movements left only Admiral Sherman's and Admiral Davison's groups (which included seven carriers between them) to finish off Ozawa; and it thus came to pass that in the end Halsey's great force was divided in the very manner that the first intelligence of Japanese movements should perhaps have suggested.

Mitscher, now in effective command of the two northern groups of the Fast Carrier Striking Force—for up to this moment he had, in the American historian's words, been 'little better than a passenger' in his own Task Force²—lost no time in dealing with Ozawa. Early in the afternoon he struck so hard that the fleet carrier *Zuikaku* and the light carrier *Zuiho* were quickly sunk, and the two converted battleships *Ise* and *Hyuga* damaged. That afternoon his cruisers finished off the carrier *Chiyoda*, which had been crippled in the morning attacks, and sank a destroyer; while a patrolling American submarine intercepted the damaged light cruiser *Tama* that night and sent her to the bottom. But the *Ise* and *Hyuga* managed to struggle safely home again.

So ended the action later called the Battle of Cape Engaño. Ozawa had certainly carried out the diversionary plan with skill and resolution; and he accomplished a considerable measure of success. He could not, of course, have known that Kurita's timidity had meanwhile made vain the sacrifice of all his carriers; nor that, had Halsey not taken his entire fleet north to attack him, both the Centre and Southern Japanese forces would probably have met with utter disaster without having gained any compensating advantage.

The series of actions known collectively as the Battle of Leyte Gulf will always provide a fascinating study in strategy and tactics, and in the problems of command organisation; and ever since the 25th of October 1944 the actions of the various commanders, and especially Admiral Halsey, have been hotly debated. It is now generally admitted that on both sides the mistakes which were made were mainly caused by faulty intelligence—or by the lack of it; and that Halsey's precipitate pursuit of Ozawa with his entire force, what time Kurita's intentions were still obscure and the San Bernardino Strait was unguarded, was an error of some magnitude.³ There is no doubt that, as we have already suggested, the too ready acceptance of his own aircrews' estimate of the damage they had done to Kurita

¹ Admiral Halsey's account of the reasons for his actions on this day is to be found in *Admiral Halsey's Story*, Chapter 13 (McGraw-Hill Book Company, 1947).

² Morison, Vol. XII, p. 196.

³ See for example Morison, Vol. XII, pp. 190 and 280-296.

in the Sibuyan Sea on the 24th, and the serious delays in signalling which followed, contributed to Halsey acting on premises which were wholly false; but it is also possible that he, a naval airman, was too prone to regard the enemy carriers as being necessarily his primary adversaries. It may be that if MacArthur, who was already charged with the chief responsibility for the capture of Leyte, had been given temporary control of all the supporting warships, and if either Kinkaid or Halsey—but preferably the former, because he had been working under MacArthur for a long time—had been placed in sole operational command of the naval side, the troubles of the 25th of October would have been avoided. To expect two enormous fleets, many of whose units were widely separated, to achieve a close and satisfactory understanding by ‘co-ordination’ of their work was perhaps to ask too much; and the attempt to do so was bound to necessitate a great deal of signalling—which itself was likely to cause delays and confusion. Thus the basic causes of the crisis which arose so suddenly off Samar may have been the lack of a Supreme Commander, and the division of the responsibility for maritime operations between Kinkaid and Halsey; and if that be accepted the necessity for establishing a clear and unified chain of command to execute a large combined operation appears to be re-emphasised.

As to the actual fighting, there can be no doubt that the individual Allied ships—almost all of which were American—showed the greatest skill and gallantry. Whether gravely outnumbered, as were C. A. F. Sprague’s little carriers, or possessed of great superiority, as in the battleship action in Surigao Strait, the same qualities of dash and determination were always evident. The United States Navy will always have reason to be proud of the victory which, by the evening of the 25th of October, 1944, it knew it had won; for Leyte Gulf was, in the final issue, one of the most complete victories of all time. Never again could the Japanese oppose the Allied offensives with anything resembling a balanced fleet.¹

After the Battle of Leyte Gulf, and in spite of the decisive victory which had been gained, the Allied Commanders were by no means

¹ It will be convenient to summarise here the losses suffered by both sides between 23rd and 27th October 1944. Japanese losses were as follows:

Battleships, 3	<i>Musashi, Yamashiro, Fuso.</i>
Fleet Carriers, 1	<i>Zuikaku.</i>
Light Fleet Carriers, 3	<i>Chitose, Chiyoda, Zuigo.</i>
Heavy Cruisers, 6	<i>Atago, Maya, Chokai, Chikuma, Suzuya, Mogami.</i>
Light Cruisers, 4	<i>Tama, Noshiro, Abukuma, Kinu</i> (sunk by air attack in the Philippines).
Destroyers, 9	(including two sunk by air attack in the Philippines, which did not sail with any of the three Japanese forces).

On the American side one light fleet carrier (*Princeton*) two escort carriers (*Gambier Bay* and *St Lo*), three destroyers or destroyer escorts, one submarine and a PT-boat were lost.

free of troubles. On the naval side the chief one was the enemy's adoption of suicide air attacks; for although this was obviously a policy of desperation, we very soon found that they could cause a lot of damage, and were very difficult to counter. Not only could obsolete aircraft, manned by incompletely trained pilots, be used; but, as they would not return to base, the range at which attacks could be carried out was doubled.¹ Moreover a far higher percentage of hits than with released bombs or torpedoes could be expected; and carriers with aircraft parked on deck were soon shown to be particularly vulnerable. New counter-measures thus had to be devised as quickly as possible, and chief among them was the stationing of large numbers of radar-fitted 'picket destroyers' at considerable distances from the fleet, to give early warning of the suicide planes' approach. The issue of the new proximity anti-aircraft fuzes to all ships², and the fitting of large numbers of additional light weapons were also hastened; while the carriers were ordered to embark more fighters at the expense of their strike formations. But the Kamikaze undoubtedly increased greatly the strain on warship crews; for vigilance could never be relaxed, and guns had to be manned continuously when within their range.

On the 27th of October General MacArthur announced that the Army Air Force would take over responsibility for the defence of the Leyte invasion forces; but so few airfields were, as yet, available on shore that it soon became apparent that the Third Fleet would have to continue to cover and support the offshore shipping. Moreover the scale of Japanese attacks was rising as more aircraft arrived in the Philippines; and bombing their bases did not succeed in putting them out of action for long. Heavy rain and constant enemy air activity made progress slow on shore, and for a time the situation on Leyte was by no means wholly reassuring. Throughout almost the whole of November at least one group of the Fast Carrier Task Force, now under Admiral McCain's command, was at sea to the east of the Philippines to support MacArthur's forces; and on several occasions the carrier aircraft made full scale strikes against the enemy airfields around Manila Bay, and against any reinforcement convoys or warships sighted. During November they sank three cruisers (*Nachi*, *Kumano* and *Kiso*), a seaplane tender, eight destroyers and numerous auxiliaries and smaller warships. But the Third and Seventh Fleets themselves suffered considerably from suicide attacks. No less than seven carriers were hit, one of them (the *Intrepid*) on five occasions; and although only a few small vessels were lost, the list of damaged ships was a long one.

¹ A good description of the 'Kamikaze' tactics and organisation may be found in Okumiya and Horikoshi, *Zero* (Cassell, 1957).

² See Vol. II, p. 419, regarding this development.

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Meanwhile the far-ranging American submarines had scored some outstanding successes. On the 21st of November the *Sealion* sank the battleship *Kongo* and a destroyer off north-western Formosa; and exactly a week later the *Archerfish* hit the new giant aircraft carrier *Shinano*, originally designed as a *Yamato*-class battleship, with six torpedoes which sent her to the bottom close off the Japanese coast. She was carrying out her final trials at the time, and had on board a large cargo of glider bombs intended for use against Allied warships working off the Philippines. The Japanese submarines, on the other hand, accomplished little, and lost seven of their number in November. Nor did their new midget submarines (called 'Kaiten'), which were carried to the scene of their intended attacks by the large I-class boats, do more than sink one oiler when they penetrated into Ulithi on the 20th of November.

By the end of November the eastern half of Leyte had been cleared of enemy troops, but they were still holding on stubbornly to the western half. To outflank these defenders General MacArthur decided to make a new landing in Ormoc Bay¹; and on the 7th of December he successfully accomplished that purpose, in spite of heavy air attacks on the vessels carrying the landing forces. Reinforcements quickly followed, and by the end of the year the whole of Leyte, except for a few isolated pockets, was in American hands. This gave the Allies a firm base right in the heart of the Philippine group; but MacArthur considered it necessary to seize Mindoro before carrying out his next big assault, which was to be on Luzon, the principal island of the group²; since aircraft working from Mindoro would be able to give direct support to the landings. By the middle of December the Fast Carrier Task Force was back on station after a short period of rest, with its aircraft complements adjusted to include more fighters. Its primary task now was to attack the chain of airfields on Luzon while MacArthur was assaulting Mindoro.

The landings on Mindoro, which took place on the 15th of December, encountered little resistance, though Kamikazes caused some losses to the assault convoys. Then on the 18th, a violent typhoon struck the Third Fleet. Three destroyers were overwhelmed by the mountainous seas; many other ships, including four light carriers, were damaged; nearly 150 aircraft were lost, and the fleet was forced to return to Ulithi and other bases for repairs. The storm thus succeeded where the Japanese themselves had failed so signally, namely in driving Halsey's ships away from the waters east of the Philippines. It thus happened that when, on the 26th of December, an enemy squadron of three cruisers and five destroyers was reported approach-

¹ See Map 38.

² See Map 37.

ing the scene of the Mindoro landings, there were no carrier aircraft present to stop them. U.S. Army Air Force bombers attacked that night in bad weather; but they only damaged one destroyer, which was subsequently sunk by a PT-boat, and themselves suffered heavy losses. In the small hours of the next morning the Japanese ships got within gun range of the assault shipping. Although they sank no more than one merchantman and damaged a few others, it was an unpleasant reminder of the vulnerability of an invasion fleet to attack from the sea, and of the need for adequate cover by maritime forces. Moreover a force of cruisers and destroyers which left Leyte at high speed failed to catch the enemy squadron, which thus withdrew in safety after completing its bombardment.

With Mindoro in his hands MacArthur was ready to tackle Luzon, and by the end of the year the assault forces had assembled for the purpose. The date was fixed for the 9th of January 1945, and the scene of the landings was to be Lingayen Gulf, to the north of Manila.¹

We may conclude this chapter with a brief survey of the progressive tightening of the blockade of Japan by submarines, by air attacks on shipping, and by minelaying in the enemy's ports and rivers. Up to the end of 1944 by far the greatest share in the blockade was borne by the American submarines. It had been their widespread attacks which had forced the Japanese belatedly to introduce convoy in the autumn of 1943²; and throughout the following year they continued to inflict heavy losses on almost every route used by the enemy. By the middle of 1944 the Japanese were seriously alarmed over the steady attrition from which their merchant navy was suffering. Their new frigates entered service in some numbers during the year, and by July their General Escort Command possessed over 100 long-range anti-submarine vessels. Convoys were by that time sailing on most routes; but the loss of four of the five small carriers allocated to shipping protection offset much of the benefit gained from the improved and strengthened escorts.³ The Japanese had also attempted to provide air escorts to work from the many shore bases available to them, especially on the flanks of the very important China Sea shipping routes; but the aircraft provided were of inferior types, their crews were indifferently trained, and the new measures thus failed to make any appreciable impact. There is no doubt that neglect of the immense potentialities of shore-based air escorts was among the greater errors committed by the Japanese. Nor was their General Escort Command allowed to enjoy its independent status for long; for in

¹ See Map 37.

² See Part I of this volume, pp. 231-232.

³ All four were sunk by American submarines—the *Chuyo*, before she had actually joined the Escort Command, on 4th December 1943; the *Taiyo* (or *Otaka*) on 16th August 1944; the *Ungo* on 16th September 1944 and the *Shinyo* (or *Jinyo*) on 17th November 1944.

August 1944 it was placed under the Commander-in-Chief, Combined Fleet, who was thenceforth able to divert its ships from mercantile convoy work to fleet duties.

The main burden of the Allied submarine offensive was borne by the American Central Pacific flotillas, which received nearly all the splendid new types now entering service. Once the Solomon Islands campaign had ended, and the need to watch the main Japanese fleet bases in the Marshalls had lapsed, patrols off the ports of the Japanese homeland could be increased. Then, as the American amphibious forces swept victoriously through the Central Pacific, the submarines were able to move their advanced bases forward. In May 1944 they began to work from Majuro in the Marshalls, and in July from Saipan; and the time they could spend on patrol was thus greatly increased. The submarines attached to Admiral Kinkaid's Seventh Fleet in the south-west Pacific continued to work from Brisbane and Fremantle in Australia until nearly the end of the war; and in September 1944 the British 8th Submarine Flotilla moved from Ceylon to Fremantle to join Kinkaid's forces. Our submarines were, however, greatly inferior in performance to those now joining the American fleet. Their endurance was far shorter, a matter of great importance when they were working thousands of miles from their bases; and the lack of amenities, such as air-conditioning, to mitigate the severe trials involved in submarine work in the tropics, greatly increased the strain on their crews. The Americans, on the other hand, had now overcome early troubles, such as the inefficient torpedoes with which they had started the war¹, and had vastly improved the equipment of their boats. Among their more important technical innovations were search radar sets, night periscopes with built-in radar, and 'very high-frequency' radio-telephony, which greatly improved communications between submarines working together in 'packs'. In fact, until the arrival of VHF-R/T, American 'pack' attacks had not been very successful. Nor did our Ally ever employ such tactics to anything approaching the extent of the German U-boat arm; and right to the end many experienced U.S. submarine captains considered that skilful individual operations produced better results. One important consequence of the technical developments mentioned was a great increase in the efficiency of night operations, and in 1944 no less than half the attacks made by American submarines took place in darkness. It should not, however, be thought that these well designed and excellently handled vessels had everything their own way. Japanese anti-submarine tactics had now improved, and the loss of eight American submarines in October–November 1944—though not all of them were sunk by enemy forces—shows that the

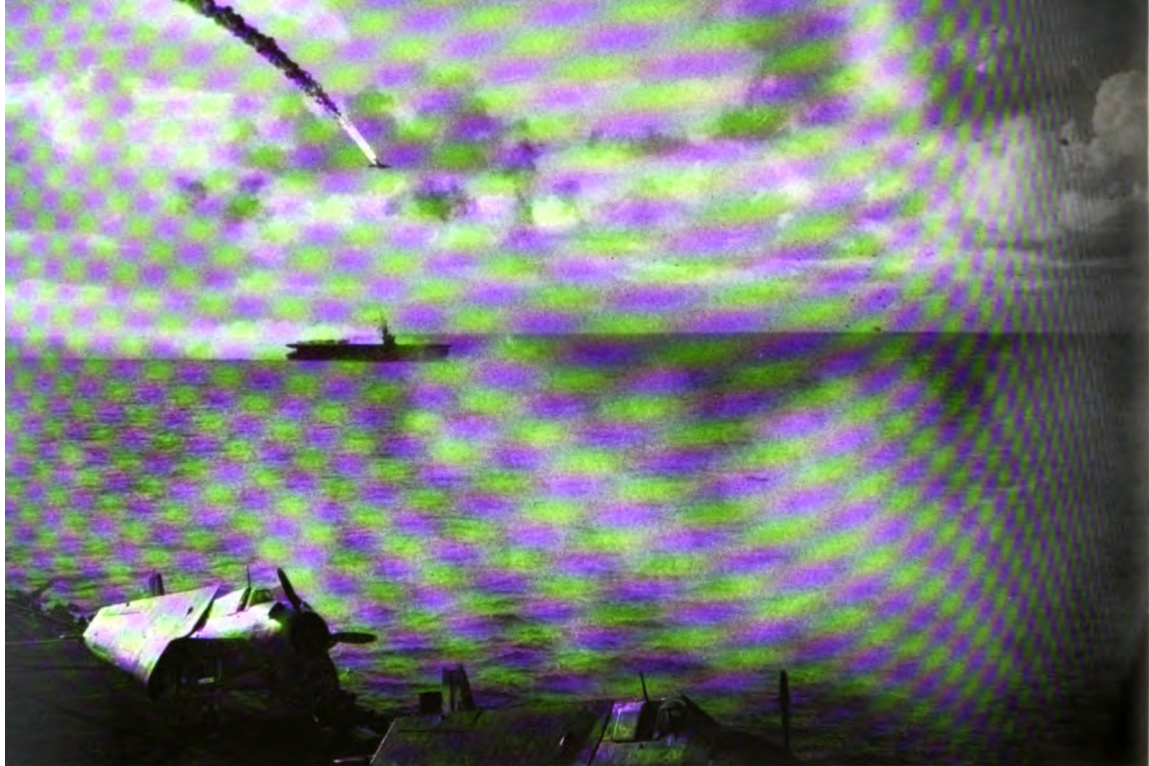
¹ See Vol. II, p. 236.



The assault on Saipan, 15th June, 1944
U.S. Marines landing in the first wave.

(Photographs U.S. Navy Department)





Operations in the Pacific, June–September, 1944

A Japanese aircraft shot down during the fighting west of the Marianas, June, 1944. U.S.S. *Kitkun Bay* in foreground.

The assault Pelelieu, 15th September, 1944. Landing craft moving inshore. Bombardment ships in background.

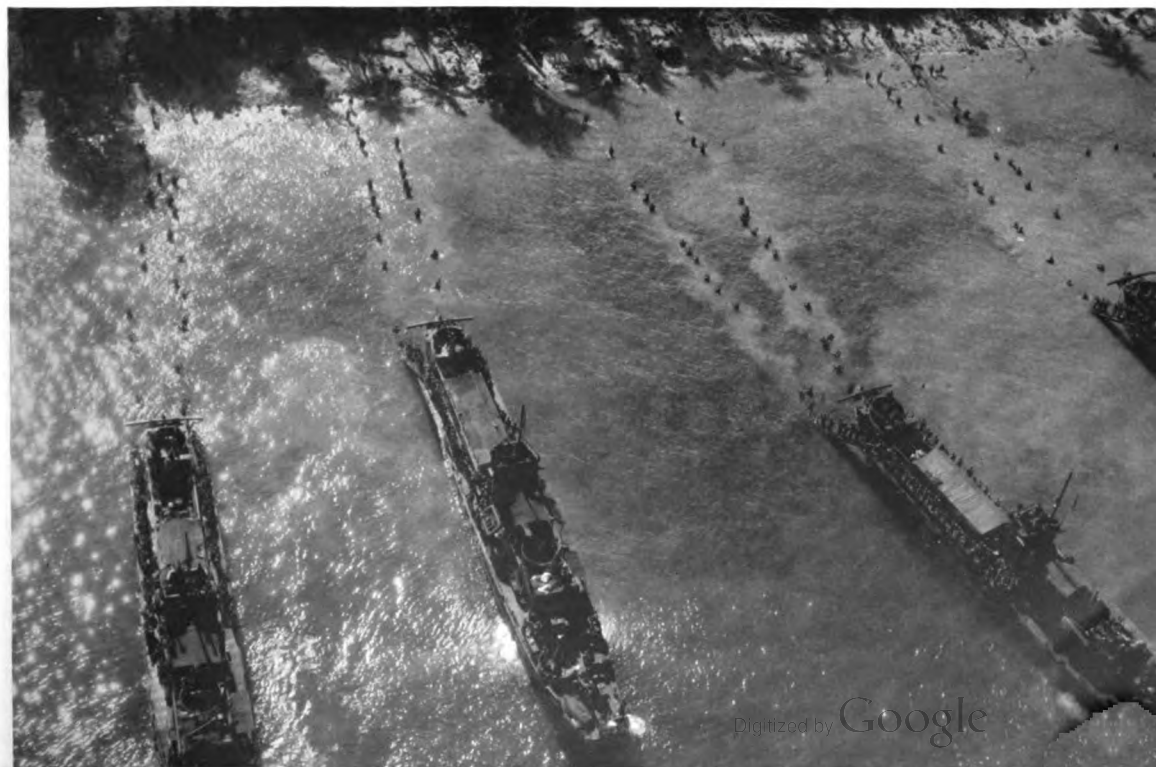




Combined Operations in the Pacific, July–September, 1944

The assault on Tinian, 24th July, 1944. DUKWs landing supplies.
Troops wading ashore on Morotai during the assault, 15th September, 1944.

(Photographs U.S. Navy Department)





The Liberation of the Philippines
October, 1944–March, 1945.

L.S.Ts landing equipment at Tacloban during the assault on the Philippines, October, 1944.

The assault on Cebu, Philippine Islands, 26th March, 1945.
Landing craft move inshore under cover of Seventh Fleet's bombardment.

(Photographs U.S. Navy Department)



new types of enemy escort vessel could by no means be treated with contempt.

The British submarines of the Eastern Fleet and also the British and American boats in the South-West Pacific, which worked from Fremantle and Brisbane until able to move to more northerly bases, devoted considerable attention to the waters around Singapore, Java, Indo-China and the Philippines, to which the Japanese main naval forces had withdrawn after their expulsion from the Marshall Islands in February 1944.¹ They were thus able to contribute less to the blockade of the Japanese homeland than the Central Pacific submarines. Moreover throughout the latter part of 1944 it became increasingly difficult for the South-West Pacific flotillas, as well as those of the Eastern Fleet, to find worth-while targets; since before the end of that year the Japanese had abandoned the running of convoys from Singapore to Sumatran ports and to Rangoon, and were concentrating their shipping increasingly on the short routes in the north at the expense of the long passages from their southerly territories.

By the end of 1944 the Japanese were suffering heavy losses and very serious delays to shipping on the main convoy route between Singapore and their homeland, on which sailed the tankers loaded with oil from Borneo and the Dutch East Indies. There were by this time nearly a score of American submarines constantly on patrol in the China Sea, and it was mainly their attacks which forced Japanese convoys to hug the continental coast and try to slip undetected from one port to the next. There is indeed no doubt at all that the submarines' steady pressure was the biggest factor in firstly delaying, and finally almost completely stopping the flow of imports so urgently needed by Japan's war industries, and also the outward movement of supplies to her armies in Burma, Malaya and more distant possessions.

Second to the contribution of the submarines to the blockade of Japan came air minelaying which, by the middle of 1944, was becoming increasingly important. We have already seen how in January of that year Bangkok was first mined by the Tenth U.S. Air Force, whose bases were in India²; and how during the next six months the minelaying aircraft visited other ports in the South China Sea, as well as all the major ports in the Bay of Bengal. In both theatres the Japanese minesweeping service quickly proved inadequate, and the ports in which the supplies for their army in Burma had to be discharged were frequently closed for long periods.

The China-based Fourteenth U.S. Army Air Force had mined the

¹ See Part I of this volume, pp. 333-335.

² See Part I, p. 352.

Yangtse River for the first time in February 1944, with very good results; and the operation was repeated several times before the Japanese over-ran its bases in China in the autumn of that year. It was in fact in the Yangtse River that the minelaying aircraft sank or damaged the greatest tonnage in relation to the number of mines laid during the whole Pacific war; and Japanese imports of iron ore were thereby drastically curtailed.

In the summer of 1944 the long-range bombers of the American XX Bomber Command¹ joined with No. 231 Group of the Royal Air Force and the East Indies Fleet's submarines in the prosecution of the minelaying campaign. Though the monsoon interfered considerably with long-range flights, mines were again laid in the ports on the Tenasserim coast of Burma and in the Andaman Islands; while the submarines *Porpoise* and *Trenchant* visited Sumatran ports and laid mines which sank several ships at this time.

In October 1944 No. 231 Group's Liberators flew 1,500 miles from Chittagong to mine the harbour of Penang for the first time.² Thereafter our submarines and aircraft laid many mines in the Malacca Straits and off adjacent ports. The three Catalina squadrons of the R.A.A.F. working from bases in the south-west Pacific also made long minelaying flights at this time; and it was chiefly they who, after the loss of the airfields in China, infested the harbours and estuaries of the South China coast.

Though we shall sum up the results of the whole air minelaying campaign in these theatres in a later chapter, we may here note that by the end of 1944 it was making a considerable contribution to the blockade. It was helping to prevent the Japanese exploiting the wealth of their remoter conquests, it was causing acute congestion in many ports, and it was delaying a great many ships. It had indeed become plain that air minelaying would prove as powerful a weapon against Japan as it had long been against Germany.

The third and last contribution to the blockade of Japan was made by direct bombing and torpedo attacks on her shipping. This was little utilised until late in 1943, when the American carriers attacked Japan's Central Pacific bases as prelude to the launching of the amphibious assaults already described. In February 1944, for example, twenty-four large merchantmen, as well as fifteen warships, were sunk in the carrier raids on Truk³; and thereafter this form of attack gained in importance until, after the capture of the Philippines, it contributed a great deal to the severance of Japan's com-

¹ This command, equipped with the B.29 (Super-fortress) bombers, was controlled directly from Washington. It did not form part of the Far East Strategic Air Force.

² It was this sortie that forced the German U-boats to move their base to Batavia (see p. 205).

³ See Part I, p. 335.

munications with the south, and finally to the total blockade of her homeland.

To sum up the state of the blockade at the end of 1944, the Japanese merchant navy had lost $3\frac{3}{4}$ million tons of shipping from all causes during the year; which brought its total losses since the beginning of the war to $6\frac{1}{2}$ million tons. Only about three million tons now remained to supply all the nation's needs—civil as well as military. The introduction of convoy, the great effort put into merchant ship building and repairing in 1943–1944, and the tardy efforts to restrict the excessive requisitioning of merchantmen by the fighting services, all came too late to halt the steady decline of the merchant navy. In 1944 alone the excess of losses over gains amounted to no less than two million tons, and the sunk ships included 824,000 tons of precious tankers. Faced with issues of such grave moment the Japanese tried to meet their import needs from what we may call the 'Inner Zone' of their Empire—the homeland, north China, Manchuria and Korea—rather than from the 'Outer Zone' where lay all their conquests of 1942; and by transferring ships from the long hauls from the equatorial countries to the short hauls from the northern territories they hoped to make considerably better use of the tonnage remaining to them. There is indeed no little irony (though the Japanese probably failed to notice it) in the fact that, at the time of Japan's greatest need, all the conquests won by her ruthless rapacity had become utterly useless to her. Imports had fallen from $48\frac{3}{4}$ million tons in 1941 to 17 million tons in 1944; and ships had to be diverted to bring food to a people who, though not yet starving, were certainly not adequately fed. All industrial production was suffering from shortages, and adequate fuel was not available either in the homeland or in the theatres of active operations. If the blockade was not yet a stranglehold, the rulers of Japan must have felt a very uncomfortable tightening around the jugular vein of their country's economy.

**CHRONOLOGICAL SUMMARY
OF PRINCIPAL EVENTS
JANUARY-SEPTEMBER 1945**

CHRONOLOGICAL SUMMARY OF PRINCIPAL EVENTS, JANUARY-SEPTEMBER 1945

1945	Atlantic and Home Waters	Arctic	Mediterranean	South-East Asia	Pacific	Europe
January	U-boat campaign in inshore waters round the British Isles continues First Type XXIII U-boat becomes operational	30/12-8/1 JW.63	Deadlock in northern Italy 11 Civil war in Greece ends	3 Akyab re-occupied 21 Ramree assaulted 22 Burma road to China opened 24 & 29 Carrier aircraft raids on Palembang Fourteenth Army crosses the Irrawaddy	9 Americans land on Luzon 9-20 U.S. Third Fleet's foray into the S. China Sea	Russians take Budapest Germans driven from the Ardennes salient
February	U-boat inshore campaign meets with little success	3-13 JW.64			4 Americans enter Manila 10 Main body of B.P.F. arrives in Sydney 16 First U.S. carrier raids on Japan 19 Americans assault Iwo Jima	4-11 Allied conference at Yalta
March	U-boat inshore campaign continues in spite of little success and many U-boat losses	11-21 JW.65		1 Meiktila captured 9 Mandalay captured	26 B.P.F. joins the U.S. Fleet in operations against the Ryukus	Germans retreat across the Rhine 7 Allies cross the Rhine at Remagen 24-26 Allies force the Rhine at several points 30 Russians capture Danzig
April	First Type XXI U-boat becomes operational	16-25 JW.66	9 Allies resume offensive in Italy 21 Bologna captured 29 German command signs instrument of unconditional surrender for forces in Italy	1 Fourteenth Army starts drive from Meiktila to Rangoon	1 Americans assault Okinawa	13 Russians take Vienna 24 British enter Bremen 25 Americans and Russians meet on the Elbe 30 Death of Hitler

May	<p>4 U-boats ordered to cease hostilities and return to base</p> <p>8 German High Command orders all U-boats at sea to surface and surrender</p> <p>9 U-boats begin to surrender</p>	<p>12-20 Last Arctic convoy JW.67</p>	<p>2 German surrender in Italy takes effect</p>	<p>3 Rangoon re-occupied</p>	<p>1 Australians land at Tarakan</p>	<p>2 Berlin surrenders</p> <p>7 Instrumental of unconditional surrender signed</p> <p>8 V-E day</p>
June					<p>10 Allied landings in Brunei Bay</p> <p>21 Fighting ends on Okinawa</p>	
July				<p>Destruction of Japanese forces on the Sittang</p>	<p>1 Allied landings at Balikpapan</p> <p>Heavy carrier raids on Japan</p>	<p>17 Start of the Potsdam Conference</p>
August				<p>15 V-J day</p> <p>S.E. Asia command enlarged</p>	<p>6 First atomic bomb dropped on Hiroshima</p> <p>8 Russia declares war on Japan</p> <p>9 Second atomic bomb dropped on Nagasaki</p> <p>14 Japanese Government surrenders</p> <p>15 V-J day</p>	
September				<p>12 Japanese sign terms of surrender for S.E. Asia in Singapore</p>	<p>2 Japanese sign surrender terms in Tokyo Bay</p>	

CHAPTER XXI

THE END OF THE
MEDITERRANEAN CAMPAIGNS

1st January—2nd May, 1945

‘Among the many lessons that naval history has for us, and perhaps the key lesson, is that if we have command of the sea things go well for us; if we have not, they go extremely ill.’

Admiral Sir Herbert Richmond. From an address to the Oxford University History Society, 9th June, 1942.

At the beginning of 1945 the waters of the Mediterranean over which the enemy was still able to exert a measure of control were confined to the Ligurian Sea between the Franco-Italian frontier and the port of Spezia, and the northern Adriatic.¹ Though there were still considerable German garrisons in Rhodes, Cos, Leros and a number of the smaller Aegean Islands, and also in western Crete², it was impossible any longer to keep them supplied, and they had lapsed into a state of almost complete ineffectiveness. Over the whole of the rest of the Mediterranean Allied maritime control was undisputed, more and more ships were sailing independently, and but for the continued danger from mines it would have been possible to cancel virtually all convoys. Indeed the sweeping of mines—our own as well as the enemy’s—now constituted one of the greatest commitments for all the naval commands and kept a very large force continuously employed. In addition to clearing the new fields which enemy vessels were still occasionally laying in the Ligurian Sea and Adriatic, existing channels had to be constantly extended and widened; and we were still a long way from declaring the under-water menace to have been finally eliminated.

The complete transformation of the strategic scene since the period of our greatest peril in the summer of 1941 is worth remarking. At that time the enemy had, mainly by the determined use of shore-based air power, confined our fleets to the eastern and western ends of the Mediterranean; and for the next eighteen months they were only able to enter the central basin, for purposes such as the Malta

¹ See Map 29.

² See Map 31.

convoys, at grave risk and at a heavy cost in ships and lives. It was the North African landings of November 1942, and the Eighth Army's victory at El Alamein which initiated the transformation; and the capture of Sicily in August of the following year secured our gains firmly against any likely revival of Axis fortunes. If it was the Allied Navies who carried the Armies overseas, and landed them at the selected spots, it was the land victories gained by the soldiers which secured such great benefits for the maritime services; and, of course, neither service's purposes could have prospered without the ascendancy in the air which the Royal Air Force and its American comrades had fought so long to win.

As to the enemy, since the submission of Italy in September 1943 he had lacked anything resembling a balanced fleet, and his attempt to dispute control of the Mediterranean with his U-boats had been totally defeated; but at the beginning of 1945 the German Navy had by no means given up the struggle. With a degree of determination and ingenuity, which may arouse even their adversaries' admiration, they improvised what they did not possess; and by a variety of measures, including the transport of small craft overland and by river and canal, they managed to maintain a reasonably efficient coastal convoy service in the Ligurian Sea and Adriatic almost to the end. In neither theatre did the Germans possess any warships larger than a destroyer; and compared to the forces which we were able to deploy their total strength was almost derisory.¹ Yet their E-boats and their heavily armed dual-purpose escort and ferry craft continued to defend their charges with devotion; and although we had managed greatly to reduce the tonnage of supplies safely delivered to the Italian ports behind the front line, we had not yet succeeded in stopping the traffic. In the Ligurian Sea the German convoys generally ran between Savona or Genoa and Spezia, while in the Adriatic they employed the few surviving comparatively large ships to carry supplies from Trieste to Venice, whence large numbers of barges transferred the cargoes to the ports at the mouth of the River

¹ The German records for the final phase of the war are too incomplete to enable their naval strength to be assessed with accuracy, but the following figures give reasonable estimates for 1st February, 1945:

(a) *Ligurian Sea*. One destroyer, two torpedo-boats, four small escort vessels similar to British corvettes, about thirty-five dual-purpose ferry barges (F-Lighters), two minelayers, five motor A/S boats and ten R-boats.

(b) *Adriatic*. One destroyer, four torpedo-boats, about forty large and small E-boats, one minelayer and a large number of small landing craft similar to British L.C.As.

(c) *Aegean and Crete*. About thirty small landing craft, and a number of tugs, caiques and launches.

Except for the *Premuda*, which was a former Yugo-Slav ship (see p. 242), all the destroyers and torpedo-boats mentioned in (a) and (b) were Italian vessels which had been taken over at the time of the armistice, and were now manned by German crews. In addition to the ships and craft mentioned in (a) and (b) a varying number of 'Small Battle Units' of different types was present. See Appendices V and W for definitions of German minor war vessels and 'Small Battle Units'.

Po. The German forces in Yugo-Slavia were supplied mainly by ferry barges, landing craft and other small vessels which crept down the coast from the Istrian ports of Fiume and Pola.

To supply the Allied armies on the southern sector of the main front in France we were now chiefly using Marseilles for dry cargoes, vehicles and personnel, and Port de Bouc for liquid fuels.¹ In January some 350,000 tons of cargo and 34,000 men were landed at the former port, and nearly one million barrels of fuel at the latter. In Italy Leghorn was now gradually displacing Naples, where the Flag Officer, Northern Area Mediterranean (Rear-Admiral J. A. V. Morse), had his headquarters, as the main port of discharge for the Fifth Army's supplies, and in January some 182,000 tons of stores and 76,000 tons of liquid fuels were discharged there. On the east coast Ancona was used to meet the Eighth Army's needs, with Taranto as the rearward base, and the discharge figures for the former port in January were about two-thirds of the totals for Leghorn.

In the western Mediterranean Admiral Sir John Cunningham's principal naval squadron consisted generally of three French cruisers and a number of British, French and American destroyers. It was known as 'Flank Force', and usually worked from Toulon under the command of Rear-Admiral R. Jaujard of the French Navy. His chief responsibility was to support the Allied armies on the Franco-Italian frontier, and his ships carried out many bombardments against the enemy's coastal bases, railway communications, and concentrations of troops and vehicles. In addition the coastal craft of the Inshore Squadron, which were now based on Leghorn, worked continuously against the enemy's supply traffic in the Gulf of Genoa. These light forces were led by Commander R. A. Allan, R.N.V.R.² until, in mid-April, the Inshore Squadron was finally disbanded; and Admiral Morse then paid a warm tribute to his able and determined leadership. His striking forces, consisting of British and American M.T.Bs, were generally supported by L.C.Gs and by destroyers from 'Flank Force', and often had the benefit of co-operation from Coastal Air Force Wellingtons as well. Throughout this last phase Allan's little ships constantly harassed the German traffic, but by no means all the successes claimed at the time are confirmed in the enemy's records. To give only one example to show how difficult it is for the attackers to assess the results of such encounters reliably, on the night of the 7th February M.T.Bs attacked a convoy of three coasters between Genoa and Savona, and claimed to have sunk two of the merchantmen. In fact all the torpedoes detonated on striking the shore, and the convoy suffered no damage at all. None the less it is

¹ See p. 102 and Map 29.

² See Part I of this volume, p. 316.

certain that the steady pressure of the coastal craft severely hampered the enemy's movements by sea.

In the early hours of the 18th of March our shore radar stations on Cape Corse and at Leghorn gave warning that enemy surface forces from Genoa were at sea to the north of Corsica. Actually the destroyer *Premuda* (formerly the Yugoslav *Dubrovník*), and the ex-Italian torpedo-boats TA.24 and TA.29 were out on a minelaying mission. The destroyers *Lookout* and *Meteor* were detailed to search for them, and at 3 a.m. they made contact. After a running fight they sank the two torpedo-boats; but the *Premuda* escaped. This was the last of the large number of destroyer actions which punctuated the whole Mediterranean war.

The waters where our bombarding squadrons and coastal craft had to work were heavily mined, and German warships from Genoa made several sorties early in the year to lay fresh fields. Thus the sweepers had to toil continuously to remove the hidden dangers and so enable our ships to move close inshore in safety. In this they received great help from mine-spotting aircraft which, in these clear waters, were often able to warn the sweepers of the presence of mines. We found the old naval 'Walrus' amphibian very suitable for this purpose, and United States Navy 'Blimps' were also occasionally used. As to other forms of air co-operation in the maritime war, with the final elimination of the Mediterranean U-boats¹ and the withdrawal of the German long-range bombers from southern France,² the Coastal and Tactical Air Forces were both able to devote an increasing effort to searching for and attacking the enemy's coastal shipping—especially in the Adriatic. In the first two months of the year Coastal aircraft sank three of the few large merchant ships remaining to the enemy in those waters. In addition to the blows struck from the air against the German convoys moving cautiously along the Italian and Yugoslav coasts, the Tactical and Strategic bombers (both British and American) constantly raided the ports on the Istrian peninsula, and by February they had inflicted so much damage that the Germans transferred all their surviving vessels to Venice. This led to the decision to bomb the docks of that port, whilst taking the greatest care to avoid damage to the town. We will return to the results achieved shortly.

The enemy-held ports on the west coast of Italy received some slight attention, mainly from Tactical Air Force bombers in January and February; but little damage was done, and at the end of March we decided not to attack them heavily, because we expected to capture them soon and would need them for our own use.

¹ See p. 101 and 107.

² See p. 106.

Meanwhile important developments had taken place in the field of Inter-Allied strategic planning. At the end of January staff talks were held in Malta as a preliminary to the Yalta Conference and were attended by the Commander-in-Chief, Mediterranean. Mr Churchill and the British Chiefs of Staff arrived there by air on the 30th, and on the 2nd of February the American cruiser *Quincy* brought in President Roosevelt. Several decisions affecting the Mediterranean campaigns were taken by the Combined Chiefs of Staff before they and the heads of the British and American governments flew on to Yalta. One was to transfer considerable military strength to north-west Europe; and in February and March all the Canadian troops in Italy, a British infantry division earmarked for the Middle East, and two groups of the United States Twelfth Air Force were moved.¹ The naval authorities organised for the purpose a shuttle service of L.S.Ts, L.C.Is, and store ships, which ran between Naples or Leghorn and Marseilles; and destroyers and coastal craft were withdrawn from other duties to escort the troop-carrying vessels.

In addition to the small warships which escorted the German coastal convoys in the Ligurian Sea and Adriatic, the enemy had available a considerable number of 'Small Battle Units'. These were mostly one- or two-man assault craft of the type developed earlier by the Italian Navy, which were based on San Remo, and 'Linsen', which worked from Spezia²; but towards the end of January the 'Linsen' were all withdrawn in order to prepare for demolition assaults against the Danube bridges. San Remo received a good deal of attention from the Allied bombardment squadron already mentioned; but the enemy's assault craft suffered more heavily from a bombing raid on the 8th of January, in which eight were destroyed. Between that date and the 25th of April, when the Germans evacuated San Remo, they made ten sorties; but the only success they achieved was to torpedo and damage the French destroyer *Trombe* on the 17th of April. There were several clashes with Allied light forces, but we have no confirmation that any assault craft were sunk in them. Their last operation was a 'suicide' attack on Leghorn on the 24th of April, the day on which the Fifth Army entered Spezia. As Italian partisans had by that time openly risen and taken over control of much of the country, it was indeed a desperate venture. Seventeen enemy craft set out; but only two returned. At least eight were accounted for by our naval and air patrols, or by shore guns;

¹ G. W. L. Nicholson, *The Canadians in Italy 1943-45*, Vol. II, p. 664 (Ministry of National Defence, Ottawa), states that 58,172 officers and men and all the vehicles and stores of the 1st Canadian Infantry and 5th Canadian Armoured Divisions were transferred by sea in February and March 1945.

² See Appendix W for particulars of German 'Small Battle Units'.

and although the enemy claimed to have pressed home the attack with great determination, in fact no damage of any kind was done.

Small Battle Units of various types, but mainly ex-Italian craft and midget submarines, also carried out a large number of operations in the Adriatic. On some occasions the assault craft were carried by motor torpedo-boats to the scene of the operation; but attempts against our shipping lying in Zadar, Split and Ancona were almost entirely unsuccessful. In February the assault craft suffered severely in heavy raids on Pola by the Strategic Air Force; but the survivors shifted to other bases and tried to carry on. The last entry in their War Diary states that the bombing of Brioni Island on the 24th of April virtually eliminated all the remaining craft. The achievements of the whole genus of Small Battle Units in the Mediterranean theatre were thus even smaller than those of their colleagues in the English Channel and southern North Sea.¹

At the beginning of the year relations between the Royal Navy and the Yugoslav partisans were still in a condition of stalemate. Our suspicious Allies were resentful of the presence of the cruisers *Delhi* and *Colombo* in Split and Zadar, and obstructed all our efforts at formulating a joint policy to accomplish the final downfall of the common enemy. However negotiations in Belgrade led to the signature of a naval agreement, and this brought about an improvement in February. Relations may have been eased when the partisans beat the *Delhi's* football team by twelve goals to one; but it was perhaps risky for the British sailors to win the return match, even by the tactful margin of a single goal. On the 25th of February a Combined Headquarters, in which all the interested parties were represented, was set up in a specially equipped landing vessel moored at Zadar, and its staff was made responsible for planning and executing offensive operations in the northern Adriatic. The next problem to be tackled was the thorny one of the future of the Royal Yugoslav warships, which had been working with our Mediterranean Fleet ever since the Germans had occupied their country in April 1941. After conferences at Allied Forces Headquarters at Caserta it was, however, agreed that both Yugoslav navies would fight the Germans, the Royal section remaining under the control of the Commander-in-Chief, Mediterranean. With the chief political difficulties thus on the way to solution it was possible for the *Delhi* to be withdrawn from Split, and on the 12th of March her Captain made the last entry in his report on her four months' tour of duty in the port. 'We arrived' he wrote 'in a Bora (i.e. severe local gale) with the weather and the political atmosphere frigid. We left in a calm with the sun shining

¹ See pp. 124-126 and 152-153.

and a genial warmth in both atmospheres.' ¹ The *Colombo* stayed at Zadar until the end of April, but relations with the partisans had so improved that no difficulties were placed in the way of her crew helping to meet the naval requirements of the Adriatic campaign.

In February our light forces began to penetrate into the Gulf of Fiume, as well as patrolling off the west coast of the Istrian peninsula. They also boldly entered enemy-held harbours to attack shipping, and covered the landing of partisan troops on the few offshore islands still garrisoned by the Germans. In the following months the establishment of the Combined Headquarters, already mentioned, enabled us to increase the pressure on the German coastal traffic. We carried out a whole series of small commando landings behind the German lines, and the coastal craft began to reach right up to the head of the Adriatic, and to work off Venice as well. Study of the enemy's records does, however, once again reveal how often the contemporary claims had no foundation in fact. For example, on the night of 7th-8th February two groups of M.T.Bs attacked a German minelaying force and a large steamer off Pola, and claimed to have sunk the latter. In fact the minelayers suffered no damage, and the steamer (which was the 6,500 ton ship *Pluto*), though damaged, returned to Trieste under her own steam. Nor does the claim to have sunk a whole convoy of four ferry barges (F-Lighters) off Venice a week later receive any confirmation in the enemy's records. In sum it seems true to say that, although the constant harassing of the enemy's traffic in the Adriatic by our light forces and small formations of aircraft must have made his problems of supply by sea more acute, the actual losses they inflicted never came near to stopping the flow of supplies until the last few weeks of the campaign. Meanwhile the Strategic Air Force, taking a leaf out of Bomber Command's book, mined the approaches to Venice and Pola, and on the 21st of March Tactical Air Force Kittyhawks and Thunderbolts destroyed two merchantmen (3,953 tons) and a torpedo-boat in Venice docks, without doing appreciable damage to the town's many historic and artistic treasures. The end of that month saw the virtual cessation of air operations against shipping in the Mediterranean, for the full effort of all commands was then devoted to the support of the new offensives by the Fifth and Eighth Armies; but before recounting those great events we must once more glance briefly, and for the last time, at the progress of the Allied cause in the Levant.

In the eastern Mediterranean the main duties of the naval forces were to support the provisional government of Greece by tactfully

¹ The *Delhi* sent down divers to inspect her hull for limpet mines before sailing. They found that the time-honoured naval jest was, in her case, actually true, and that she was aground on her own tins and bottles.

discouraging a renewal of civil strife in the ports¹, to contain and ultimately reduce the German garrisons in Rhodes, Crete and the few Aegean Islands which they still occupied, to clear the many mine-fields, and to land relief supplies for the Greek population. During many anxious weeks the ships of the 15th Cruiser Squadron preserved the peace in the principal ports, while the destroyers intercepted traffic to certain islands which had been seized by the Communists, and kept the German garrisons of the other islands quiet by occasional naval and air bombardments; and all the time mine-sweeping went on ceaselessly, though not without loss to the British sweepers. In February the approaches to the Dardanelles were cleared, and on the 19th four ships which had come from America in a UGS convoy passed straight through to Odessa in safety. Thus did we open a far easier supply route than the Arctic one for the benefit of our Russian Allies; and the first cargo ships to use it were quickly followed by three British liners carrying some 7,500 Russian soldiers who had been released from German prison camps in western Europe.

Towards the end of February Turkey, Egypt, Syria and Lebanon, which had so long preserved their neutrality, often to our serious embarrassment, declared war on Germany. This belated action made Allied control of the waters of Levant virtually complete; but it was difficult for British sailors not to remember how greatly their burdens would have been lightened, and their losses reduced, had these countries joined cause with us even as little as a year earlier. As it was, the declarations of war came too late to make any appreciable difference; for we had in fact already gained as wide a measure of maritime control as we needed. On the last day of February we landed 500 men to assault the Germans on Piskopi island, and they surrendered next day. This was the last combined operation in the eastern Mediterranean, since all the other enemy garrisons were left alone, except for occasional bombing and bombardments, until the final surrender.

By the beginning of April all was ready for Field Marshal Alexander's armies to resume the offensive in Italy², and the Allied Air Forces were striking continuous and heavy blows at the German land communications. The 'Flank Force', now strengthened by the arrival of the cruiser *Orion* and several more destroyers, was constantly in action against the coastwise rail and road traffic on the Franco-Italian frontier, and some of its destroyers were detached to support the left flank of the Fifth Army. The main land offensive opened on

¹ See pp. 117-118 regarding events in Greece in December, 1944 and the truce of 11th January, 1945.

² Field Marshal Sir Harold Alexander succeeded General Sir Henry Maitland-Wilson as Supreme Allied Commander in December 1944.

the evening of the 9th of April, and its success depended greatly on turning the strong defensive position on the right of the Eighth Army's front, which commanded the approach to the Po valley. Ideally this should have been done by a large-scale amphibious landing; but the necessary combined operation craft were not available in the theatre. By way of substitute, on the night of 10th–11th of April two battalions embarked in the new type of amphibious vehicle called the Landing Vehicle Tracked (L.V.T.), and landed behind the main German defences, thus opening the way into the Po valley and enabling the Eighth Army to trap large numbers of Germans on the south bank of that river.¹ Then the L.V.Ts, and also the few assault Landing Craft (L.C.As) available, helped in the crossing of the river to such good effect that General Sir Richard McCreery, Commander of the Eighth Army, sent his 'grateful thanks for the splendid assistance given by the Royal Navy . . . during the passage of the Po'. The retreating enemy was now hotly pursued to the Adige, which our troops crossed on the 27th of April. On the Fifth Army's front too progress was very rapid. On the 24th of April the Germans evacuated Spezia, and three days later the Americans entered Genoa. Neither port was very seriously damaged, mine-sweepers at once set to work to clear the approaches, and the naval parties held ready by Admiral Morse moved in hard behind the troops to organise the discharge of cargoes and restore the facilities.

Meanwhile the light forces in the northern Adriatic, and in particular the 28th, 57th and 59th M.T.B. flotillas, were extremely active. Night after night they attacked German convoys and small war vessels off the Italian as well as the Yugoslav coast, and scored some conspicuous successes. Such was the sinking of the torpedo-boat TA.45 on the night of the 12th–13th of April.

Early in April an entire wing of the Balkan Air Force was transported by sea to an airfield near Zadar, whence it could support the Yugoslav land forces and join with the Desert Air Force from Italy and with our Coastal Forces in the final offensive against ports and shipping in the Adriatic. Fighter and fighter-bomber sweeps now took place almost continuously, and we know that they sank at least nine small enemy war vessels at sea, and many more in the harbours. It will be appropriate here to break our narrative to insert the final statistics (Table 33) showing the losses inflicted on enemy merchant shipping in the Mediterranean theatre. The smallness of the losses recorded in this period arises, of course, from the fact that little

¹ The L.V.T. was an American development, and although new to the Mediterranean theatre, had already proved itself in the Pacific, where its ability to climb over coral reefs had been of great value. See pp. 193 and 148 regarding their use in the assault on Saipan in June 1944, and on the island of Walcheren at the entrance to the Scheldt in November 1944 respectively.

merchant shipping remained to the enemy, whose supplies were very largely carried in naval auxiliaries or in former merchantmen commissioned into and manned by their Navy. Though it is difficult to give an exact figure for his losses of auxiliary warships, it is almost certain that they exceeded his losses of merchantmen. In an Appendix to this volume the enemy's merchant ship losses in the Mediterranean theatre for the entire war have been tabulated on a yearly basis¹, and it will be seen that they totalled no less than 3,082 ships of 4,147,523 tons. The loss of virtually the whole of his merchant shipping undoubtedly contributed enormously to the failure of all the enemy's aims and purpose in this theatre.

Table 33. Enemy Merchant Shipping Losses in the Mediterranean January–May, 1945

No. of ships—Tonnage

Month	By surface ship	By submarine	By air attack	By mine	By other cause	Total
January .	—	—	2- 7,463	1- 32	1- 81	4- 7,576
February .	1-332	—	5- 9,008	—	5- 2,835	11-12,175
March .	—	—	3- 4,451	1- 30	4-12,681	8-17,162
April .	1-279	—	2- 71	—	56-28,242	59-28,592
May .	—	—	—	1- 44	21-15,391	22-15,435
TOTALS	2-611	—	12-20,993	3-106	87-59,230	104-80,940

- NOTES: (1) Most of the ships shown as lost 'by other cause' were either scuttled or captured.
 (2) A large number of small vessels, in service as naval auxiliaries, was also sunk during this period. These have, as in earlier tables, been excluded.
 (3) Of the 104 ships accounted for in this table, 82 were of less than 500 tons.
 (4) Of the 12 ships sunk by air attack, 10 were accounted for by raids on harbours.
 (5) Allied submarines had ceased to operate in the Mediterranean in November 1944.

While the air and surface forces were thus sweeping German traffic from the Adriatic, landing craft were lifting partisan troops and landing them on the Dalmatian islands still held by the enemy. In all cases British minesweepers cleared the routes for the assault forces, and our L.C.Gs and coastal craft invariably supported the landings. By the 22nd of April all the islands had been freed, and the sweepers then turned their attention to clearing the approaches to the Istrian ports. On the last day of that month Marshal Tito's troops reached the outskirts of Trieste, what time British forces, which had fought their way round the top of the Adriatic after capturing Venice, were only fifty miles away to the north. At 2 p.m. on the 29th of April, at Allied Forces Headquarters in Caserta, German

¹ See Appendix O.

representatives signed the instrument whereby all their forces in Italy surrendered unconditionally. It came into force at 2 p.m. on the 2nd of May.

Victory in the Mediterranean theatre, the climax of nearly five years of unceasing struggle, came astonishingly quickly; for only twenty days elapsed between the launching of the new land offensives and the surrender. As in so many previous wars it was the soldiers who gained the final victories; but they will be the first to acknowledge the debt they owed to the maritime services who had landed them wherever they were needed, who had kept them supplied in all weathers and in spite of the worst that the enemy could do, and who had constantly guarded their flanks wherever they came down to the sea. Moreover it was the constant pressure exerted by our naval forces and maritime aircraft which deprived the enemy of the sea-borne supplies which could have tilted the balance on land. From start to finish the Mediterranean campaigns were combined operations; but they will always provide a classic example of the immense benefits which may be derived from the skilful and determined use of maritime power.

CHAPTER XXII

HOME WATERS AND THE ARCTIC

1st January–8th May, 1945

‘There must be a beginning of any great matter, but the continuing unto the end until it be thoroughly finished yields the true glory’.

Sir Francis Drake to Lord Walsingham,
‘from the *Elizabeth Bonaventure*, riding at
Cape Sagres’, 17th May, 1587.

As the sixth New Year of the war came and passed, the Commander-in-Chief, Home Fleet, Admiral Sir Henry Moore, once again reviewed the problems facing his command. The Arctic convoys would, he concluded, still absorb much of his attention and effort, the more so since the Germans had recently strengthened their air forces in north Norway and the U-boats were concentrating right off the entrance to Kola Inlet, in waters which the convoys could not avoid but where asdic conditions were invariably poor. Harassing the German traffic off the coast of Norway would continue to be the main offensive task, but a watch would also have to be kept on the enemy’s surviving surface ships in the Baltic; while the appearance of the U-boats in our inshore waters forced us to provide strong screens for the larger warships when at sea, and to make constant destroyer sweeps in the waters around the Orkneys, where the fleet was wont to do its exercises and training.

The strength generally available to Admiral Moore was, by earlier standards, small; for he had no more than one battleship, seven cruisers or anti-aircraft cruisers and four flotillas of destroyers, of which one was lent to the Western Approaches Command. As there was no longer a fleet carrier available, all our ships of that class having gone to the Far East¹, he was given six, and later eight escort carriers. To enable them jointly to meet a wide range of requirements, one was equipped with torpedo-bombers, three with anti-submarine Swordfish and day fighters, one finally received a few night fighters, and three operated American Avengers, which were capable of dive-bombing and minelaying as well as anti-submarine work. Between them the escort carriers could thus meet the needs of the Arctic convoys as well as strike offensive blows off Norway.

¹ See p. 202.

But their speed was so low that it was very difficult to get them into position in time to take advantage of the rare and fleeting breaks of good weather found in those waters in mid-winter; and many operations were frustrated by snowstorms or fog. This was the more unfortunate because the traffic to and from Narvik was at this time more important than ever to the Germans. No less than nine of their divisions had, because of Hitler's obstinate refusal to approve a timely withdrawal from northern Finland, been left in extreme peril by the Russo-Finnish armistice of the 4th of September 1944. Early in 1945 the 170,000 troops involved were retreating on Narvik, whence the Germans still hoped to evacuate the majority by sea; and it was mainly for this purpose that they had kept over 200 merchantmen totalling 380,000 tons, in north Norway. As both sea and land transport for the retreating troops depended on the safe arrival of fuel from Germany the stoppage of the coastal traffic took an important place in Allied plans.

The offensive by the various arms of the Home Fleet—submarines and M.T.Bs, as well as air and surface-ship striking forces—had, as in the preceding phase, to be co-ordinated with the work of Coastal Command's No. 18 Group. The original intention was that the Home Fleet should be responsible for the Norwegian coast north of Stadlandet, and No. 18 Group for the sector south of that promontory.¹ But as the rocket-firing Mosquitos and also the night-flying Halifaxes could reach further to the north than Stadlandet, and the Fleet Air Arm could make effective use of its minelaying aircraft in the narrow inshore channels south of that point, the two commands agreed that it was better to co-ordinate their operations than to establish a rigid line of demarcation between them. To assist in this purpose Admiral Moore suggested that the Admiralty should keep a running plot of all enemy traffic reported off Norway. This was started in February, and proved a great help to all the various forces involved in the campaign.

In the far north the Arctic convoy cycle had now been shortened from five weeks to thirty days, which meant that the same warships probably had to do consecutive operations, thus placing an even heavier strain on their crews. In spite of prolonged and patient negotiations we had still not managed to get the Russian Navy and Air Force to do very much about clearing the U-boats off their own back doorstep; and the old ruses, such as evasive routeing and wireless deception, were of little avail against the enemy's concentration at the entrance to Kola Inlet.

The Flag Officers commanding the 1st and 10th Cruiser Squadrons now conducted the Arctic convoys in turn, and JW.63 of thirty-five

¹ See Map 40.

ships, which sailed from Loch Ewe on the 30th December 1944, was in charge of the latter officer—Vice-Admiral Sir F. Dalrymple-Hamilton. He flew his flag in the escort carrier *Vindex*, and had the light cruiser *Diadem* and nineteen escort vessels under his orders. The corresponding homeward convoy, RA.63 of thirty ships, left Kola Inlet on the 11th January 1945; and, in spite of Admiral Moore's forebodings, the double passage was chiefly remarkable for producing no contacts at all with the enemy. We now know that the German intelligence organisation had produced no information regarding our movements, and the two or three U-boats which were in the Barents Sea never gained touch with either convoy. A very violent gale, however, struck and scattered RA.63 when it had reached a point to the north-east of the Faeroes, and the escort commander had difficulty in re-forming the merchantmen.

While this double operation was taking place in the far north, other units of the Home Fleet were making a series of attacks on the traffic passing through the Inner Leads; but the fickleness of the weather proved a constant handicap, especially to the carrier aircrews. None the less the M.T.Bs of the 54th (Norwegian) flotilla achieved notable successes between the 6th and 8th of January, when they sank three large and heavily escorted ships, all of which were fully loaded with iron ore.¹ On the night of the 11th–12th, Rear-Admiral R. R. McGrigor, with the cruisers *Norfolk* and *Bellona* and three destroyers, swept the Leads near Egersund, and encountered an important convoy. Two deeply laden ships and one of the six escort vessels with the convoy were sunk. Fighters flown from two escort carriers covered the surface ships' withdrawal, and other of their aircraft then laid mines off the coast. Next, on the night of the 28th–29th, just before JW.64 sailed, Swordfish from the *Nairana* and *Campania* searched the Leads near Vaagso; but they sighted nothing but small craft, and German records state that only a fishing vessel was sunk. In January the successes achieved by warships and naval aircraft off Norway amounted to twelve enemy vessels of 29,043 tons sunk, which was almost exactly the same as No. 18 Group's score; but an attempt to catch the three large German destroyers², which left Narvik south-bound for the Baltic late on the 26th, was less successful. Admiral Moore heard of the movement on the 27th, just after the escort carriers had sailed for the Norwegian coast to carry out the search of the Leads already mentioned. He considered that the German destroyers would probably follow the route inside the coastal islands, which the enemy had used so often before; and in that case it would be better for No. 18 Group to attack them by day than for surface ships to attempt interception in waters which

¹ See p. 166 regarding the earlier operations of this flotilla.

² These were the Z.31, Z.34, and Z.38, ships of 2,688 tons.

were heavily mined and covered by numerous shore batteries. On the other hand the enemy might attempt a high-speed night passage outside the Leads; but in that event it was doubtful whether there was time for ships sent from Scapa to catch them. The Naval Staff agreed that the inshore route was the more probable, but in case the enemy adopted the second alternative the Commander-in-Chief ordered Admiral Dalrymple-Hamilton, with the cruisers *Diadem*, and *Mauritius*, to make for a point off the coast near Bergen, whence they were to sweep to the north. He had no destroyers to send, unless he cancelled the carrier operation then in progress; and that the Commander-in-Chief did not consider justifiable—a decision which, in his own words, 'proved unfortunate'. The two cruisers actually sighted the enemy at long range in bright moonlight just after midnight on the 27th–28th, and in a high speed chasing action damaged the leader, Z.31, seriously and the Z.38 slightly. The Germans fired their torpedo salvos without result, and then abandoned the attempt to break through, turning to the north under cover of smoke. Though the British cruisers pursued them until they came under fire from shore batteries, the superior speed of the German destroyers enabled them to escape. They entered Bergen early on the 28th, and the Z.31 went into dock. The other two ships sailed again the same evening, were attacked unsuccessfully from the air on the 29th, and took shelter for the day in a fiord south of Stavanger. Thence they finally reached Kiel safely on the 1st of February. On the British side no one was satisfied with the inconclusive results of the encounter; but the truth was that the excellent visibility gave the Germans plenty of time to take evasive action, and it was hardly possible for large cruisers to force a conclusion with a faster enemy in the confined waters off the Norwegian coast. It is, however, interesting to find that the German authorities were also dissatisfied with the action, and considered that their ships should have made for the protected waters of the Leads as soon as they knew that they had been sighted by our reconnaissance aircraft.

It will be convenient here to complete the story of the German destroyers in Norway. The fourth ship from Narvik, the Z.33, left on the 5th of February with the intention of joining forces with the Z.31, which had meanwhile completed emergency repairs at Bergen, for the passage to the Baltic. But the Z.33 ran aground early on the 8th, and had to be towed back to Trondheim. While sheltering in a fiord south of Stadlandet next afternoon she was attacked by a strong striking force from No. 18 Group, and was hit by one bomb. None the less the crippled destroyer was towed safely into Trondheim on the 11th. Meanwhile the Z.31 had left Bergen on the 8th for Oslo fiord, where further repairs were carried out. Both she and the Z.33, after many vicissitudes, appear to have reached the western Baltic late in

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NORTHERN NORWAY and the BARENTS SEA

SPITZBERGEN

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70°

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LOFOTEN
ISLANDS

Sorøy I.

North Cape

Altenfjord

Tromsø

Bardufoss

Petsamo

Kola Inlet

Murmansk

Vaenga

Narvik

Vestfjord

Bodø

WHITE SEA

65°

20°

30°

65°

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March. So ended the attempt by the Germans to maintain a powerful squadron of surface warships in north Norway. Although it had, as a 'fleet in being', exerted considerable influence on our dispositions and strategy, particularly at the time of its greatest strength in 1942¹, its actual accomplishments had been very small; and many of its ships were sunk or damaged in the various forays described earlier in these volumes.

Early in 1945 the naval base at Loch Ewe, which had long served as assembly point for the Arctic convoys, was closed in order to save manpower; and JW.64, of twenty-six merchantmen, therefore formed up in the Clyde to sail from Greenock on the 3rd of February. Rear-Admiral McGrigor was this time in command, and had with him the escort carriers *Campania* and *Nairana*, the cruiser *Bellona* and seventeen flotilla vessels. In marked contrast to the quiet passage enjoyed by its predecessor, the enemy maintained almost continuous touch with this convoy from the time when, on the 6th, its presence was first reported by an aircraft making a meteorological flight. As a result of this sighting the Germans at once deployed eight U-boats ahead of the convoy, and on the 7th a strong force of forty-eight Ju.88 torpedo-bombers took off to attack it. Early that morning the convoy escorts' radars detected a large number of aircraft, and Admiral McGrigor manoeuvred the convoy to place them astern; yet no attack developed. The enemy's records state that their shadowing aircraft failed them at a critical moment, thus causing the striking force to miss its quarry; but the fact that we were in contact with the torpedo-bomber force by radar and had made all preparations to meet the attack, suggests that they must have been quite close to the convoy. The abortive sortie at any rate cost the Germans seven aircraft.

On the 8th and 9th of February the U-boats and reconnaissance aircraft continued their search for the convoy, and the latter gained touch periodically. It was now that our escort carriers felt the lack of modern night fighters acutely; for they had no means of dealing effectively with shadowing aircraft during the long hours of darkness. No attacks developed, however, until the 10th, when some thirty torpedo-bombers, sent out in two waves about an hour apart, tried to break through the convoy's fighter and gun defences. The Germans claimed big successes in these attacks; but in fact no ship was even damaged, and the attackers certainly suffered substantial losses at the hands of the A-A gunners and the defending fighters. Altogether it was a highly satisfactory performance by the air and sea escorts. The only bad feature was the lack of fire discipline in the merchantmen and, more reprehensibly, in some of the warships as well. As so

¹ See Vol. II, Chapters V and XII, and Part I of this volume, Chapters IV and X. W.S.—VOL. III, PT. 2—5

often before, our own fighters were placed in grave danger when returning to their carriers by trigger-happy gunners who, as Admiral McGrigor remarked, had not even troubled to learn the difference between a Ju.88 and a Swordfish. One feels every sympathy with the wrath of the Fleet Air Arm pilots in this score.

After its successful defence on the 10th of February JW.64 had no more adventures, and although at one time eleven U-boats were patrolling across its track none gained touch until the convoy was entering Kola Inlet on the night of the 12th-13th. U.992 then heard the merchantmen's propellers, and fired a single torpedo on the bearing of the sound. She claimed to have hit an unidentified ship, and as the corvette *Denbigh Castle* was torpedoed at that time we must assume that she was the victim. Though successfully towed into Kola she became a total loss.

The Germans next moved all their eight available U-boats close to the Murman coast, and on the 14th three of them attacked a small convoy coming into Kola Inlet from the White Sea. Two large merchantmen were sunk in the position where the *Denbigh Castle* had been torpedoed two days earlier. Plainly the enemy's U-boat trap was a serious menace, and Admiral McGrigor at once set his mind to solving the problem of how best to deal with it. But before he could put his ideas into practice he had to meet a new requirement; for, shortly after JW.64's arrival, news was received that the Germans were attacking the Norwegians on Sorøy Island at the entrance to Altenfiord.¹ Four destroyers left harbour at once, took off 500 Norwegians, and brought them back to Kola, where they were distributed among the ships of RA.64 for passage to Britain.

On the evening of the 16th of February, the day before the thirty-four ships of RA.64 were due to sail, Admiral McGrigor sent out every available escort vessel to clear the approaches to Kola Inlet. He also asked the Russians to send up as many aircraft as possible next morning to help keep the U-boats submerged. The night anti-submarine sweeps achieved the destruction of U.425 by the *Lark* and *Alnwick Castle*; but the former was not to enjoy her success for long. The Germans had actually assembled about half a dozen U-boats off the entrance, and the slowness of the convoy in getting to sea on the 17th helped to give them their chance. First the *Lark*, which was sweeping ahead of the convoy, was torpedoed, probably by U.968, and had her stern blown off; but she was safely towed into harbour. Then a merchantman was hit by the same U-boat, her crew abandoned ship precipitately and prematurely, and she sank while being towed in. Before the day was over a worse disaster took place; for the corvette *Bluebell* was torpedoed by U.711 and blew up.

¹ See Map 39.

Only one survivor was picked up. A worse start to a long and hazardous journey could hardly be imagined.

On the 18th the Germans divided their U-boat strength—some to pursue the convoy, while others waited off Murmansk; but it was actually the violent gale which now struck the convoy that produced the greatest danger; for the merchantmen became badly scattered. By hard work the escorts had managed to shepherd all but four of them back into station when, early on the 20th, indications of a pending air attack became strong. Although the sea was still very rough the *Nairana* managed to fly off her Wildcat fighters, and there is no doubt that they and the A-A gunners accounted for several of the thirty-five enemy aircraft which took part.¹ Once again a well-co-ordinated defence had proved extremely effective; for not one of the merchantmen was hit. The German aircrews made wildly extravagant claims, and U-boats were even sent in search of the many ships they reported having damaged. That afternoon three destroyers, sent by Admiral Moore to replace the casualties suffered off Kola, joined the convoy. Enemy shadowing aircraft were still present on the 21st and 22nd, but no further attacks developed. Then, just after most of the stragglers had rejoined the convoy, another gale of such violence as to qualify as a hurricane struck and scattered it far and wide, again undoing all the good shepherding work carried out by the escorts since the previous gale. On the evening of the 23rd a strong force of German torpedo-bombers, which had been searching for the convoy, sank a straggler; but her boats were found by the destroyers sent to the rescue, and sixty-five survivors were picked up.²

For the next two days the gales continued to blow with unabated fury, the convoy made little progress, and the escorts were running so short of fuel that they had to be sent to the Faeroes to replenish; for fuelling at sea was impossible. Admiral Moore therefore sent out three more fresh destroyers, which joined on the evening of the 25th. As the sorely tried convoy struggled slowly past the Faeroes the weather at last relented somewhat, and most of the ships reached the Clyde safely on the 1st of March. One straggler, which had been missing since the first gale struck the convoy, finally made harbour safely after nothing had been heard of her for a week. Counting the two Archangel ships sunk before the convoy sailed from

¹ Details of German aircraft losses in the attacks on JW.64 on 10th February and on RA.64 on 20th February have not come to light, but it seems probable that some fourteen aircraft did not return from the various sorties made during the double convoy operation.

² This ship, the American merchantman *Henry Bacon*, was carrying some of the Norwegians rescued from Sorøy Island (see p. 256). Many of her crew deliberately gave up their places in the boats to the passengers, and so lost their lives. All who got away from her by boat were rescued. See Morison Vol. X, p. 312, for a graphic account of her last fight.

Kola, RA.64 lost four merchantmen; but no Arctic convoy ever suffered a more severe buffeting than fell to its lot, and twelve of the sixteen destroyers which took part in the operation had to be docked for hull repairs. In his report the senior officer of the escort gave high praise to the resolute manner in which the Merchant Navy crews overcame the difficulties produced by the violence of the storms. Two of the ships had even steered by block and tackle for a time, when their steering engines had broken down. But he remarked how the convoy always made its best speed shortly after it had been attacked; and he considered it astonishing that, in spite of all the emphasis we had so long laid on the danger of breaking formation, 'the enemy can still cure straggling so much more effectively than our own escorts'. It is indeed true that, for all our efforts, we never succeeded in wholly eradicating the tendency of some merchantmen to straggle astern or romp ahead of their convoys. Perhaps it was the sturdy independence of the Merchant Navy crews, and their inherent dislike of being ordered about by the busy little escorts, that found an outlet for expression in that manner—until danger visibly threatened them.

In February as in January the Home Fleet ships not taking part in the current Arctic convoy were almost continuously employed off the Norwegian coast; but neither surface nor air striking forces succeeded in finding any worthwhile targets. The old problem of forcing the enemy's shipping out of the Inner Leads into waters where our forces could more easily attack it was now again to the fore.¹ Most of the inshore waters were too deep for ground mines to be successful, and we had not developed a moored mine which could be laid by aircraft. Coastal Command therefore tried using delay-action bombs to give the enemy the impression that we had laid moored mines, and that some of them had detonated prematurely; but the ruse does not seem to have met with much success. A more promising development was the clearance by the 10th Minesweeping Flotilla of a four-mile-wide channel through the German minefield off south-west Norway, thus enabling our surface forces to approach the enemy's shipping routes on a more direct course and with less hindrance.

On the 11th of March JW.65, of twenty-four ships, left the Clyde for Murmansk, under the charge of Admiral Dalrymple-Hamilton, who was flying his flag in the *Campania*. This time the enemy's intelligence gave him better warning of the movement, and two days after the convoy's departure six Schnorkel U-boats sailed from Narvik to patrol west of Bear Island, while others concentrated off Kola Inlet. On the 14th the Germans started to fly daily air searches; but they failed to find the convoy, and it passed safely through the U-boat

¹ See Vol. I, pp. 156-158.

THE NORTH SEA and WESTERN BALTIC



patrol line. The fact that this convoy enjoyed unusually good weather until just before reaching its destination makes the failure of the German reconnaissance all the more inexplicable. On the 20th, when the convoy was approaching Kola Inlet a snowstorm put a stop to all flying from the escort carriers at a critical juncture, and the six U-boats lying in wait were able to seize their opportunity. They sank the sloop *Lapwing* and two merchantmen right outside the entrance.

The Russian Navy had meanwhile carried out our request that a channel should be swept through the German minefield north of Kola, to enable the convoys to approach or leave Murmansk by a shorter and more direct route. We made first use of this route when RA.65, of twenty-five ships, sailed on the 23rd of March. The frigates of the escort once again went ahead of the convoy to harass the U-boats, nine of which were now lying in wait, what time four destroyers put up a pyrotechnic display on the old route to draw the enemy in that direction. This ruse, combined with the strong anti-submarine measures, was wholly successful; for no U-boat even reported the sailing of the convoy until it was well on its way to the west. Although the enemy then sent several U-boats in pursuit, and also flew air searches, they did not succeed in locating the convoy, all of whose ships reached British ports safely.

March saw two more considerable operations off the Norwegian coast by the Home Fleet. In the first mines were laid to the south of Stadlandet with the object of forcing the enemy's shipping away from the coast and into the arms of the waiting M.T.Bs. As German records confirm that a large iron ore ship was mined in those waters on the 22nd, the operation seems to have achieved some success. The second sortie aimed to attack shipping between Trondheim and Kristiansund (North) with carrier aircraft and light surface forces¹; but they failed to find a single target. During the withdrawal the carrier-borne fighters did, however, demonstrate their ability to protect the surface ships by shooting down three of the ten Me. 109s which attacked Admiral McGrigor's force. But we realised that it was not economical to employ part of the very limited capacity of the escort carriers to provide fighter cover for other ships, and Admiral Moore therefore asked Coastal Command to take over the responsibility. His proposal was accepted immediately, and so close was the co-ordination between the two services that it worked very well when the cruisers and destroyers carried out their next sweeps into Norwegian waters.

The Admiralty was meanwhile considering the various possibilities open to the enemy should his total defeat on land become imminent. They remembered that in November 1918 the Germans had planned

¹ See Map 39.

a final sortie by the High Seas Fleet, which had only been frustrated by the mutiny of its crews; and they considered it possible that the Nazis might have a similar intention. Admiral Moore had so little strength that they decided to recall the battle-cruiser *Renown* from the Eastern Fleet to reinforce him; and plans were prepared to deal with either an attempt to break into the Channel or a sortie into the Atlantic by the northern passages. We now know that, apart from its U-boats, the German Navy was by this time in no condition to undertake any such desperate venture, even had the political leaders ordered it to do so.

In April two attempts by the Home Fleet's light forces to strike at the traffic in the Inner Leads failed to produce appreciable results. In the early hours of the 4th four destroyers actually found a convoy off Lister Light; but it was in very restricted waters, the merchant ships successfully gained the shelter of Jössing Fiord, where the *Cossack* had released the prisoners from the *Altmark* in 1940¹, and the German escort vessels suffered only slight damage. Nor were the destroyers more successful against another convoy sighted off Egersund a little later, and Admiral Moore considered that in these encounters they failed to make the best use of their torpedo armaments.

To return, for the last time, to the far north, after prolonged negotiations with the Russian authorities, in April we obtained their agreement to the adoption of several new measures against the Kola U-boat trap. The first was to lay indicator nets, which we would provide, off the entrance²; but the war actually ended before they had been placed; while the second was to lay deep minefields in the waters where the U-boats lay in wait. The fast minelayer *Apollo* and three destroyers accordingly left Scapa on the 17th with the mines, and laid them a few days later.

JW.66, the last east-bound Arctic convoy of the war, was conducted by Rear-Admiral A. E. M. B. Cunninghame-Graham, who had now taken over command of the 10th Cruiser Squadron from Admiral Dalrymple-Hamilton. He had with him the escort carriers *Vindex* and *Premier*, the cruiser *Bellona* and eighteen flotilla vessels. In addition the 19th Escort Group was sent ahead of the convoy to clear a way through the expected U-boat concentration. As we now know that the Germans had collected no less than twenty-one U-boats to work against the Arctic convoys, and that by the 23rd of April eleven were concentrated off Kola Inlet, with three more on their way to join them, these precautionary measures were certainly justified. It appears that only one U-boat gained touch with JW.66,

¹ See Vol. I, pp. 152-153.

² See Vol. I, p. 81, fn. 1, for a definition of indicator nets.

and her attack was wholly unsuccessful. On the other hand our counter-attacks only damaged one enemy; which showed yet again that, although our escort vessels could usually force the U-boats to remain submerged, the difficult asdic conditions always encountered in those waters made it extremely hard to destroy them. All the twenty-two ships of JW.66 reached North Russia safely.

When convoy RA.66 sailed from Murmansk on the 29th April there were still about ten U-boats waiting off the entrance; but two escort groups had been sent ahead, and they swept the approaches so vigorously that U.307 and U.286 both fell victims to their attacks. That evening, however, two U-boats did succeed in gaining touch with the convoy, and although no merchantman was hit the frigate *Goodall* was torpedoed and sunk, probably by U.968.¹ Our drastic anti-submarine measures undoubtedly frustrated the pursuit of the convoy, and although the enemy's reconnaissance aircraft did succeed in reporting its position on the 1st May, no attacks developed. All twenty-four ships reached the Clyde safely on the 8th of May.

It will be appropriate to mention here that one more convoy was sailed in each direction on the Arctic route after the war had ended. As a good many U-boats were still at sea escorts were provided in the normal manner, though on a reduced scale. No incidents took place on either journey, and the tempestuous saga of the Arctic convoys ended quietly on the last day of May 1945, when the twenty-five ships of RA.67 steamed into the Clyde with lights burning.

Study of the statistics of the whole series of Arctic convoys reveals several interesting points. The appalling weather which most of them encountered was, of course, always a major hazard; and that remained so to the end. There was, however, only one period (from March to September 1942) when the enemy's varied onslaught caused really serious losses²; and once we were able to provide adequate escort forces, and especially to include one or more small aircraft carriers, the Germans never regained the upper hand. The turning point came with the passage of PQ.18 in September 1942.³ The need for escort carriers to accompany convoys, in order to provide anti-submarine patrols and fighter defence, had not been foreseen before the war; and the ships of that class were in fact all war-time improvisations. Yet wherever they appeared—on the Gibraltar route, in the north Atlantic or in the Arctic—they at once proved their worth; and nowhere did they justify themselves more abundantly than in the stormy, ice-bound waters of the far north.

Taken as a whole the record of the Arctic convoys was, considering

¹ The attribution of this success to U.286 in Morison, Vol. X, p. 313, now appears to be incorrect.

² See Appendix R for full particulars of all Arctic convoys, 1941-1945.

³ See Vol. II, pp. 280-285.

the difficulties and dangers which beset them, amazingly successful. In the forty outward convoys 811 ships sailed. Thirty-three turned back for one reason or another, and fifty-eight were sunk. The 720 ships which completed the outward journey delivered about four million tons of cargo to our Ally.¹ Included in the deliveries were 5,000 tanks, over 7,000 aircraft, and very large quantities of ammunition. Though we have no knowledge of the part which this huge quantity of British and American war material played in helping the Russian armies to gain their great victories on land, it must surely have been substantial. Taking the homeward and outward convoys together eighty-nine Allied merchantmen (including a rescue ship and a fleet oiler), and eighteen warships were sunk²; and the German U-boats and aircraft contributed about equally to those losses. During the whole series of double operations 2,783 officers and men of the Royal and Merchant Navies were killed. On the other hand the Germans incurred the loss of the *Scharnhorst*, three large destroyers and thirty-eight U-boats through their attempts to stop the convoys. The balance of success therefore plainly lay very much on the Allied side; and as the Royal Navy conducted all the operations, and provided almost all the escorts, that service may feel justifiably proud of an achievement as great as any recorded in its long history.

On the 1st of May Rear-Admiral McGrigor sailed once again for the Norwegian coast from Scapa with two cruisers, three escort carriers and seven destroyers. His purpose was to attack the German Arctic U-boat flotilla's depot ship and the other vessels of the enemy's base organisation in Vestfiord.³ In mid-April an attempt against the same targets had been defeated by the weather; but this time the carrier aircraft at last found conditions to their liking. In a series of very accurate attacks the Avengers and Wildcats inflicted heavy damage on the German base installations, sank the depot ship *Black Watch* and a small merchantman, and destroyed U.711. These results were a well-deserved, if somewhat long-delayed return for the many fruitless sweeps and searches made by our carrier aircraft off Norway in 1945, often in very unfavourable weather. It was also appropriate that on this occasion, which was the last big war operation carried out by the Home Fleet, the Fleet Air Arm crews should have gained as much distinction as their predecessors had won in the same waters in the many clashes with the German Navy in April and May 1940.⁴ One feels that the pilots and observers of the *Ark Royal*,

¹ The figures quoted here exclude convoy JW.61A, as it was not a supply convoy, but was run specially to return Russian ex-prisoners of war to their homeland.

² See Appendix R for details. In addition to the losses mentioned above five merchant ships and a minesweeper were sunk in Russian ports by bombs or mines after arrival.

³ See Map 39.

⁴ See Vol. I, Chapter X.

Glorious and *Furious*, who had taken on such heavy odds in the early days, and so few of whom survived, would have been proud of the feats of their successors.

On the 5th of May, when the surrender of Germany had plainly become imminent, the ships of the Home Fleet were widely dispersed. Admiral McGrigor's force was at once recalled, and the Commander-in-Chief's staff rapidly reorganised the fleet to prepare for the Allied re-entry into Denmark and Norway. On the evening of the 6th the cruisers *Birmingham*, *Dido* and four destroyers sailed from Rosyth for Copenhagen. With them went minesweepers to clear a passage through the Skagerrak, and Admiral McGrigor met them at sea to provide fighter cover from his carriers. After passing through the Skagerrak, where many mines were cut, the Copenhagen force closed the Swedish coast, and was then led through the territorial waters of that country by Swedish warships, to arrive at its destination on the evening of the 9th. The Danes greeted the British warships rapturously.

Two days later the *Devonshire* and three destroyers, one of them the Norwegian *Arendal*, escorted the fast minelayers *Apollo* and *Ariadne*, in which the Crown Prince of Norway and members of that country's exiled government had embarked, from Rosyth to Oslo, where they arrived on the 13th. Thence the *Devonshire* went on to Copenhagen to relieve the *Birmingham*; and on the 24th she, the *Dido* and two destroyers escorted the German cruisers *Prinz Eugen* and *Nürnberg*, which were the only enemy major warships immediately fit for sea, from Copenhagen to Wilhelmshaven.

Meanwhile other destroyers, escorted by British and Norwegian M.T.Bs, had carried across specially appointed 'Naval Officers in Charge' to all the chief Norwegian ports. In view of the large number of Germans still present in Bergen and Trondheim Admiral McGrigor was sent with the *Norfolk* to the former and Admiral Cunninghame-Graham in the *Birmingham* to the latter; and the cruisers also took across British troops. The chief problems in those ports were the removal of the U-boats, the collection of German prisoners, the control and repatriation of the large number of Russian ex-prisoners whom we found in Norway, and the unloading of supplies for the Norwegian people; but with the full-hearted co-operation of the local authorities all difficulties were quickly surmounted.

On the 5th of June the curtain went up on the last act of the Norwegian drama, when King Haakon and members of his family embarked in the cruiser *Norfolk* at Rosyth. Admiral McGrigor had meanwhile transferred his flag to the *Devonshire*, which was to act as principal escort. The choice of this latter ship had been deliberate, for it was she who had brought the King of Norway to England in

May 1940.¹ Four destroyers, one of them the Norwegian *Stord*, completed the escort, and the reception given to the squadron as the *Norfolk* steamed into Oslo flying King Haakon's standard surpassed even the welcome given to the first Allied warships to arrive in Norway. So ended the five years of trial and tragedy to which that gallant people had been subjected.

The months which followed the reoccupation of Denmark and Norway saw the gradual rundown of the Home Fleet, and the reversion of such of its ships as were not allocated to the Pacific, to their normal peace-time duties. For nearly six years it had played an immense part in the prosecution of Allied maritime strategy. Quite apart from its traditional duties of blockading the enemy's coast and covering our own Atlantic shipping, it had acted continuously as the central strategic reserve from which ships were detached whenever new commitments arose. Indeed the reader of these volumes will not have failed to notice how it was almost always from the Home Fleet that reinforcements were sent to meet any new threat, or to strengthen a foreign command for a special operation. Thus it reinforced the eastern Mediterranean at the crisis of June 1940, and on many later occasions²; it was Home Fleet ships which were sent to replace lost French maritime power when Force H was formed at Gibraltar in the same month³; the same fleet provided many of the escorts for the Malta convoys⁴, and almost all those which worked on the Arctic route; the famous Support Groups which helped so signally to turn the tide in the Battle of the Atlantic in May 1943 were partly drawn from the same command⁵, as were the escort and covering forces for all our great combined operations from 'Torch' in November 1942 to 'Neptune' in June 1944. Indeed it is remarkable how completely Lord Barham's remark, made during the Napoleonic war, applied to the recent struggle; for once again the Home Fleet showed itself to be 'the mainspring from which all offensive operations must proceed'.

¹ See Vol. I, p. 197.

² See Vol. I, pp. 262, 295 and 299.

³ See Vol. I, pp. 241-242.

⁴ See Vol. II, pp. 134 and 302.

⁵ See Vol. II, pp. 366-367.

CHAPTER XXIII

COASTAL WARFARE

1st January–8th May, 1945

The Climax of the Anti-Shipping Offensive

‘To hover near the land, intercepting and fighting by day, manning boats and cutting out by night, harassing, driving on shore, destroying the sinews of war by breaking down communications, was to them [the British] simply an old experience, to be applied under new . . . circumstances.’

A. T. Mahan, *Sea Power in its Relation to the War of 1812*, Vol. II, pp. 193–194.

AT the beginning of 1945 the importance of Antwerp had become even greater than before; since the Allied armies required large reinforcements and immense quantities of supplies to replace those lost in the German offensive in the Ardennes in the previous December, and to prepare for the drive to the Rhine. Although Cherbourg, Havre and Rouen were still the ports of entry for some American stores (chiefly liquid fuels and ammunition), all the rest of their supplies, as well as virtually the whole of the British Army's, were being carried to Antwerp. A few figures will illustrate its importance at this period. On the 3rd of January—which was by no means an exceptional day—out of a total of 57,060 tons of stores landed on the continent 28,760 tons passed through the port, as did 9,010 tons of petrol and oil, and 2,722 tons of ammunition for the British forces. So heavy were the demands falling on the Navy and mercantile marine that we once again experienced an acute shortage of some types of vessel, and particularly of troop transports, tugs and L.C.Ts.

At this time almost the whole of western Holland was still a German stronghold, and as there were large numbers of E-boats based on Den Helder, Rotterdam and IJmuiden, and various types of ‘small battle units’ had been sent to bases between Rotterdam and the delta of the Maas¹, we had to provide strong escorts to all convoys sailing to and from Antwerp. The hazards encountered at sea were not, however, the only cause of casualties on the Antwerp route, for shipping suffered considerable losses after it had reached

¹ See Map 32.

its destination from the large numbers of pilotless missiles which the Germans were now firing into the town and docks. Over 100 were recorded in one week in January, and one result was that we were forced to shift the discharge of ammunition to Ghent and Ostend. The enemy's long-range bombardment continued on about the same scale until, at the end of March, the Army overran the missile launching sites.

The convoys for Antwerp assembled in and sailed from the Thames, and their safety was the responsibility of the Commander-in-Chief, The Nore, now Admiral of the Fleet Sir John Tovey. On the continent the Admiralty continued its usual practice of appointing a 'Naval Officer in Charge' to administer each captured port, and in the autumn of 1944 such appointments had been made to both Ostend and Antwerp. But the eastward advance on land had greatly increased the importance of the Belgian ports and of those in western Holland at the expense of the ports on the Channel coast of France, and a larger reorganisation had thus become necessary. Commodore F. E. P. Hutton was therefore appointed Commodore, Belgium, with responsibility for all the ports of that country, and Admiral Sir Gerald Dickens (Retd.) came across to Brussels to undertake a similar duty in respect of the Dutch ports, many more of which were likely to fall into our hands in the near future. These two officers both worked under the broad control of the Allied Naval Commander, Expeditionary Force. On the 1st of January 1945, when the appointment of the Flag Officer, British Assault Area lapsed¹, a further reorganisation took place. All the ports on the French Channel coast were placed under a 'Senior Officer, British Operated Ports (France)', who established his headquarters at Calais; and he was made responsible to the Flag Officer, Dover instead of to the Expeditionary Force Commander. With only minor changes this organisation stayed in force until the end of the war.

The inshore squadron known as Force T, whose flotillas of landing craft and coastal craft worked from Belgian and Dutch bases, was still under Captain A. F. Pugsley, who had conducted the assault on Walcheren in the previous November.² He was now responsible for patrolling the Scheldt estuary, for supporting the western flank of the Twenty-First Army Group, and for providing such naval co-operation as the military commands covering the network of rivers and canals in western Holland might need. Throughout the period dealt with in this chapter Force T made repeated small commando raids on German positions in the islands between the mouths of the Scheldt

¹ See p. 154.

² See pp. 148-151.

and the Maas.¹ Their purpose generally was to test the strength of the enemy's defences and to collect Intelligence.

The New Year had barely opened when, on the 2nd of January, the Allies suffered a very grievous loss through the death of Admiral Sir Bertram Ramsay in an aircraft accident. Outside naval circles his name had been practically unknown until, in May and June 1940, he conducted the famous operation 'Dynamo' for the rescue of the first British Expeditionary Force from France²; but after achieving fame almost overnight during that anxious period he had been associated prominently with the planning and execution of nearly all the great Allied combined operations. In the invasion of North Africa he had been Admiral Cunningham's deputy³, in that of Sicily he commanded the Eastern Naval Task Force⁴, and for the greatest undertaking of all, the invasion of Normandy in June 1944, he was given the supreme responsibility which could fall to an officer of his service by being appointed Allied Naval Commander of the Expeditionary Force. Now, suddenly, we were deprived of all his accumulated wisdom and experience; and the very high regard in which he was held in all Allied councils would plainly make his replacement unusually difficult. Vice-Admiral A. G. Kirk, U.S.N., took over Ramsay's duties temporarily on the 9th of January, the day after he was buried with full military honours at St Germain-en-Laye; and on the 19th Vice-Admiral Sir Harold Burrough, who had been in command at Gibraltar since December 1943, was appointed Allied Naval Commander in his place.

The Germans, quite rightly, decided to concentrate their naval effort on disrupting the traffic running to and from Antwerp. Their policy was to use aircraft and small surface vessels to mine the western Scheldt, and to send their E-boats, of which about fifty were distributed between Den Helder, Ijmuiden and Rotterdam, to attack the convoys at sea; while the short-range 'small battle units' worked in the estuary of the river, and the longer range midget submarines ('Seehunds'), supplemented by occasional patrols by conventional U-boats, sought our shipping off the Kentish coast, in the Channel as far west as Dungeness, and on the east coast as far north as Yarmouth. Undoubtedly the greatest threat was the minelaying in the Scheldt itself, where the sinking of one large ship could have stopped our entire traffic to and from Antwerp. This was a serious anxiety to the naval authorities, and indeed it now seems surprising that the Germans did not put a greater effort into minelaying at the expense of their special assault craft which, as has already been told,

¹ See Map 32.

² See Vol. I, Chapter XI.

³ See Vol. II, p. 313.

⁴ See Vol. II, p. 444 and Part I of this volume p. 118.

had never paid any great dividend.¹ To give only one example of the potential danger, on the 23rd of January about a score of Ju.88s infested the river so heavily with mines that during the next five days our sweepers detonated thirty-six. Fortunately, however, the Germans possessed few aircraft which were suitable for minelaying; and most of them were commonly employed on land bombing operations. It is a surprising fact that this sortie in January 1945 is the last recorded minelaying operation by the German Air Force. It is likely that the rapid decline of the enemy's effort was brought about by the urgent need to strengthen their fighter formations at the expense of the bombers, in order to counter the heavy Allied air raids on German cities and industrial centres; and, secondly, by the shortage of fuel caused by our bombing attacks on oil installations.

The onus of defending the merchant ships using the Thames-Scheldt route fell almost entirely on the Nore Command and on No. 16 Group of Coastal Command; and a great many conferences took place at the Chatham Area Combined Headquarters, and between the higher authorities of the two services, to arrive at the best way of integrating the activities of the aircraft and warships. To deal with the enemy's minelaying in the river the Army strengthened the gun defences on the banks, while the Navy patrolled the narrow waters with large numbers of light craft, and employed a strong force of minesweepers continuously. In order that the warships and army guns should enjoy complete freedom to engage any aircraft sighted at night, no air patrols were flown over the River Scheldt itself or in the approaches to it during the dark hours. To deal with the E-boat attacks in the open sea we strengthened the convoy escorts; and to counter all types of enemy activity in the outer Scheldt we transferred the Coastal Force base from Zeebrugge to Flushing and kept numerous M.T.Bs and M.Ls constantly on patrol. These latter worked with and were controlled by radar-fitted frigates in the manner which we had developed and proved at the time of the Normandy landings.² The enemy's tactics posed, however, some very difficult problems for the air and surface patrols. His striking forces normally left harbour at dusk, and the E-boats always tried to make port again before daylight. Both they and the special assault craft were very difficult to locate from the air, and still harder to attack successfully. Nor did new weapons, such as the 250-pound bomb fused to burst just above the surface of the sea, produce the desired results. In fact German records reveal that none of the 118 attacks made by our air patrols in January caused any damage. We were, however, developing our sea-air co-operation in one direction which

¹ See pp. 125-126 and 152-153.

² See p. 123.

at once showed promise; for the frigates were now being fitted with 'Very High Frequency' radio telephones, with which they could communicate direct with the patrolling aircraft. If one of the latter sighted an enemy he would at once call up the surface forces, and would then send out a stream of shadowing reports to help the warships find their quarry. These tactics finally became our standard practice, and produced excellent results; but at the beginning of the year our patrol aircraft were carrying out a great deal of unrewarding flying. Nor did the Spitfires of the 2nd Tactical Air Force, which joined in the offshore patrols in January, at first do any better than No. 16 Group's aircraft; but they did inflict some losses by attacking the enemy assault craft in their bases.

In addition to its responsibility for the patrols off the Dutch and Belgian coasts No. 16 Group, for all that its strength was now no more than about 100 aircraft, had also to watch the traffic moving along the north German coast. Here profitable targets were few and far between; but the German patrol craft and minesweepers were both numerous and heavily armed, and could strike back strongly at low-flying aircraft. Thus in January the group's Strike Wing carried out only one operation when, on the 17th, thirty Beaufighters attacked the anchorage at Den Helder. They were met by very heavy anti-aircraft fire and six of the attackers were shot down. As only one small patrol vessel was sunk it was a costly repulse.

Meanwhile long-range minelaying by Bomber Command continued on the same pattern as in 1944, with the object of disrupting German traffic in the western Baltic and on the routes to Norway. Early in the New Year, however, the pace of the Russian advance into Germany caused us to stop all minelaying to the east of Swinemünde; and the probability of an early eastward advance by our own armies led to the cancellation of minelaying to the west of the Weser river at the same time. In both cases the reason was that we wished to avoid having to clear our own mines, many of which were fitted with long-delay mechanisms, from newly captured ports and anchorages. In January bad weather and severe icing greatly restricted air minelaying; but apart from causing the loss of eighteen German ships totalling 42,673 tons the campaign achieved an important success by forcing the Germans to abandon the U-boat training area in the Gulf of Danzig.¹ In the following month Bomber Command laid many more mines, especially off south-west Norway; and it was now that shortage of sweepers first began to cause the Germans serious embarrassment. Traffic congestion became acute, and twenty-three ships of over 25,000 tons were sunk.² In addition

¹ See p. 140.

² See Table 34 (p. 275) for details.

two U-boats fell victims to air-laid mines during the first two months of the year.¹

While Bomber Command's minelaying aircraft were thus devoting great attention to the waters off the coasts of Scandinavia, the need arose to carry a heavier load of supplies to the Danish resistance movements than could be dropped by aircraft. The motor gunboats *Nonsuch*, *Hopewell* and *Gay Viking*, which had already made several trips to bring back special cargoes from Sweden², therefore sailed from Aberdeen on the 13th of January under Lieutenant-Commander B. Bingham, R.N.R. They safely delivered over forty tons of supplies to the Danes, and early in February left Gothenburg, aided by a Swedish ice-breaker, and loaded with valuable return cargoes. Unfortunately the *Hopewell* and *Gay Viking* collided in thick fog in the Skagerrak, and the latter had to be abandoned; but the other two gunboats finally got home safely. It was the last of the series of blockade-running operations from Sweden carried out under the direction of Commander Sir George Binney, R.N.V.R.

To return to the southern North Sea, minelaying by E-boats working from Dutch bases against our Thames-Scheldt and east coast convoys was at first severely restricted, because the Germans feared it would hamper the work of the midget submarines, on which they pinned considerable hopes. Thus early in the year the majority of E-boat sorties aimed to make torpedo attacks on our shipping. About two dozen of these craft were generally fit for operations, and they worked in groups of six to eight. On the night of the 15th-16th of January three strong groups came out. One of them searched the east coast route, but sighted nothing; another attacked a Thames-Scheldt convoy off Margate and damaged an L.S.T. so badly that she had to be beached, while the third found another convoy in the Scheldt approaches but was driven off by the surface escorts without doing any damage. The E-boats were out again in similar strength on three more nights before the end of the month; but they only managed to sink one more ship, and in the frequent clashes with our escorts and patrols they were generally worsted. On the 23rd of January the Tongue Sand Fort in the Thames estuary³ sank the S.199—a rare example of British coastal guns sinking an enemy surface warship.

The 'small battle units' were now present in various Dutch bases in considerable numbers⁴ but all types were much handicapped by

¹ These were U.3520, a Type XXI boat, sunk on 31st January, and U.1273, a Type VIIC boat, sunk on 17th February. See Appendix Y for details.

² See Part I of this volume, p. 292, regarding the earlier operations of these ships.

³ See Vol. II, p. 148 fn. 1, regarding the construction of these forts.

⁴ German records give the following strengths on the 20th of January: 87 'Linsen' 26 'Seehunds', 20 'Biber', 30 'Molch' and an additional 120 'Molch' in reserve inland.

the severity of the winter weather, and by ice in the narrow waters. In the first month of the year they suffered heavy losses, by no means all of which were attributable to our efforts. For example, on New Year's Day seventeen 'Seehunds' came out to attack our Antwerp convoys as they passed along the Belgian coast. We know that the destroyer *Cowdray* sank one early next morning off Zeebrugge, the frigate *Ekins* another off Ostend, and that two more scuttled themselves or grounded. Yet only two of the midget submarines returned safely to IJmuiden from the sortie, and all they accomplished was to sink one trawler. In addition to their forays in the Scheldt approaches the 'Seehunds' were now reaching out to the Kentish coast, and also working against our east coast convoys; and on the 23rd of January a conventional submarine (U.245) came across from Heligoland to the busy waters off the North Foreland. But, in the first month of the year, none of the special assault craft did appreciable damage, and the losses they suffered on almost every operation must have been a continuous drain on the enemy's human and material resources.

After the end of January 1945 the German records no longer give a day-to-day account of their E-boat operations; but we can none the less gather a clear general picture of the events which brought about a steady decline in their effectiveness. Bomber Command raided IJmuiden three times during the first half of February, and the six-ton bombs dropped by the Lancasters completely shattered the E-boat shelters; but the craft themselves had been widely dispersed and only one was destroyed. Nor did the large number of midget submarines present in the port suffer seriously.

We find the German North Sea Command protesting at this time against the restrictions placed on the use of the E-boats' best weapon, namely the mine, in favour of the midget submarines; and pointing out, quite correctly, that the mines laid by fast and elusive craft were far more dangerous to our shipping than the sporadic torpedo attacks of the 'Seehunds'. As a result the German Naval Staff agreed to a wider use of mines.

During the first part of February there was a lull in E-boat activity, largely because the bombers had created such havoc in their bases; but from the 20th to the end of the month they were out in force on almost every night, seeking our Antwerp and east coast convoys. Their most successful effort was on the night of the 21st-22nd, when one of the six groups at sea penetrated the screen of the east coast convoy FS.1734, sank two ships (3,889 tons) and damaged a third. No. 16 Group's air patrols had a busy night and made many attacks, but success eluded them. Nor were any of the encounters with our surface forces conclusive on this occasion. During the succeeding nights, however, our naval patrols accounted for S.167 and S.220 in two of the many close-range engagements which mark

this period. U.245 sank a large ship in convoy off the North Foreland on the 6th of February, but was damaged in the counter-attacks and returned to her home waters. It seems that the Germans failed to realise the possibilities of U-boat operations in those waters; for not until April did one reappear in them.¹ Forays by midget submarines and other special assault craft continued throughout February, and between the 22nd and 24th the 'Seehunds' did better than ever before; for they sank an L.S.T., a small cable ship and, in all probability, the French destroyer *La Combattante*.² Moreover all the eight boats involved returned safely to their bases on this occasion.

The comparative effectiveness of the various weapons used by the enemy is well shown by analysing our losses for the first two months of the year. Whereas torpedoes fired by E-boats and 'Seehunds' accounted only for seven ships sunk (13,019 tons) and another two damaged, the mines laid by E-boats sank fifteen ships (35,912 tons) and damaged four more. The 'Biber', 'Molch' and 'Linsen' caused us no losses at all. On the enemy's side only four E-boats were lost in the large number of operations they carried out; but fourteen 'Seehunds', sixteen 'Biber' and 'Molch', and ten 'Linsen' did not return. Plainly the whole genus of 'small battle units' was still failing to justify the large effort expended on it.

In February two new requirements had to be met by the Navy, both connected with the renewal of offensive operations on land. The first was a call from Twenty-First Army Group for help in transporting men and stores across the Rhine after we had gained a bridgehead on the great river's eastern bank. Admiral Burrough therefore created a special force, consisting initially of forty-five L.C.Ms and a like number of L.C.V.Ps³, which were transported in a Landing Ship Dock (L.S.D.) to a position off Ostend, whence they proceeded to Antwerp under their own power. They were then carried overland by army tank transporters; but the force did not actually carry out the duty for which it had originally been formed. Instead it acted as a mobile, waterborne element of the Royal Engineers and Royal Army Service Corps, for such purposes as towing heavy bridging pontoons into place in the fast flowing current. None the less the operation is of interest in that it was probably the first time that a naval assault force had been transported far inland to help in a river crossing.

The second new requirement was to prepare for the relief of the Dutch populace, which had been suffering appalling privations during the winter. We had long since established an organisation in

¹ See p. 278.

² The sinking of this ship was long attributed to a mine, but it now seems more probable that it was accomplished by a 'Seehund'.

³ These were the American equivalent to the British Landing Craft Assault (L.C.As).

Brussels under Admiral Sir Gerald Dickens for the purpose, and in February three flotillas of L.C.Ts were ordered to Antwerp to carry supplies to the Dutch cities as soon as the Germans withdrew from them. The work of this organisation, and of the British and American heavy bombers which dropped supplies of food, drew expressions of the warmest gratitude from the Dutch at the time of the liberation of their country.

The pattern of maritime operations in March was similar to that of the preceding months; for the Germans had managed to keep their E-boat strength at a figure of about forty, and had actually increased the number of 'small battle units' present in the Dutch bases. The E-boats attacked our east coast convoys, or laid mines on their routes, again and again; and a large number of close-range actions took place between them and our destroyers and coastal craft. Generally our escort and patrol craft succeeded in driving off the attackers; but it was still quite a rare event for an E-boat to be sunk in these fast-moving night encounters. On two occasions in March the harrying of the E-boats by Coastal Command aircraft did, however, cause them to abandon their sorties, and on the night of the 21st-22nd a Beaufighter of No. 236 Squadron sank the S.181 off Den Helder. The E-boats for their part only scored one important success during the month, when on the night of the 18th-19th they sank two ships in convoy FS.1759 off Lowestoft. In the same month the midget submarines and other 'small battle units' made sortie after sortie, and suffered repeated casualties, chiefly at the hands of our sea and air patrols. For example on the 10th of March a Beaufighter sank a 'Seehund'; next day the frigate *Torrington* accounted for a similar enemy off Ramsgate, and on the 13th she sank a second one on the opposite side of the Channel near Dunkirk. Nor was that the end; for motor launches accounted for two more midget submarines during the month, while the corvette *Puffin* added another to the heavy toll taken. On the other hand on the 13th a 'Seehund' sank a merchantman off the east coast, and on the 26th and 30th two small ships fell victim to others between the North Foreland and Orfordness. There is no doubt that, had the convoy escorts and our surface and air patrols been less strong, the midget submarines might have achieved substantial successes in attacks on coastal shipping.

On the night of the 11th-12th of March the Germans made a specially big effort against our shipping in the Scheldt, using all types of craft in considerable numbers. Their effort provided a very lively night for the defences, and the final count reveals that surface vessels, air patrols and shore guns accounted between them for thirteen 'Biber', nine 'Molch' and sixteen 'Linsen'. As not a single ship was even hit it was, from the enemy's point of view, a thoroughly unprofitable venture. Yet still he did not give up. In March most of

the losses we suffered were again caused by mines. They amounted to eleven ships of 31,939 tons, as against five of 9,235 tons sunk by torpedoes fired by all types of craft. We did not, however, realise this at the time, but believed that the midget submarines were accomplishing far more than was actually the case. This view was expressed at a conference held on the 6th of April, when the Commander-in-Chief, Coastal Command, ordered the two Fleet Air Arm Barracuda squadrons which were under his control to move from the south coast to stations in Kent and Norfolk; for we had found that comparatively slow aircraft were the most suitable for night patrols against such small and elusive enemies. Air Marshal Douglas also intimated that, if these reinforcements proved inadequate, he would ask the Admiralty for the loan of another squadron; but in the event this proved unnecessary.

In March and April the long-range minelayers of Bomber Command made many sorties to the Kattegat, Oslo fiord, the western Baltic and Kiel Bay. In addition, early in March, a small force of Mosquitos successfully mined the Kiel canal, and thereby delayed enemy traffic for several days. Most minelaying was now carried out by the 'high-level' method¹, especially where the enemy's ground defences were strong; but these tactics increased the risk of interception by night fighters, and it was actually they who shot down nearly all the twenty-three minelaying aircraft which we lost during 1945. By March the German minesweeping organisation, which had so far served them with outstanding efficiency, was at last breaking down—largely as a result of Coastal Command's attacks on the sweepers, and the bombing of the ship repair yards. The enemy was thus forced to send merchantmen to sea without proper escorts of sweepers, and his losses to mines thereupon rose sharply to twenty-six ships of nearly 70,000 tons, including two large liners, and two torpedo-boats. Another two U-boats were also sunk by mines.²

To continue the story of our air minelaying campaign to the end of the war, in April Bomber Command's effort was on about the same scale as in the two preceding months; but the enemy's losses from mines dropped heavily. This phenomenon must be attributable to the decline in seaborne traffic as the Allied armies advanced into Germany from the east and west. The last minelaying sortie set out from British bases on the 3rd of May, but was recalled; for by that time it was plain that further obstruction of the coastal waters would only embarrass ourselves.

During 1945 the losses inflicted by direct air attacks on shipping

¹ See Part I of this volume, p. 288.

² The liners were the *Hansa* (21,131 tons) and the *Hamburg* (22,117 tons); the torpedo-boats were the T.3 and T.5, both sunk on 14th March, and the U-boats were U.3519 (Type XXI), and U.367, sunk on 2nd and 15th March respectively.

surpassed those inflicted by minelaying for the first time; but the circumstances were then exceptional, and if the war be viewed as a whole there is no doubt that air minelaying was both the more economical and the more effective way of disrupting the enemy's coastal traffic. Between April 1940, when the campaign started, and the end of the war Royal Air Force aircraft laid no less than 48,148 mines in the Home Theatre only. They sank 762 enemy merchantmen and warships, as well as seventeen U-boats, and damaged a further 196 ships and seventeen more U-boats¹; while aircraft losses on minelaying sorties totalled only 533. Nor is there any doubt that minelaying provided by far the biggest contribution made by Bomber Command to victory at sea. The statistics for this final phase are tabulated below.

Table 34. *The R.A.F.'s Air Minelaying Campaign*

(Home Theatre Only)

January–May, 1945

Month 1945	Aircraft Sorties	Mines Laid	Enemy vessels sunk		Enemy vessels damaged		Aircraft Losses
			No.	Tonnage	No.	Tonnage	
January .	159	668	18	42,673	8	9,177	6
February .	291	1,354	23	25,642	13	43,490	9
March .	270	1,198	26	69,449	11	48,557	5
April .	271	1,362	16	9,636	7	16,727	3
May .	—	—	3	16,930	—	—	—
TOTALS .	991	4,582	86	164,330	39	117,951	23

NOTE: In addition to the above totals four U-boats were sunk and three damaged by air-laid mines during this period.

Before the end of March, after six weeks of heavy fighting, Field Marshal Montgomery's Twenty-First Army Group had driven the enemy back to the Rhine, and on the 24th he forced a passage across the river on a wide front south of the Dutch frontier. Meanwhile, further south, the Americans had captured the Rhine bridge at Remagen on the 7th, and quickly established themselves on the east bank. The naval landing craft mentioned earlier played a part in helping the Allied armies to cross the river.

Almost simultaneously with these favourable developments on the main front we received a sharp reminder that there was still a strong German garrison in the Channel Islands; for on the night of the 8th–9th of March a raiding party arrived in the port of Granville

¹ See Appendix YY. The figures for airlaid mines quoted here exclude those laid by the Fleet Air Arm, except when its aircraft were operating under R.A.F. control.

on the Gulf of St Malo, which we were using to discharge coal for the French population. The raiders took the weak local forces entirely by surprise, in spite of warning of unusual activity having been given by the local radar station and an American patrol vessel having engaged the enemy force. The Germans were able to do a good deal of damage to the little port, and towed out one small British collier. Although the enemy's success had no strategic significance, it was an unpleasant shock to Allied pride.¹ Subsequent investigation revealed that, apart from the local forces having been too weak to defeat an attack in such strength, there had been a misunderstanding with regard to the responsibility for the control of naval forces in those waters. Furthermore the early warning of enemy movements given by the local radar station was very slow to reach the headquarters of the Commander-in-Chief, Plymouth. The next attempt by Germans from the Channel Islands to cause us embarrassment was, however, a total failure; for a sabotage party landed on the Cotentin peninsula on the night of the 4th-5th of April were all quickly captured. Apart from the heavy guns on Alderney occasionally coming to life, and shelling targets on the mainland or passing ships, the German garrisons caused us no further trouble; but the British population of the islands suffered severe privations before their final relief was accomplished at the end of the war.

At the end of March Allied eyes returned to the Bay of Biscay, where French resistance forces were containing about 100,000 Germans in pockets around Bordeaux, La Rochelle, La Pallice, Lorient and Nantes.* We had long since prepared plans for naval forces to co-operate in the liberation of those ports, and French warships now assembled at Plymouth for the purpose. On the 1st of April they set up a blockade of the coast in co-operation with Coastal Command aircraft, in order to prevent German ships escaping to Spain. Next Rear-Admiral G. S. Rue of the French Navy sailed with the battleship *Lorraine*, the cruiser *Duquesne* and a number of flotilla vessels to support the land assault on the enemy pockets at the mouth of the Gironde, which had prevented us making any use of the port of Bordeaux ever since it had been captured eight months earlier. The operation started on the 15th of April and, after bombardments from the sea and a heavy raid by the U.S. Air Force, German resistance crumpled. Five days later the river was open to Allied shipping. The same task force next carried out a combined operation against the Isle d'Oléron at the mouth of the Charente, where a German garrison was obstructing the approaches to La Rochelle and Rochefort. The landings took place on the last day of April, and were

¹ A full account of the raid on Granville is to be found in Morison, Vol. XI, pp. 303-308.

* See p. 132 and Map 26.

quickly successful. Between the 6th and 9th of May the last enemy pockets on the mainland surrendered and the whole Biscay coast, from which our Atlantic shipping had been so grievously threatened ever since the summer of 1940, had returned to Allied hands.

On the main western front, by the early days of April a complete enemy Army Group had been encircled in the Ruhr, and the First Canadian Army had swung to the north to cut off all the German forces remaining in Holland. There were, however, still a considerable number of E-boats and 'small battle units' in the Dutch bases; but the latter had become a wasting asset, since replacements could no longer be sent overland from Germany. Only the 'Seehunds' had enough range to make the passage by sea, and those the Germans continued to send in. The advance on land brought us other advantages in the shape of numerous forward airfields, and from them the 2nd Tactical Air Force's Spitfires and Typhoons joined in the onslaught on shipping off the Dutch and north German coasts. No. 16 Group's aircraft were meanwhile still searching the coast as far east as the Elbe; but there was very little traffic, and only rarely did they locate a worth-while target.

In April the landing craft flotillas of Captain Pugsley's Force T continued their raiding forays against the Dutch coastal islands, and also moved far up the inland waterways to help the Army in river crossings. Thus when the land offensive into Holland was renewed, L.C.As and L.C.Ms were carried to Nijmegen to take part in an outflanking movement then in progress against the town of Arnhem. Craft wearing the White Ensign thus became quite a familiar sight on the rivers and canals of the Low Countries at this time, to the benefit of the military forces with whom they worked.

In spite of the increasingly grave predicament of the German forces cut off in Holland, the E-boats started April with several attacks on our east coast convoys, as well as minelaying sorties into the Scheldt; but the co-operation between our air patrols and surface vessels had now reached such a pitch of efficiency that almost every enemy foray led to a night encounter of the type which had by now become very familiar. Fierce clashes with our coastal force patrols took place on the nights of the 6th-7th and 7th-8th of April. In the former two E-boats (S.176 and S.177) were sunk, but two of our M.T.Bs were also lost, and a third suffered serious damage. Next night, in another running fight, two E-boats (S.202 and S.703) collided and both sank, while a third blew up on a mine off Ostend. The final action between the E-boats and our Coastal Forces in these narrow seas took place on the night of the 12th-13th of April, when the patrolling frigate *Ekins* and two of our M.T.Bs caught a group of them on their way to lay mines in the Scheldt approaches, and damaged one severely. Though the Germans still had fifteen E-boats

fit for sea, shortage of fuel and the growing disorganisation in their bases prevented them being used again. But the main cause of their lack of success in this final phase undoubtedly was the joint development by the Royal Navy and Coastal Command of really effective tactical counter-measures. We had fought these elusive enemies in the Channel and off the east coast since the early days of the war, and although the losses they inflicted were far less than those we suffered from U-boats, mines and enemy bombers¹, they forced us to put out a big defensive effort. Not until the last weeks of the war did we establish a firm mastery over them. The German E-boats were well designed and well fought, and had they been given support by larger vessels, and efficient air co-operation, they could undoubtedly have caused us more serious trouble.

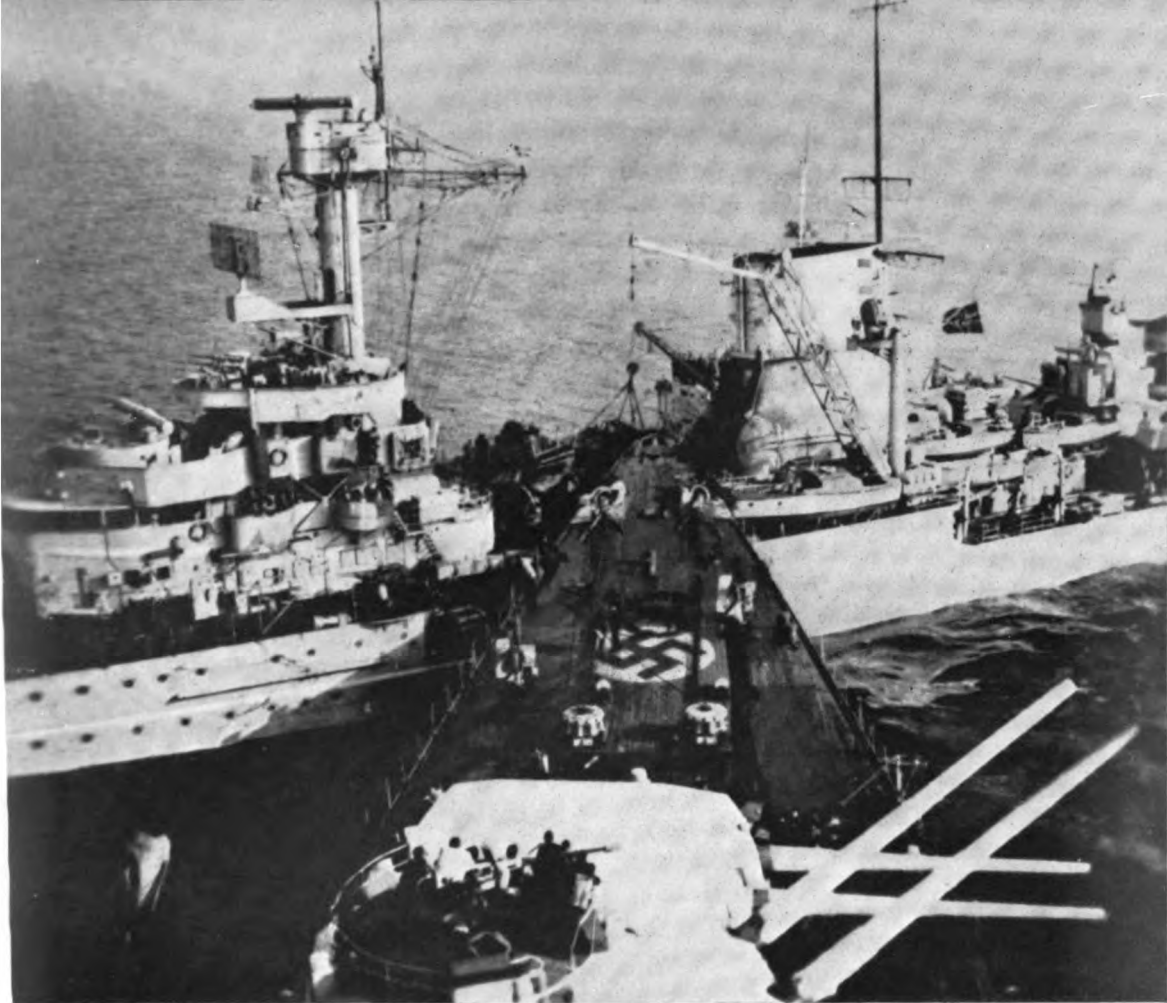
Although the E-boats faded out completely in the middle of April the 'small battle units', reinforced by 'Seehunds' sent from Wilhelmshaven to Ijmuiden, carried on almost to the end of the war. These two-man midget submarines, which were by far the most successful of the many types of special assault craft produced by the Germans, made no less than thirty-six sorties during April. Between the 9th and 11th they sank a large ship and damaged two others in the Channel. In addition two U-boats appeared off the North Foreland in the middle of the month. One of these was U.245, which we encountered in these same waters in February², and the other was a Type XXIII boat (U.2322). The former sank two ships out of a Thames-Scheldt convoy close off Ramsgate on the 18th, and successfully reached Bergen on the 9th of May; but the Type XXIII boat only damaged one ship. Having expended the two torpedoes, which were all that her class could carry, she then returned to base. In retrospect it is plain that, by making such a very half-hearted effort with their U-boats against the heavy traffic running to and from Antwerp, the Germans lost one of their best chances of causing us heavy losses.

The 'Seehunds' also achieved a few successes during the last month of the war; but our escorts and patrols took a continuous toll of them, and it is probable that the Navy and Air Force each sank four. In addition to their offensive sorties the midget submarines several times carried supplies to the besieged German garrison in Dunkirk.³ Considering the frailty of their craft the crews showed remarkable endurance; for they stayed at sea, often in foul weather, for as long as ten days. The 'Biber' and 'Linsen' also continued to

¹ See Appendices Z and ZZ. The total losses inflicted by E-boats with torpedoes, including those fired by Italian craft, were only 99 ships of 229,676 tons. Losses caused by mines laid by E-boats cannot be distinguished from those caused by other mines, but were almost certainly greater than the losses inflicted by torpedoes fired by them.

² See p. 271.

³ See p. 136.



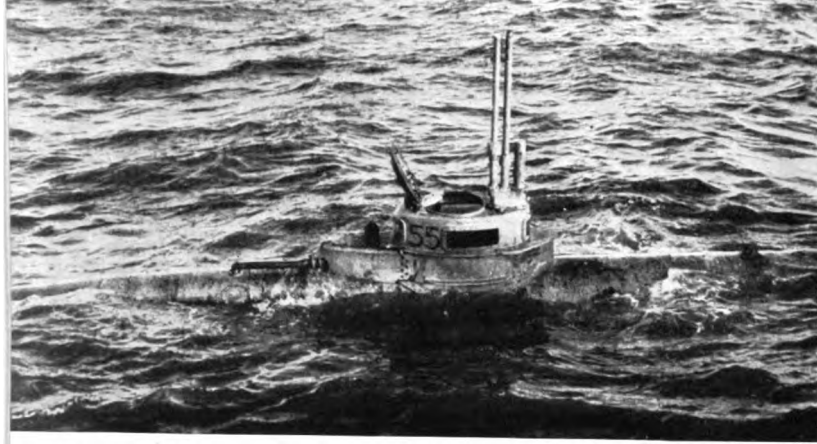
The German Navy in trouble

The collision between the German cruisers *Prinz Eugen* (foreground) and *Leipzig* in the Baltic, 15th October, 1944.

U.1061 (Type VII/F) ashore off Norway after attacks by Coastal Command aircraft of Nos. 407 and 224 Squadrons, 30th October, 1944.

(Photograph Franz Selinger)



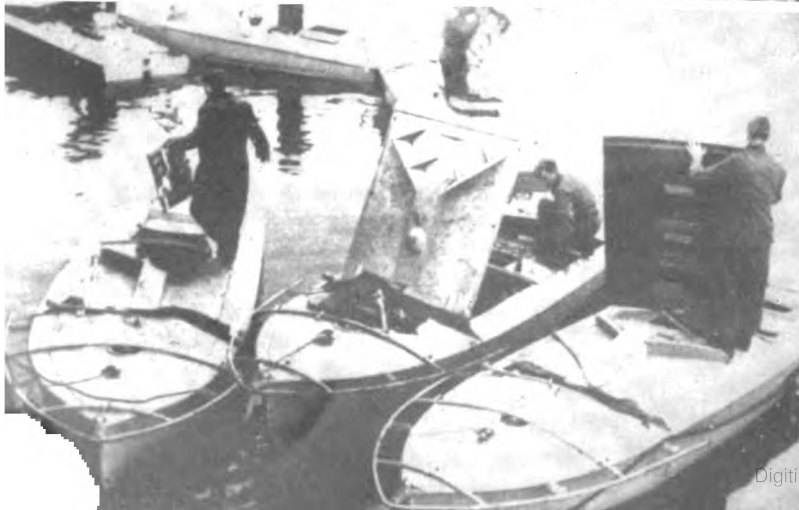


German 'Small Battle Units'

A 'Biber' one-man mid-gut submarine under way.



A 'Biber' driven ashore and captured.



'Linsen' explosive motor-boats preparing for a sortie.

See Appendix W (page 455) for principal characteristics of all these craft.



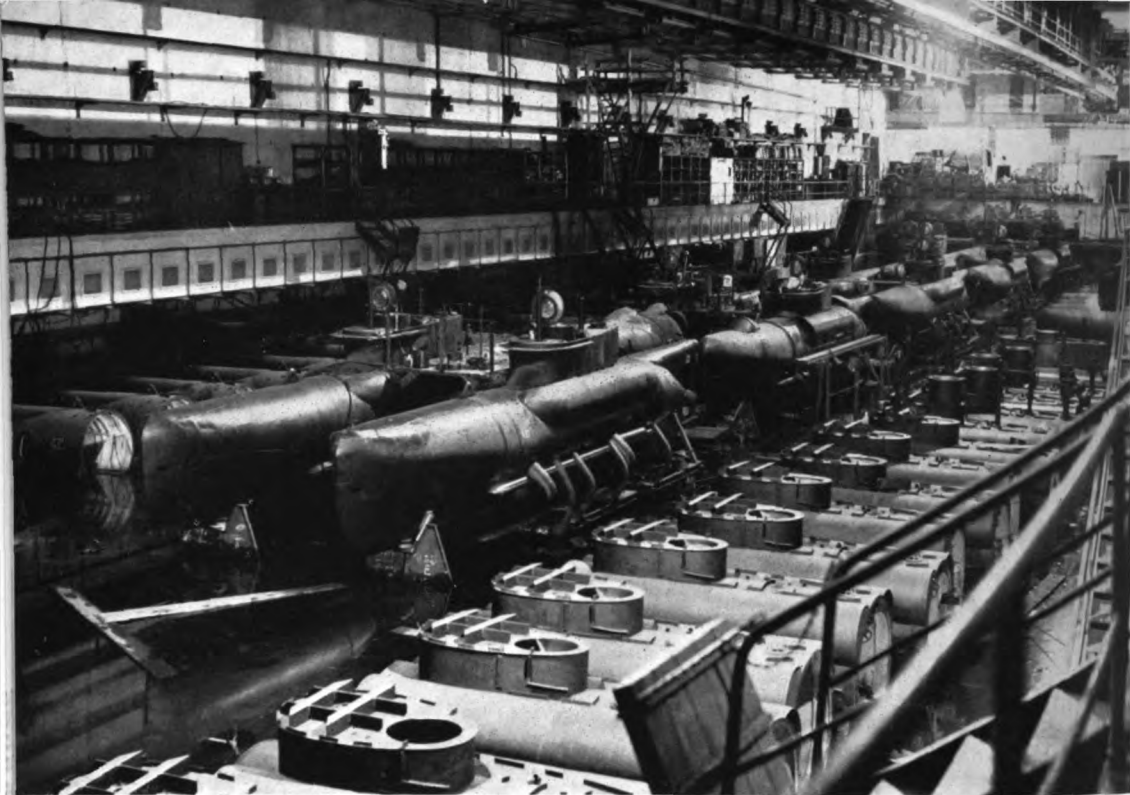
Heinkel bombers fitted with Hs.293 glider-bombs (under the wings) preparing to attack British shipping in the Bay of Biscay, 1944.

Taken at Merignac near Bordeaux.

U-boats destroyed in a floating dock at Kiel by Allied air attacks, 1944.

(Photographs Franz Selinger)





German U-boat Construction

A bomb-proof factory for the assembly of 'Seehund' midget submarines.
U-boats on the stocks at Bremen at the end of the war.



work in the Scheldt and its approaches; but they were consistently unsuccessful, and in every sortie they suffered heavily. We cannot mention all the many actions fought with them, but the frigates *Ekins* and *Retalick*, which had been engaged on this type of offshore patrol work since Normandy, were two of our most successful ships. The former can definitely be credited with the destruction of two 'Linsen' off Ostend on the night of the 11th-12th of April, and the latter with four others destroyed on the 20th-21st when, in their last operation of the war, a dozen 'Linsen' tried to reach Dunkirk with the intention of attacking our convoys from that base.

The results of this final phase of the German assault on our coastal traffic with light surface vessels and special assault craft are summarised below (Table 35). It will be seen that the E-boats were by far the most successful type, and that it was their mines rather than their torpedoes which caused the greatest proportion of our losses. Of the 'small battle units', into whose production the Germans put such a great effort, only the 'Seehund' midget submarine accomplished anything appreciable; and all types suffered very heavily indeed at the hands of our sea and air patrols and escorts, and from the weather. The experiences in the Channel thus confirmed those gained earlier in the Mediterranean¹—namely that special assault craft can never be substitutes for the conventional flotilla vessels which have always been among the most important instruments of maritime power.

Table 35. The German E-boat and 'Small Battle Unit' Coastal Offensive in the Home Theatre January-May, 1945

Type of Craft	Total Sorties	Losses	Allied ships sunk by:		Allied ships damaged by:	
			Torpedo	Mine	Torpedo	Mine
E-boat . . .	351	10	6-12,972	25-75,999	1- 1,345	7-26,408
Seehund . . .	142	35	9-18,451	Nil	3-18,384	Nil
Biber and Molch . . .	102	70	Nil	7- 491	Nil	2-15,516
Linsen . . .	171	54	Nil	Nil	Nil	Nil
TOTALS . . .	766	169	15-31,423	32-76,490	4-19,729	9-41,924

To turn to No. 18 Group's offensive against enemy shipping off Norway, at the beginning of 1945 there were two Strike Wings in the command, one equipped with Mosquitos and the other with Beaufighters, which normally worked from Banff and Dallachy in

¹ See pp. 101 and 111-112.

eastern Scotland.¹ The practice was to fly daily reconnaissance patrols off the Norwegian coast, and to follow them up with striking forces if suitable targets were reported. The German fighters based on Norway were, however, still capable of hitting back hard; and we soon found that, unless the attack aircraft were given strong fighter escort, they were liable to suffer serious losses—especially if they entered defended harbours. Unfortunately the only long-range fighters suitable for this task were the Mustangs, and they were in constant demand to escort the strategic bombers on their daylight raids into Germany. Thus at the beginning of 1945 Fighter Command could only allocate one Mustang squadron to escort No. 18 Group's Strike Wings; and that was quickly shown to be inadequate. During January the Group made five 'Wing Strikes'; but the loss of fourteen aircraft, mostly shot down by enemy fighters, drove home the need for stronger escorts. Towards the end of the month No. 18 Group's two squadrons of night-flying Halifaxes (Nos. 58 and 502) transferred their efforts from the landlocked waters off western Norway, where location of enemy ships by radar was almost impossible, to the more open waters of the Skagarrak. The successes achieved in January by the group's day and night anti-shiping squadrons amounted to the substantial total of twelve enemy ships (17,491 tons) sunk.²

February, however, proved a much less profitable month than January for No. 18 Group. Bad weather constantly handicapped the reconnaissance aircraft, and when the Beaufighter Strike Wing set out to attack an enemy naval force to the south of Stadlandet on the 9th it suffered a sharp repulse. In spite of a Mustang escort being present we lost nine Beaufighters for no return at all. Only three operations in wing strength took place during the month, and the group's achievements dropped to no more than four ships sunk and a like number damaged. Furthermore our losses, which amounted to thirteen aircraft, demonstrated yet again how vulnerable low-flying planes were to enemy fighters and anti-aircraft fire.

In March conditions became easier for the Strike Wings, since not only was the weather much better, but the Mosquitos had at last received satisfactory long-range fuel tanks, and a second squadron of Mustangs had become available to escort them. The day striking forces were now reaching out as far as the eastern entrance to the

¹ The squadrons forming the Strike Wings, which remained the same throughout the period January–May 1945, were as follows:

Mosquito Wing: Nos. 143, 235, 248 and 333
(Norwegian) Squadrons.

Beaufighter Wing: Nos. 144, 404, 455 and 489
Squadrons.

² See Table 36 (p. 282) for a summary of the successes obtained in the R.A.F.'s anti-shiping campaign in 1945.

Skagerrak¹, and both they and the night-flying Halifaxes attacked many German convoys. The outstanding success of the month came on the 30th, when no less than forty-five Mosquitos swooped into Oslo fiord and sank five ships. The rise of the group's score to nineteen ships (23,315 tons) sunk and fourteen damaged owed a great deal to the fighter escorts now being strong enough to enable the strike aircraft to penetrate into protected harbours.

April produced even better results. In addition to frequent sweeps by aircraft on roving patrols, fourteen Strike Wing sorties took place during the month—all of them accompanied by strong escorts of Mustangs. The Mosquitos made repeated attacks on anchorages in Oslo fiord, and on convoys moving through the Skagerrak and Kattegat; while the two Halifax squadrons ensured that enemy ships should not find safety by moving only in darkness, and themselves sank ten ships. By the end of April it had become plain that Germany's shipping organisation was disintegrating. There was now little movement off Norway or in the southern North Sea, but a great deal in the western Baltic, where a constant stream of ships was moving towards Kiel, carrying troops and refugees from eastern Germany, who were fleeing before the sweeping advances of the Russian armies. The Germans had, in fact, thrown in every possible warship and merchantman to try and rescue the threatened civil population, as well as their fighting men; and, although they suffered heavy losses, they achieved a substantial measure of success.² In April twenty-three ships totalling 48,610 tons fell to No. 18 Group's attacks, and the three Royal Air Force commands concerned in the offensive (Nos. 16 and 18 Groups of Coastal Command and the 2nd Tactical Air Force) between them accounted for no less than thirty-eight ships (50,726 tons) sunk and eleven others damaged.

On the 1st of May No. 18 Group's Beaufighter Wing moved from Scotland to stations in Norfolk, to join hands with No. 16 Group's Strike Wing; and in the final days they both used an advanced base in Holland for refuelling on their way to and from the southern Kattegat and Kiel Bay. The Typhoons of the 2nd Tactical Air Force, working from bases in north Germany, also now joined in the fray. Broadly speaking the Typhoons looked after the western Baltic, while Nos. 16 and 18 Group's Strike Wings swept repeatedly over the whole of the Skagerrak, Kattegat and Kiel Bay. With the pressure thus greatly intensified the R.A.F.'s anti-shipping offensive reached its climax, and in the first three days of May twenty-nine ships (66,229

¹ See Map 40.

² Between January and May 1945 over two million people were moved, firstly from the Baltic provinces and then from eastern Germany, into the zones which the Germans expected the British and Americans to occupy. See Karl Dönitz, *Ten Years and Twenty Days*, Chapter XXII (Eng. trans. Weidenfeld and Nicolson, 1959) for an account of this accomplishment.

tons) were sunk and about another dozen seriously damaged.¹ Though we must admit that the circumstances were very favourable to the attackers, the results achieved between the 1st of March and 3rd of May, 1945, shown in the next table, provide a convincing demonstration of the deadly capabilities of well trained air striking forces. Nor should the reader assume that the German defences were appreciably weaker in that period; for it is a fact that, almost to the end, both fighter opposition and anti-aircraft gunfire remained very formidable—as the loss of no less than eighty-seven aircraft on anti-shiping operations during the nine weeks makes plain.

Table 36. The Air Offensive against Enemy Shipping by Direct Attacks at Sea

(All Royal Air Force Commands—Home theatre only)

January–May, 1945

Month 1945	Aircraft Sorties	Attacks made	Enemy Vessels sunk		Enemy Vessels damaged		Aircraft losses
			No.	Tonnage	No.	Tonnage	
January .	1,116	447	14	18,421	Nil	Nil	26
February .	1,179	198	4	9,885	4	7,581	18
March .	1,780	472	44	24,090	14	41,800	28
April .	2,388	891	38	50,726	11	51,215	41
May (1st–4th)	1,377	868	29	66,229	12	66,714	18
TOTALS .	7,840	2,876	129	169,351	41	167,310	131

By the evening of the 4th of May the surrender of Germany appeared imminent, and the Admiralty stopped all attacks on surface ships except within twenty miles of the Norwegian coast. There was, however, to be no relaxation of the anti-U-boat effort; and as it seemed possible that the Germans might be planning to continue resistance in Norway, any surface ships sighted close off that country's coasts were still to be attacked. Finally, at 2.45 p.m. on the 7th of May, the Admiralty ordered all operations against shipping to cease. So ended an offensive the importance of which now seems to have been very great indeed. The forces which took part covered practically every arm of the Royal Navy and Royal Air Force—cruisers, destroyers, coastal craft and submarines, strike aircraft and mine-layers; and scrutiny of the enemy's records reveals many interesting facts regarding the successes achieved by the various weapons we employed. Thus it was the mines laid by our ships and aircraft which caused the greatest loss of German mercantile tonnage (604 ships totalling 660,533 tons), and also sank the greatest number of enemy

¹ In the same period the strike aircraft destroyed sixteen U-boats and damaged many others. The details of all successes in the final phase of the campaign against the U-boats are given in the next chapter.

warships (251).¹ Second to the mines in effectiveness against merchant shipping came the direct attacks at sea made by Allied aircraft (289 ships totalling 573,592 tons); and the chief brunt of that offensive was always borne by Coastal Command of the Royal Air Force. An interesting point is that attacks on merchant shipping by shore-based aircraft had found no place in our 1939 war plans.² Moreover, until 1944 Coastal Command was severely handicapped by the lack of suitable aircraft, and in the early years it suffered heavy losses for small returns. In the last eighteen months of the war, however, the command achieved striking results. Surface warships of the Royal Navy achieved their greatest successes against enemy merchantmen early in the war—before they had been virtually swept off the outer seas and oceans; and in that connection we should remember that the immobilisation of a very large German tonnage in neutral ports, and later of many Italian merchant-ships, arose almost entirely through the presence and pressure of the ships of the Royal Navy all over the world. Though most of the immobilised enemy vessels remained afloat, they were as great a loss to the enemy as if they had been sunk; and when neutral countries, and especially the United States, entered the war much of that tonnage was taken into Allied service. Thus the decline in sinkings and captures by the Royal Navy after 1941 is in reality a tribute to the completeness of our command at sea. Unlike the surface warships, our submarines continued to exact a fairly steady toll throughout the war; and the reason was that they were able to maintain and intensify their patrols close off the enemy's coasts. Our Coastal Forces accounted for comparatively few German merchantmen (40 ships totalling only 59,650 tons); but they sank no less than 70 enemy warships (mostly of small size). Air raids on enemy ports achieved only moderate successes against merchantmen or warships until 1944, when they were second only to the minelayers; but German fighter defences were by that time weakening. Study of the whole long campaign against Axis merchant shipping suggests that it is invidious to try and single out which service or which weapons accomplished the best results in relation to the effort made; for each of them achieved great successes, as well as suffering from periods of comparative sterility. What is beyond doubt is that, taken together, the ships and aircraft of the Royal Navy and R.A.F., in conjunction with those of their Allies, had by the 7th of May 1945 achieved the virtually complete destruction of the German Merchant Navy.

¹ Full details of German merchant ship and warship losses, by year and by cause, in the Home Theatre are given in Appendix YY. But the losses attributed in that Appendix to the forces of the U.S.S.R., though assessed from the best available British and German sources, must be treated with some caution.

² See Vol. I, pp. 35-37.

CHAPTER XXIV

THE BATTLE OF THE ATLANTIC

The Final Phase and the Surrender of the U-boats

1st January—8th May 1945

'You have given us their army, and we have given you their fleet'.

Field Marshal Sir Henry Wilson to
Admiral Sir David Beatty, 21st Nov-
ember, 1918.

In spite of the gradual mastery gained over the U-boats in convoy actions during the preceding five years, in spite of having successfully countered every change in enemy strategy and tactics, and in spite of having—to our certain knowledge—repeatedly inflicted very heavy losses on the submarine commerce raiders, the Admiralty had no illusions regarding the difficulties to be faced in the New Year of 1945. 'We are having' wrote the First Sea Lord to one of the Commanders-in-Chief 'a difficult time with the U-boats. There is no doubt that this "Schnorkel" has given them a greater advantage than we first reckoned on . . . The scientists have not yet caught up, and the air are about 90 per cent out of business. The asdic also is failing us . . . in confined waters where there is a strong tidal stream.' Though there were in fact several circumstances which, had they been known in London, would have mitigated such anxieties, there was one which, had it been known, would certainly have aggravated them. This was that the total size of the U-boat fleet was still increasing, and at a considerable rate. Whereas during the latter part of 1944 it had never exceeded 432, and some eighteen new boats were commissioning every month, in January 1945 no less than thirty new boats were put into service, and in March the German under-water fleet reached its peak strength of 463 boats. Furthermore the wastage suffered by the enemy from all causes dropped from about eighteen boats per month in 1944 to twelve; and almost all the new boats completing were of the new pre-fabricated and greatly improved models (Types XXI and XXIII).¹ In January the actual

¹ See Part I of this volume, pp. 17–18, and Appendix X, regarding the performance of these boats.

output of these latter types reached the formidable figure of twenty-eight. Not until March, when the Allied armies crossed the Rhine, did the bombing of the U-boat yards and bases have an appreciable effect on production; and in that month all the trends in the balance sheet of profit and loss began at last to move decisively in the Allied favour.

At the beginning of 1945 the Germans were still optimistic regarding the prospects for their inshore campaign—in spite of the handicap imposed by the need for the U-boats to remain continuously submerged, and so make very slow passages to and from the focal areas of our shipping. We for our part had adopted a variety of counter-measures—strategic, tactical and technical—to deal with the new situation. In the first place many more surface escort groups were concentrated in our home waters, and every convoy was given not only a powerful close escort, but was also supported by one or more additional groups which trailed the merchantmen or patrolled the busiest waters continuously. Table 37 (p. 287) shows how on the 1st of January 1945 we had no less than 426 escort vessels of all types deployed on such duties; and as many as thirty-seven groups, each consisting at full strength of six to eight ships, were allocated to the Western Approaches command alone. Fourteen of these groups belonged to the Royal Canadian Navy, which thus came to carry as large a share of the struggle for control of Britain's coastal waters as it had borne in the Atlantic convoy battles of earlier phases. The majority of the ships in the escort and support groups consisted of the new frigates, large numbers of which had been completed in British yards in 1943–1944, while others had come across from America under Lend-Lease¹; but there was still a good sprinkling of the destroyers, sloops and corvettes which had been in the struggle since the early days. The figures quoted, and the table below, do however show the prodigious strength which comparatively few enemies could force us to deploy; for there were rarely more than fifty U-boats at sea at any one time, nor more than about three dozen actually on patrol in our coastal waters.

Coastal Command had to face quite as difficult problems as the naval authorities responsible for the conduct of the campaign; for although in January out of a total strength of thirty-two anti-submarine squadrons twenty-nine and a half, comprising 420 aircraft, were stationed in Britain or in Iceland, this was not enough to patrol the transit routes and also give continuous air escort to all the many

¹ In all 193 frigates were built for the Royal Navy, namely:

64 'River' class, all built in Britain except 8, which were built in Canada.

78 'Captain' class, all built in U.S.A. and transferred under Lend-Lease.

21 'Colony' class, all built in U.S.A. and transferred under Lend-Lease.

23 'Loch' class, all built in Britain.

7 'Bay' class, all built in Britain.

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THE BRITISH ISLES

Showing the Inshore Campaign
of the U-boats
31st August 1944 - 8th May 1945



U-Boat sunk - known position... +
 " " - approx. area... (326)
 Deep laid minefields..... (hatched area)
 For dates of U-Boat sinkings
 see Appendix Table



ESCORT VESSEL STRENGTH AT HOME 287

Table 37. *The Strength and Distribution of Escort Vessels in the Home Naval Commands—1st January, 1945*

(Home Fleet Excluded)

Based at	Number of Escort Groups	Strength in:				Total
		Destroyers	Frigates	Sloops	Corvettes	
WESTERN APPROACHES COMMAND						
Londonderry . . .	20 (14 RCN)	8	73	—	50	131
Belfast	6	—	36	—	—	36
Liverpool	6	10	14	6	10	40
Liverpool Escort Pool	—	—	—	1	14	15
Greenock	5	6	12	3	12	33
Greenock Escort Pool	—	2	2	—	1	5
Western Approaches (unallocated)	—	—	7	4	2	13
NORE COMMAND						
Harwich	16th and 21st Destroyer Flotillas	33	15	—	19	67
Humber	—	2	—	—	—	2
OTHER COMMANDS						
Rosyth	Rosyth Escort Force	21	—	—	—	21
Rosyth (unallocated)	—	11	—	—	—	11
Portsmouth	1st Destroyer Flotilla	5	5	—	9	19
Plymouth	8th and 15th Destroyer Flotillas	12	1	2	18	33
TOTALS		110	165	16	135	426

NOTE: This table excludes Light Fleet and Escort Carriers, of which 28 were in the Western Approaches Command. The majority were employed on trials and training, and on aircraft ferrying duties.

convoys which passed in and out of our coastal waters. The release by the Americans of two Liberator squadrons and a flight of aircraft fitted with the Magnetic Air Detection (M.A.D.) equipment¹ from the quiet waters off South America and the Moroccan Sea Frontier² enabled our transit patrols to be strengthened; but this did not greatly mitigate the shortage of convoy air escorts. The result was that the Admiralty and Coastal Command adopted a compromise policy, whereby convoys were only given escort when passing through the most dangerous zones, and patrols were flown over the inshore waters where the U-boats most commonly lay in wait. The Coastal Command aircrews carried out an immense amount of unrewarding flying at this time, and this led to the acceptance of a large number of both visual and radar reports of U-boat 'Schnorkels', which we now know to have been without substance. A great many of these false

¹ See Part I of this volume, pp. 246-247, regarding this device, and its successful use in the approaches to Gibraltar.

² See Part I of this volume, p. 47, regarding this American enclave within the zone of British strategic responsibility.

sightings must have been on the miniature water spouts, or 'willy-waws', mentioned earlier.¹ Post-war research has established that between September 1944 and May 1945, when the daily average number of U-boats in our home waters was twenty-nine, only eighty-eight of the 216 sighting reports made by our aircraft can have been genuine.

The laying of minefields in both the south-western and north-western approaches to these islands, which we had started in the previous autumn², was intensified in the New Year, when shipping losses in the Irish Sea began to cause concern. The broad policy was to lay deep fields on the main convoy routes, off focal points in the Irish Sea and on shallow patches which U-boats might use to fix their positions. We had plenty of mines available, but were very short of ships equipped to lay them. The *Ariadne* was therefore recalled from the Pacific to join the *Apollo* and *Plover*, and the Dutch Navy lent the *Willem Van der Zaan* for the same purpose. Those four ships worked almost continually in the Irish Sea and the English Channel, and before the end of the war they had laid 17,000 mines. We now know that only three U-boats were destroyed in the various deep minefields during 1945³; but it seems reasonable to suppose that the minefields cramped and restricted the U-boats' movements—the more so because they were now staying continuously submerged.

To turn to technical developments, we were now using three-centimetre as well as ten-centimetre radar; but the greater sensitivity of the shorter wave set produced new problems. Apart from small objects, such as navigational buoys, there is always a good deal of flotsam in inshore waters, especially in time of war; and when such objects produced echoes on the radar screens the operators were liable to report them as contacts with U-boat periscopes or 'Schnorkels'. Moreover the Germans had now fitted search receiver aerials on the Schnorkel funnels and, although they were only designed to cover the metric radar band, they would respond to a centimetric set if the transmitting source was strong and fairly close. This was enough to alert the U-boat crews, whose custom it was to stop 'Schnorkelling' and go deep immediately such warnings were received. Thus our escort vessels and air patrols found that radar contacts no longer enabled them to bring off surprise attacks against enemies at periscope or Schnorkel depth.

Our main anti-U-boat weapon for use by both surface ships and aircraft was still the 300-pound depth charge; but most ships were

¹ See p. 178.

² See pp. 181–182.

³ These were U.275 on 10th March in the Channel, U.260 on 12th March off southern Ireland, U.1169 on 5th April in the St George's Channel.

Map 41 shows the positions in which U-boats mentioned in this chapter were sunk.

also fitted with the ahead-throwing weapons known as 'Hedgehog' and 'Squid', whose genesis dated to the early days of the war when the need to eliminate the consequences of loss of asdic contact during the final approach first became apparent.¹ By night our aircraft still relied mainly on radar to gain contact, and on the Leigh Light to illuminate the target; but a new low altitude bomb sight, which made surprise attacks by radar possible without using any illuminant, was on the way²; and the 600-pound anti-submarine bomb had entered service as an alternative to the aircraft depth charge. We were also making increasing use of 'Sono' buoys which could be dropped by aircraft and then kept an automatic hydrophone watch, transmitting the propeller noises from a submerged U-boat to the patrolling aircraft by wireless. These were an American development and, used with the small acoustic torpedo which could be dropped to 'home' on the U-boat³, they had established themselves firmly in favour as an increasingly important weapon in the armoury of the anti-submarine aircraft.

Early in the New Year the First Sea Lord sent a gravely worded memorandum to the Chiefs of Staff Committee. He anticipated a renewed offensive on a substantial scale in February or March, with large numbers of the new types of U-boat loose on the Atlantic convoy routes as well as in our coastal waters. Shipping losses might, he considered, even surpass those suffered in the spring of 1943⁴; and if that happened the land operations in Europe were bound to be adversely affected. The Commander-in-Chief, Coastal Command, reported that if the Admiralty's forecast was accepted he would need very substantial reinforcements, which he estimated at twenty-seven additional squadrons (nine of them from the Fleet Air Arm); and he put forward a proposal to try to block the transit route north of the Shetlands by concentrating half a score of escort groups there, and maintaining continuous air patrols by night as well as by day. The Admiralty's view was that the most important need was to drive the U-boats out of the Irish Sea, and the proposal to swamp the northern transit routes with sea and air patrols was therefore deferred. Nor did Coastal Command receive reinforcements on the scale suggested; in February its total strength reached its peak with fifty-four squadrons, comprising 793 aircraft, of which thirty-eight and a half squadrons (528 aircraft) were employed on anti-submarine duties.

After considering the Admiralty's forecast the Chiefs of Staff called

¹ See Vol. I, p. 480, regarding the introduction of the 'Hedgehog'.

² This sight did not become operational until March 1945 and then only in two squadrons. Moreover, as no illuminant was used to identify the target, it could only be employed in waters where there was no possibility of encountering friendly surface ships or submarines.

³ See Part I of this volume, p. 24.

⁴ See Vol. II, Chapter XIV.

for a review and for recommendations from their Joint Planning Sub-Committee. Although this latter body did not altogether accept the views expressed by the First Sea Lord, they agreed that the departure of the 300 destroyers and escort vessels due to leave for the Far East should be held up, that air minelaying in the western Baltic and on the U-boat transit routes through the Kattegat should be intensified, and that every opportunity should be taken to attack the enemy's minesweepers and his coastal shipping. They further recommended that, without a major change in our bombing policy, a proportion of the effort should be directed against the U-boat assembly yards in Hamburg and Bremen and also the enemy's operational bases. These recommendations were considered by the Combined Chiefs of Staff when the 'Argonaut' Conference opened at Malta at the end of January. They then decided to review the matter on the 1st April, by which time they would know whether the anticipated U-boat offensive was developing. Meanwhile the recommendations of the British Joint Planners were to be put in hand.

In retrospect it may seem surprising that such grave forebodings should have arisen so near to the end of the war; but the menace represented by the new U-boats, and especially by the 1,600-ton Type XXI, was very real—if they got to sea in large numbers; and the Admiralty could hardly have been aware of the full extent to which our bombing raids and air minelaying had disrupted the German programme for completing the new boats and training their crews.¹ We were again not sinking U-boats nearly as fast as new ones were taking the water; and several of our most faithful weapons, such as short-wave radar and the asdic, had undoubtedly lost much of their effectiveness. Moreover the enemy's tactics of continuous submergence prevented the U-boats using their wireless; and this deprived the Admiralty's Submarine Tracking Room, on whose efforts so much depended, of one of its best sources of Intelligence. It is, however, now plain that the prospects were actually much less black than appeared at the time. In the first place the new types of U-boat were not yet in service in significant numbers; and the earlier types of Schnorkel boats had lost so much of their mobility through having to remain continuously submerged that only rarely could they bring off an effective attack. Secondly Allied reserves of shipping, and production capacity in America, were so great that we could

¹ At the end of January 1945 it was clear to the Germans that only one or two Type XXI boats, instead of the planned total of 40, would be ready for operations in February; and not until April would larger numbers be available. Post-war research has revealed that the biggest factor in delaying the production of the new types of U-boat was the breaching of the banks of the Dortmund-Ems and Mittelland canals by Bomber Command Lancasters in November 1944. U-boat sections were too big to transport by road, or rail to the assembly yards at Hamburg and Bremen, and the closure of the canals therefore caused the output of completed boats to drop from 14 in October to 5 in November 1944.

face even substantial losses with an equanimity far removed from our condition in 1943. It thus seems that, if there never was any real likelihood of the land campaigns being seriously handicapped, let alone halted, through losses at sea, the margin of time between success on land and increased peril at sea may have been as little as a few months. Had the Germans been able to continue production of the new U-boats on the scale achieved in January 1945 into the following summer, something like the situation envisaged by the Admiralty might well have arisen. It was the victories on land which prevented that coming to pass.

In January twenty U-boats left the Norwegian bases outward bound. They included the first Type XXIII boat (U.2324) and also one which came across to the waters around the North Foreland—where no U-boat had appeared since 1940.¹ By the end of the month there were thirty-nine in our home waters and five on more distant patrols. German hopes centred chiefly on attacking our traffic in the Irish Sea, into which six boats penetrated either by the North Channel or around the south of Ireland. The Commander-in-Chief, Western Approaches, had however ordered all ships over 1,000 tons into convoy, and had sent six support groups, additional to the normal surface escorts, into those waters. No. 15 Group of Coastal Command was meanwhile flying constant patrols over the whole area; but in retrospect it seems clear that better results would have been achieved had the aircraft been employed on escorting the convoys. In spite of the great concentration of anti-submarine forces in the Irish Sea, between the 9th and 11th of January U.1055 sank three ships and got away; but U.482 was less lucky. On the 15th she sank a merchantman and damaged the escort carrier *Thane* off the entrance to the Clyde. Next day the 22nd Escort Group gained contact, and destroyed her after a very persistent search and many depth charge attacks. After sinking a ship off the Welsh coast and another in Liverpool Bay U.1172 rashly attacked and damaged the frigate *Manners* off the Isle of Man on the 26th. Two escort groups promptly closed her position, and a five-hour hunt ended with her destruction. The very next day, and in the same waters, two ships in convoy HX.332 were torpedoed; but retribution quickly descended on the attackers, for the frigates *Tyler*, *Keats* and *Bligh* sank U.1051 that evening, while her colleague (U.825) was so severely damaged that she started off homewards at once.² Instances of rapid attack and counter-attack, such as led to these successes, were typical of the period. Only when an enemy had revealed his presence by torpedoing a ship could the escorts establish

¹ This was U.245. As her operations were intermingled with those of the midget submarines, working from Dutch bases, they have been dealt with together. See pp. 271 and 278

² See Map 41.

a reliable datum point from which to start their search; but once they knew where to seek for their adversary his prospects of survival were not good.

In the English Channel the six U-boats present during January did little damage, and on the 21st U.1199, which had attacked a Thames-Bristol Channel convoy off Land's End, was sunk by the convoy's escorts. Two other U-boats vanished without trace during the month—one (U.650) in the Channel and the other (U.1020) off the east coast of Scotland. Thus the first month of the New Year saw the destruction of six U-boats, four of them by surface ships; while they themselves had accomplished no more than the sinking of seven ships (30,426 tons). From the Allied point of view this was by no means an unsatisfactory exchange rate. What was less satisfactory was that neither on the old transit route around the north of Scotland, nor in the Skagerrak and Kattegat and the waters off south-western Ireland, through which all U-boats had to pass on their way to and from their operational areas, did our air patrols achieve any successes.

February saw a very large increase in sailings of outward-bound U-boats. No less than forty-one, including another Type XXIII, put to sea, compared with only twenty in January; and by the end of the month there were fifty-one on patrol in our home waters. Here, at first sight, was substantiation for the concern recently expressed by the Admiralty; yet the enemy scored fewer successes than in January and suffered double the losses. Even in the Irish Sea the eight U-boats on patrol only sank three small ships. It was, however, in the English Channel that the month produced the greatest activity; and there a whole series of attacks by U-boats and counter-attacks by the escorts and by the reinforced support groups took place. The seven U-boats present sank between them five merchantmen (14,878 tons), all but one of them in convoy, and also two escort vessels; but they paid dearly for those successes. On the 24th U.480, which had just attacked a convoy off Land's End, was detected and sunk by the 3rd Escort Group after a six-hour hunt. At dusk on the same day a Leigh Light Warwick of No. 179 Squadron homed on to a radar contact, sighted an actual 'Schnorkel' funnel, and attacked by moonlight. We now know that she destroyed U.927. Three days later, off the Lizard, the 2nd Escort Group detected U.1018 shortly after she had attacked a convoy, and an unusually short hunt ended in her destruction. That same afternoon, in the same waters, a U.S. Naval Liberator sighted a wake and called up the escort of a nearby convoy. No less than three escort groups closed in, and after a twelve-hour pursuit they accounted for U.327. The rapid reinforcement of our sea and air patrols and escorts in the Channel thus produced a quick return, with four enemies destroyed; and the U-boats fared equally badly elsewhere around our coasts. Thus on the 4th of February the 23rd

Escort Group, while exercising off Lough Foyle, detected an object on the bottom, identified it correctly as a U-boat and made a series of attacks which marked the end of U.1014.

On the east coast we suffered few losses in February, nor were the new Type XXIII boats noticeably more successful than the older models. On the 16th the 9th Escort Group, while patrolling off the Moray Firth located and destroyed U.309; and four days later, off southern Ireland, U.1208, which had just attacked the Irish Sea section of a Halifax convoy and sunk one of its escorting corvettes, was located and quickly destroyed by the 22nd Escort Group. But perhaps the most remarkable event of the month was a patrol carried out to the north of the Shetlands by the 10th Escort Group's four frigates (the *Braithwaite*, *Loch Dunvegan*, *Loch Eck* and *Bayntun*) under Commander P. W. Burnett. They sailed from the River Foyle in Northern Ireland towards the end of January and, after calling at Scapa, gave support to several WN. and EN. convoys which were passing round the north of Scotland.¹ On the 2nd of February the Commander-in-Chief, Rosyth, who was directing the group's operations, ordered the frigates to patrol in the eastern approaches to the Shetlands-Faeroes channel; and this quickly proved a profitable hunting ground. Early on the 3rd, while carrying out a sweep, the *Bayntun* gained a good asdic contact. She and the *Braithwaite* attacked with 'Hedgehogs', but it was the *Loch Eck's* first and only 'Squid' attack which brought much wreckage to the surface, and marked the end of U.1279. Then followed several days of strong gales and a number of fruitless searches. The frigates refuelled in Scapa on the 7th of February and then resumed their patrol in the same waters as before. There they were soon joined by another escort group—the 9th. On the afternoon of the 14th the *Bayntun* again reported that she had a good asdic contact. The other ships joined her, and between them they made a succession of attacks with their ahead-throwing weapons. Not until after dark did unmistakable evidence of success, in the shape of four survivors, appear. They all died soon after being picked up, but proof had been gained that U.989 had been destroyed—most probably by the *Loch Dunvegan's* three attacks with her 'Squids'. In spite of continued heavy weather the group maintained its patrol in the same general area, and on the evening of the 17th the *Bayntun* reported for the third time that she had a promising contact. On this occasion it was she herself who, deservedly, carried out the first attack—and it produced an unmistakable hit with a 'Hedgehog' projectile. We now know that it was U.1278 whom she destroyed. On the 20th the group re-entered the river Foyle, well satisfied with their achievements. There were several remarkable features about this

¹ See Map 41.

patrol. In each case the initial contact was gained by the *Bayntun*; all three successes were achieved with ahead-throwing weapons, and comparatively few depth charges were dropped. Finally the results suggested that, for all our experience that convoy escorts were more effective U-boat killers than patrolling warships or aircraft, the proposal which Air Marshal Douglas had recently put forward to block the northern transit route with continuous air patrols working in co-operation with half a score of escort groups might have proved rewarding.¹ The losses suffered in February by the U-boats working in our home waters, or passing to and from them by the transit routes, thus reached the very satisfactory figure of twelve. Nine of them fell to the Navy and one to Coastal Command, while one was shared between sea and air forces, and one was lost by accident; and in return for these heavy losses the U-boats had sunk no more than eleven merchantmen (28,920 tons) and three of our escort vessels.

It has already been told how Bomber Command's air minelaying forced the Germans to close the U-boat training area in Danzig Bay early in the year.² The Germans then shifted some training flotillas to Lübeck Bay, while more advanced trials and training were carried out in Oslo fiord. In February, in accordance with the directive issued by the 'Argonaut' Conference, Coastal Command stepped up its sorties against enemy coastal traffic and minesweepers in the Kattegat and Skagerrak and also instituted night patrols by Leigh Light Liberators. On the night of the 3rd-4th a strong force of Liberators also swept the waters around Bornholm Island, where we knew that U-boat training had been taking place since the closing of Danzig Bay.³ The enemy's records do not reveal what damage was done to their training flotillas; but we found that low-flying Liberators were very vulnerable to the anti-aircraft fire of the numerous small surface vessels encountered. This, and the fact that the Russians protested that their own submarines were working in those waters—a fact of which we were totally unaware—prevented any repetition of such attacks until March. In that month the Russian armies captured Danzig and Gdynia; but the Germans had already transferred all their U-boat training to the western Baltic and Norway, because of the danger from our air-laid mines.

In March thirty-seven U-boats sailed outwards from Norway, and another twenty-eight came up from Kiel to the Norwegian bases. These latter included a third Type XXIII boat, and also the first of the Type XXIs to become operational—namely U.2511. By the end

¹ See p. 289.

² See p. 269 and Map 40.

³ See Map 40.

of the month fifty-three were at sea in our home waters, and another eight in distant areas. In the Irish Sea U.1302, one of the five enemies present, sank two ships in an SC convoy on the 2nd. There followed a long pursuit by several escort groups. Two of the three U-boats involved got away; but on the 7th Canadian frigates destroyed U.1302. Two days later a Liberator carried out an attack on U.1019 in the most up-to-date manner, using sono buoys and acoustic torpedoes, and then called up surface ships; but the long search which followed produced no conclusive evidence of a kill, and in fact the U-boat escaped. After these incidents no more merchantmen or U-boats were sunk in the Irish Sea until April.

In March it was once again in the Channel that the U-boats suffered most severely, and at the end of the month the enemy actually withdrew them all from the western end. Instead he stationed them off the Scilly Islands and southern Ireland. This suggests that our counter-measures were more successful than we realised at the time, and shows how very far the Germans were from opening the offensive on the convoy routes anticipated for this same month by the Admiralty. On the 8th U.275, which had come up-Channel from St Nazaire, attacked an outward convoy and sank one ship; but two days later she met her end in the deep minefield which we had laid off Beachy Head. Next day U.681 accidentally grounded on the Scillies and sustained such damage that she made for the Irish coast. An American Liberator, however, sighted and attacked her very soon after she broke surface, and the U-boat captain thereupon abandoned his attempt to reach neutral waters and scuttled his ship. On the 12th the 2nd Escort Group detected U.683, which was proceeding down-Channel off the Lizard and destroyed her; and on the same day U.260 was damaged in the deep minefield we had laid off the Fastnet Rock. She scuttled herself two days later. Next, on the 26th, the frigate *Duckworth*, leader of the 3rd Escort Group, accounted for U.399, which had just sunk a small coaster close off the Lizard. The group continued to patrol the same waters, and three days later the *Duckworth* detected and destroyed U.246. We lost five merchantmen, totalling some 25,000 tons, in the Channel during March; but the same number of enemies were destroyed—most of them by our surface escorts and patrols. In other coastal waters the U-boats fared just as badly. All three which were on patrol off Northern Ireland during the month were accounted for, at the cost of only one merchantman¹; and off the coast of Scotland U.714 had a very short life. She arrived on the 10th, sank a minesweeper and a small

¹ These were U.296 possibly sunk by a Liberator of No. 120 Squadron on 22nd March (a success credited until recently, on very slight evidence, to a Wellington of No. 172 Squadron); U.1003 which scuttled herself on 23rd March after accidentally colliding with an R.C.N. frigate; and U.722 sunk by the 21st Escort Group on 27th March.

merchantman, but then encountered the newly-commissioned frigate *Natal*, of the South African Naval Forces, which sent her to the bottom with a promptitude which would have done credit to a much more experienced crew.

The cruise off western Scotland by the frigates of the 21st Escort Group between the 19th of March and 1st of April merits special mention. The group worked in two divisions during the greater part of the period, the 1st Division in the northern part of the Minches as far as Cape Wrath, and the 2nd Division in the southern part of the same channel. To begin with, the frigates gave support to several convoys passing through those narrow waters; and in between the convoy passages they swept and searched every bay and inlet where a lurking U-boat might lie. On the 27th the 1st Division (the *Conn*, *Rupert* and *Deane*) picked up an asdic contact, and after many 'Hedgehog' and depth charge attacks they obtained unmistakable evidence of success. This marked the end of U.965. On the same day the 2nd Division (the *Fitzroy*, *Redmill* and *Byron*) accounted for U.722; and on the 30th the 1st Division, though they could not at the time produce irrefutable evidence, did, we now know, destroy U.1021 with their 'Hedgehogs' and depth charges. Altogether, as Admiral Horton remarked, the cruise was a very creditable affair; and the important shipping routes through the Minches were swept wholly clear of U-boats.

In March, off the west of Ireland, we tried the experiment of laying a barrier of sono buoys, which was then constantly patrolled by aircraft, including some fitted with M.A.D. equipment. The experiment was unsuccessful, but in fact we now know that no U-boat crossed the barrier squarely while it was in operation. The project was repeated in the last week of the war but it never got a really fair trial.

It is possible that U.905 and U.1106, which disappeared at this time, were sunk by Coastal Command Liberators patrolling the transit route to the north of Scotland; but we have no definite evidence of such successes. Few Liberators could as yet be spared to attack U-boats passing through the Kattegat and Skagerrak on their way from Kiel to the Norwegian bases, and no successes were achieved in those waters in March. We did, however, make two more night sweeps off Bornholm—this time with the agreement of the Soviet Navy. There were many attacks on surfaced enemies, but, as on the previous occasion, it has proved impossible to assess their results. At the very least they must have disrupted the training of the U-boat crews.

The final score for March amounted to fifteen U-boats sunk, eleven of them by surface vessels or by mines laid by them, and four by aircraft; and all that the enemy's considerable effort in our coastal

waters had accomplished during the month was the sinking of ten merchantmen (44,728 tons) and three small warships.¹

We must now turn to the story of the overseas U-boats during 1945. All the boats involved were of the large (Type IX) class, which were in any case unsuitable for inshore operations. By scattering about a dozen of them in the North Atlantic for weather reporting, off the American eastern seaboard, and to the west of Gibraltar, and allowing boats on passage to or from the Far East to make widely dispersed attacks, the U-boat command hoped to force us to divert a proportion of the sea and air forces which we had concentrated at home to deal with the inshore campaign. It was natural that such a policy should produce occasional successes for the enemy. Thus in January U.1232 sank four large ships close off Halifax, three of them out of one convoy. Off Gibraltar too we suffered a few losses; but U.300, which had attacked a convoy and sank one ship on the 17th of February, was damaged two days later by an escort vessel and took refuge in Tangier. On the 22nd she sailed again, attempted another convoy attack, and was quickly sunk by the minesweepers *Recruit* and *Pincher*.

In the North Atlantic the U.S. Navy made a systematic search for the weather-reporting boats early in the year; but U.248, which was caught and sunk on the 16th of January, was the only one located.

In March and April American destroyer groups harried the boats which were cruising between Halifax and Cape Hatteras severely, and sank four of them.² A few ships were sunk, including two far out in the middle of the South Atlantic by a U-boat returning home from Penang; but the flow of Allied shipping was quite unaffected. A more serious matter was the despatch in March of a group of six Type IX boats to a rendezvous north of the Azores. Dönitz hoped that this sudden return to the earlier pattern of group operations would catch us unawares; but in fact we had got wind of his intention, and in any case the Type IXs were but poor substitutes for the much delayed Type XXIs. On the 11th of April the U-boat group started a sweep to the west, only to run into a powerful force of two American escort carriers and twenty destroyers already on patrol in the area. Four of the six U-boats were quickly sunk by the destroyers³, and the two survivors then moved to the American east coast, where they received short shrift at the hands of our Ally's warships. In 1945 the overseas

¹ These figures exclude sinkings by German midget submarines ('Sechunds') which are considered separately. See pp. 273-274.

² These were U.866 on 18th March, U.857 on 7th April, U.879 on 19th April and U.548 on 30th April. See Appendix Y for details.

³ These were U.1235 and 880 on 16th April, U.518 on 22nd April, and U.546 on 24th April. See Appendix Y for details, and Morison, Vol. X pp. 344-356, for a full account of these operations by the U.S. Navy. The differences between the dates given here and those recorded in the American history are probably accounted for by the latter using a different Zone Time.

U-boats, including those on passage to and from the East Indies, sank twelve ships (79,421 tons) and damaged five others; but twelve of their number were sunk, all of them by surface vessels.¹ It should, however, be remembered that, except for the squadrons based on the Azores, our shore-based air strength at overseas stations had at this time been greatly reduced in order to meet the needs of the campaign in our home waters. At the end of the war there were only two boats left in the western Atlantic, one on patrol off Portugal and seven on passage to or from various distant stations. The outer seas had thus been swept almost clear of enemies.

It remains to tell the story of the last five weeks of the struggle against the U-boats around the British Isles. No less than forty-four sailed outwards in April, including the first Type XXI boat (U.2511); and thirty-five new boats came up from Kiel to Norwegian bases. Those figures provide convincing evidence of the way in which, almost to the end, the Germans managed to complete and commission new boats, and to train their crews. At the beginning of the month there were four U-boats in the South-Western Approaches, and another four arrived later; but those that penetrated into the Irish Sea accomplished very little. U.1169 met her end in the deep mine-field in the St George's Channel on the 5th of April; and a week later the 8th Escort Group, which was taking part in an extensive search for an enemy who had recently attacked and damaged two merchantmen, scored a conspicuous success. The *Loch Glendhu* gained contact late on the evening of the 10th of April and fired a single squid pattern with such accuracy that U.1024 was blown to the surface. Boarding parties were quickly sent away and captured the U-boat which was then taken in tow by the *Loch More*. Recovery of the prize was, unfortunately, made more difficult by thick fog descending on the scene, and during the night the tow parted and the U-boat sank. None the less the success was a fine tribute to the efficiency of the group—the more so because the frigates had carried out only five days' training together. Next it was Coastal Command's turn, and on the last day of April a patrolling Sunderland sighted a Schnorkel in the Irish Sea and called up the 14th Escort Group, which was already in the vicinity. It is likely that their attacks accounted for U.242.² Nor did the boats which entered the English Channel fare any better. U.1195 sank a big ship off the Isle of Wight on the 6th, but was located and sent to the bottom by the elderly destroyer *Watchman* an hour later. On the 15th U.1063 tried to attack a convoy off Start

¹ In addition to the twelve U-boats sunk in the Atlantic and European waters the American submarine *Besugo* destroyed U.183 in the Java Sea on 23rd April (see p. 205).

² The original post-war assessment that these attacks destroyed U.325 is probably incorrect. She, as well as U.242, U.326 and U.398 vanished without trace during the last days of the war.

Point, but an escort group which was following in its wake detected her, blew her to the surface and destroyed her. That was the last success achieved in the Channel; but at the end of the war there were still two undetected enemies on patrol there.

In the Bay of Biscay, which had been relatively quiet since the enemy transferred nearly all the U-boats to Norway in the autumn of 1944¹, there was a slight renewal of activity in April. On the 10th the *Vanquisher* and *Tintagel Castle*, which were escorting an outward convoy, sank U.878 in those waters; and it is surprising to learn from the enemy's records that two U-boats entered, and another two sailed from, the Biscay bases during that month. Towards the end of April no less than seven U-boats arrived off the coast of Northern Ireland; but the sum total of their efforts was to sink one small merchantman and damage a frigate. The 4th Escort Group sank U.636 on the 21st of April—the first day of her patrol—and it was appropriate that a Liberator of Coastal Command's famous No. 120 squadron, which had accomplished so much in the earlier phases of the Atlantic battle², should have achieved the last success in the long-contested waters of the North-Western Approaches by sinking U.1017 there on the 29th.

The greatest enemy activity in the last five weeks of the war was off our east and north-east coasts—the waters where the U-boats had begun their onslaught on our shipping in 1939.³ Several Type XXIII boats were present there right to the end, and it is a sobering thought that we never destroyed any of them. However, on the 16th of April when U.1274, a conventional boat, attacked an east coast convoy the destroyer *Viceroy* soon located and sank her off Farne Island.

To return to southern waters, we have already seen how at the end of March the enemy withdrew the U-boats from the Channel and Irish Sea to the more open waters of the south-western approaches.⁴ In April no less than eighteen appeared there, and six of them were accounted for. The only appreciable success they achieved was the sinking by U.1107 of two ships (15,209 tons) from convoy HX.348 on the 18th. In this last phase almost every weapon in the armouries of the Allied sea and air anti-submarine forces proved its worth. Escort groups accounted for U.774, U.1001 and U.285 with depth charges and 'Hedgehogs'; a Coastal Command Wellington destroyed U.321; an American Liberator's acoustic torpedoes can confidently be credited with the sinking of U.1107 soon after she had attacked the Halifax convoy already mentioned; and one of the same service's Catalinas succeeded in locating U.1055 by M.A.D. and sinking her

¹ See pp. 130–131.

² See Vol. II, pp. 209 and 376.

³ See Vol. I, pp. 56 and 130.

⁴ See p. 295.

with a weapon known as a 'retrobomb', which had so far found little favour.

On the northern transit route there was still quite heavy enemy traffic, both inwards and outwards, during these last weeks. The submarine *Tapir* definitely sank U.486 off Bergen on the 12th of April; but only very slender evidence is available to support the two successes credited soon after the war to Liberators of the northern patrol—namely the sinking of U.1276 and U.396 at this time.¹ On the 7th of May, however, a Catalina of No. 210 Squadron did so damage U.320 off the Norwegian coast that she scuttled herself. She was the last of the 699 German U-boats accounted for by Allied ships and aircraft, and her destruction nearly coincided with the sinking of the last Allied merchantmen; for the Type XXIII boat U.2336 sank two ships off the entrance to the Firth of Forth on the last night of the war, escaped all our searching forces and arrived back at Kiel on the 14th. We also now know that another boat of the same class (U.2326) was patrolling in the same waters until the 10th of May, but was never detected.

To sum up the results of the last five weeks of the inshore campaign, the U-boats sank ten merchantmen (52,125 tons)² and two small naval vessels; but no less than twenty-three of them were destroyed. Our surface escorts and patrols accounted for ten, aircraft for six, one was shared by the two services, and six were lost through other causes such as mines or grounding. The results of the last phase of the campaign around the British Isles are summarised in Table 38 (p. 301).

Throughout April Coastal Command devoted increasing attention to the U-boats passing through the Skagerrak and Kattegat. This culminated in a continuous onslaught on the boats which the Germans started to move to Norway early in May, even though many of them were incapable of diving. In this final offensive the conditions encountered by our aircraft resembled those in the Bay of Biscay when, between the 1st of May and the 2nd of August 1943, the U-boats stayed on the surface to fight it out³; but the successes now achieved were on an even greater scale. In addition to the Coastal Command patrols, which now reaped the reward for the thousands of fruitless hours flown over our home waters during the preceding months, rocket-firing Typhoons of the 2nd Tactical Air Force joined in during the last few days. Between the 1st of April and the 6th of May about sixty new U-boats sailed north-bound from Germany, and just before the surrender a large number of school and training boats tried to follow them. It was the daylight strikes with rockets

¹ See Appendix Y.

² This includes two ships sunk off the Kentish coast by U-boats working with the German midget submarines ('Seehunds'). See p. 278.

³ See Vol. II, p. 371, and Part I of this volume, p. 19.

Table 38. *The Inshore Campaign by the U-boats, 1st January—8th May, 1945*

Month	U-boats sunk by warships	U-boats sunk at sea by aircraft	U-boats shared between warships and aircraft	U-boats sunk by unknown or other cause (Mine, accident, etc.)	Sinkings by Inshore U-boats of		
					Merchantmen		Warships
					No.	Tonnage	
January .	4	—	—	2	7	30,426	—
February .	9	1	1	1	11	28,920	3
March .	9	4	—	2	10	44,728	3
1st April to 8th May	10	6	1	6	10	52,125	2
TOTALS .	32	11	2	11	38	156,199	8

NOTES: (1) Sinkings by German midget submarines ('Sechunde') are excluded from this table.

(2) The Allied warships sunk were 2 corvettes, 3 minesweepers, 1 whaler and 2 trawlers.

which did most of the very severe execution inflicted on them. While No. 18 Group's Strike Wings of Mosquitos worked in the Kattegat, No. 16 Group's Beaufighters, flying from bases in Holland, dealt with traffic through the Belts; and the 2nd Tactical Air Force's Typhoons, which were now stationed on airfields in Germany, operated over the western Baltic. Finally, during the very last days, the anti-U-boat Liberators joined in with day and night patrols over the Kattegat. In April the outstanding success was achieved on the 9th, when a striking force of thirty-three Mosquitos sank U.843, U.1065 and U.804 to the east of the Skaw; but in May the pace quickened. We cannot here list all the successes, but no less than twenty-seven U-boats on passage fell to our air patrols between the 1st of April and the end, and another eighteen were destroyed in bombing attacks on the ports and bases which they used.¹ On the 3rd of May Tactical Air Force Typhoons sighted twenty-five U-boats and sank six of them—three of the victims being Type XXIs; next day the Typhoons added another three to the score, and the Beaufighters four. On the 5th, day and night attacks by the Liberators of No. 18 Group accounted for no less than six, four of them Type XXIs; but by that time the end was plainly in sight. The margin by which we escaped having to deal with a dangerous number of the new types of U-boat had, however, been narrow; for by May 1945, in spite of the disorganisation brought about by Allied bombing raids, and the constant interruptions to training caused by the fouling of

¹ Full details are given in Appendix Y.

the Baltic with our air-laid mines, twelve Type XXI boats (in addition to the fully operational U.2511) had completed working-up, and no less than ninety-one others were doing acceptance trials or training their crews.

At 3.14 p.m. on the 4th of May Admiral Dönitz broadcast to all U-boats to cease hostilities and return to base. There were at the time forty-five in the Atlantic, of which thirty-three were on passage inwards or outwards, and twelve were in British inshore waters. Many did not receive the message, and some that did so disregarded it. Only eight, including U.2511, the one operational Type XXI, obeyed at once. Her log tells us that on that day she sighted a cruiser to the north of the Faeroes, penetrated the screen undetected, 'fired' a dummy shot from her torpedo tubes, and then withdrew. By the 7th, the date when the surrender of Germany was signed, only two more boats had obeyed. Then came the historic Admiralty message timed noon on the 8th of May telling all ships and authorities that the German High Command had been directed to order all U-boats at sea to surface, report their positions, and proceed to certain designated ports. No boat obeyed that order at once; but that night six more set course for German bases, still submerged. On the 9th the first surrenders—by nine boats—took place, followed next day by nine more, while six others turned homewards submerged. During the next five days thirteen more surrendered; but there were still four proceeding outward-bound and one inward-bound submerged. Two of these (U.963 and U.1277) scuttled themselves off Lisbon on the 20th of May and 4th of June respectively, U.979 ran ashore on the Dutch coast on the 23rd of May, while U.530 from the east coast of America and U.977 from Kiel reached the River Plate in July and August, only to be interned by the Argentine authorities. The seas and oceans were then at last clear of these hated enemies. But that is not quite the end of the story.

By the Admiralty's order of the 8th of May all U-boats in the eastern Atlantic, the Western Approaches, the Barents Sea and North Sea were ordered to proceed to Loch Eriboll on the south side of the Pentland Firth, across which lay the Home Fleet's main base at Scapa. Other collecting centres in Britain were Beaumaris Bay in Anglesey and Weymouth. At Loch Eriboll on the 9th of May a special escort force from the Western Approaches Command was organised under Captain M. J. Evans, an officer who had served with great distinction in the Atlantic Battle.¹ It was he who, early on the 10th, received the surrender of U.1009—the first U-boat to comply with the broadcast order. By the 15th eighteen boats had come in, and had been inspected. They were then escorted onwards to

¹ See Part I of this volume, pp. 38-40.



The surrender of the U-boats, May, 1945

**Admiral Sir Max Horton, C.-in-C. Western Approaches, on board
U.532, a Type IXC boat engaged on blockade-running from Japan,
in Gladstone Dock, Liverpool.**

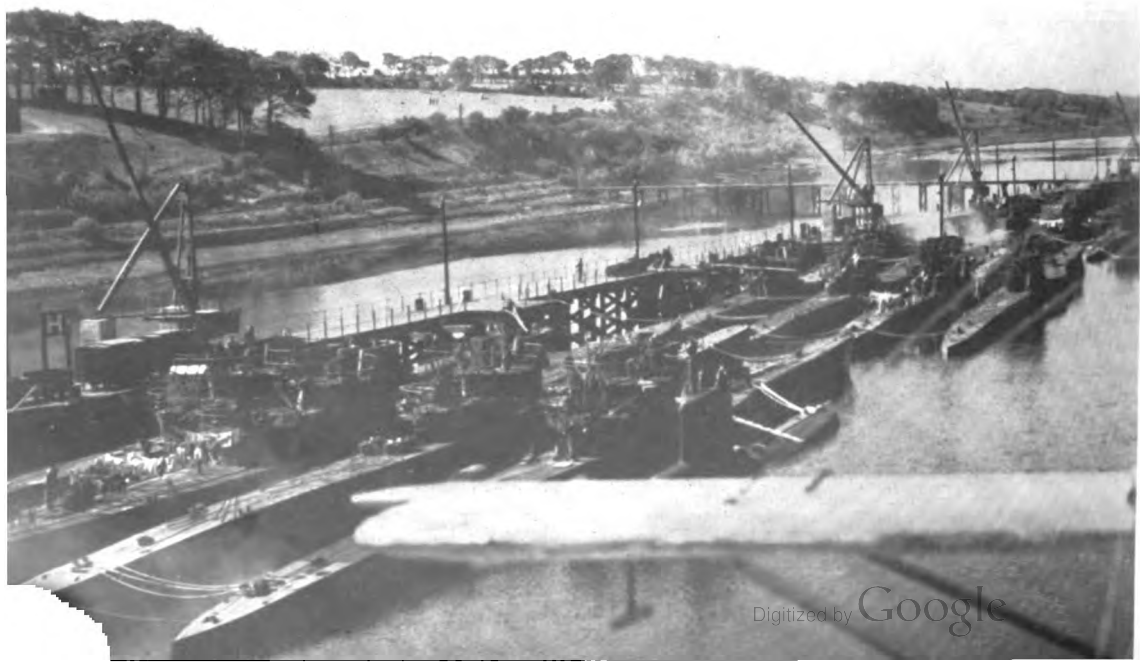
Surrendered U-boats at Wilhelmshaven.





A U-boat flying the black flag of surrender.

Surrendered U-boats at Lisahally, Northern Ireland.



Loch Alsh on the west coast of Scotland, with British armed guards on board and the White Ensign flying above the German colours.

Meanwhile arrangements had been made to send across to Britain all the U-boats which had surrendered in Norway and could be made fit for sea. As the last Arctic convoy, JW.67, was on passage at the time when the first group of fifteen U-boats was reported to be leaving Narvik¹, the 9th Escort Group was detached from the convoy to meet them off the Norwegian coast and bring them to Loch Eriboll. They arrived in British waters on the 19th of May. A week later more were ready at Trondheim and Bergen, to which the 5th and 30th Escort Groups were therefore sent.² The reports rendered by senior officers on events in the Norwegian ports during these hectic but rewarding days make very amusing reading; for the young British escort commanders plainly relished a duty which marked the end of the years of arduous endeavour, and also revelled in the warmth of the welcome given to them by the Norwegians. At Trondheim, for example, Captain J. H. Ruck-Keene had precisely two British warships with which to control many thousands of Germans and see that his orders were carried out. This delighted the Captain of the frigate *Kempthorne*, who also reported how the language difficulty was solved by 'ten lovely English-speaking blue-eyed Norwegian blondes' coming off in a Luftwaffe speedboat driven by a German crew. In spite of the continuous celebrations proceeding on shore, and some difficulties in organising the U-boats for passage, many more surrendered enemies were got away before the end of the month.

With the arrival of the boats from Norway the reception organisation was shifted from Loch Eriboll to Scapa, where they were inspected prior to being escorted on to Loch Ryan or to Lisahally in Northern Ireland. By the 6th of June ninety-seven boats had passed through Captain Evans's hands in this manner, including seventeen Type XXIII and one Type XXI (U.3035). This latter boat was a valuable prize, which we wished to test and inspect for our own purposes. She was therefore brought across from Bergen by a British crew. With the clearance of the last seaworthy boats from Norway operation 'Pledge' was completed, and Captain Evans's force was disbanded. In all 156 U-boats surrendered, but another 221 scuttled themselves rather than fall intact into Allied hands.

The final act of the drama took place between November 1945 and

¹ See p. 261.

² At a conference held at Bergen shortly before the departure of the Norway U-boats the British representatives found one German officer who was very co-operative. An appreciative remark from the senior British officer produced the surprising reply from the German 'Oh yes, I know all about this. You see I surrendered at Harwich in 1918.' In reporting this Captain Evans expressed the hope that, although his account of these events was of little immediate interest, it might prove helpful 'to the officer charged with accepting the surrender of German U-boats after the next war.'

the early days of 1946, when all the U-boats except the few which Britain, America and Russia intended to retain were assembled at Loch Ryan, and then taken out to sea in groups to be sunk by their captors in a position selected by the Admiralty about thirty miles north of Malin Head. The great majority of our erstwhile enemies had to make their last journey under tow, and as the Atlantic lived well up to its reputation by producing a succession of violent gales, the forces allocated to the operation found it no easy task. The commander of the 17th Destroyer Flotilla was in charge, and it was appropriate that his ship, the *Onslow*, should have served with such distinction in the Atlantic battle.¹ The duty of sinking U-boats by gunfire, in cases where the demolition charges had failed, fell to the Polish destroyer *Blyskawica*, which had escaped to Britain in 1939 and had since gained a splendid fighting reputation.² Coastal Command and Fleet Air Arm aircraft, as well as one of our submarines, also took a share in the final immolation of their former enemies. By the 20th of January 1946 110 U-boats had been sent to the bottom in the ocean from which, for nearly six years, they had struggled in vain to drive our shipping.

Lastly in November 1945 ten U-boats, no less than half of them Type XXI or XXIII, were steamed by British crews, or towed by British warships, from Lisahally to Libau, where they were handed over to the Russians. Though our eastern Ally's share in the prosecution of the Atlantic battle had been as insignificant as their contribution to the defeat of Germany on the continent had been great, we made no bones about allocating to them a full share of the prizes gained from the victory at sea—to the great benefit of their own future submarine developments.

Thus ended the second attempt by Germany to bring Britain to her knees by striking at the merchant ships on which, as both sides well knew, her existence depended. Whether the U-boat campaign of 1939–1945 came as near to success as that of the 1914–1918 war is arguable. In the first German war, which was about seventeen months shorter than the second, enemy submarines sank a considerably larger number of merchant ships; but their tonnage was some three and a half million tons less.³ Thus the cost to Britain of the second war was substantially greater than that of the first.

Between 1939 and 1945 the Germans built and commissioned a total of 1,162 U-boats, of which 784 were lost through one cause or another. By far the greatest proportion of the U-boats sunk *at sea*—500 out of 632—were destroyed by British or British-controlled

¹ See Vol. II, pp. 283 and 291–298.

² See Vol. I, p. 69, and Vol. II, p. 439.

³ Submarine sinkings in the 1914–1918 war amounted to 4,837 ships totalling 11,135,460 tons.

forces, and the final count shows that the navies and air forces of the Empire shared in those successes as equally as they had shared in the burden of the long Atlantic battle.¹

The losses inflicted on Allied and neutral shipping by German, Italian and Japanese submarines amounted to 2,828 ships totalling no less than 14,687,231 tons; and it was the Germans who achieved by far the greatest proportion of that prodigious destruction. Nor does the total of sunken ships tell the whole tale, for a very large number were damaged by U-boat torpedoes, but were towed in and repaired to sail again. An interesting point which arises from study of the final statistics is that losses through marine causes were second only to those inflicted by enemy submarines, and totalled some 1,600 ships of over three million tons. The heavy toll taken by accidents and groundings was of course largely caused by ships having to steam in close order without lights, by the extinction of navigation marks, and by similar hazards connected with war. As to casualties suffered by Allied merchant seamen, crews were drawn from so large a number of nations that it has not been possible to compute the total figure; but the British Merchant Navy alone lost 30,248 men through enemy action.

In addition to the losses inflicted on our merchantmen the German U-boats sank 175 Allied warships, the great majority of which were British. A large proportion of the total casualties suffered by the Royal Navy (73,642 officers and men) must therefore have been caused by them.² Though other enemy weapons, especially mines, aircraft bombs and torpedoes, also inflicted substantial losses and caused us serious anxiety at different times, we finally mastered all of them except, perhaps, the pressure-operated 'oyster' mine. But the facts set out in this chapter show that, if the U-boats were no longer capable of causing us appreciable losses, they were a source of anxiety to us right to the end. Although they had unquestionably suffered a succession of severe defeats on the broad oceans, and Dönitz himself has admitted that the failure of the inshore campaign was sufficiently marked to be called 'a severe setback'³, in the final phase we did not gain so high a degree of mastery as would have forced them to withdraw from our coastal waters—as the heavy losses inflicted in the Atlantic in May 1943 forced them to withdraw from that ocean.

¹ See Appendix Y, Table 5, for details. The total of 784 U-boats sunk takes account of only one of the two occasions on which U-31 was sunk.

² Royal Navy casualties amounted to 50,758 killed, 820 missing, 14,663 wounded and 7,401 prisoners of war. In addition the Women's Royal Naval Service had 102 killed and 22 wounded.

³ See Karl Dönitz, *10 Jahre und 20 Tage* (Athenäum-Verlag, 1958), p. 426. Dönitz's definition of the 'severe setback' (schwere rückschlag) suffered by the coastal U-boats in the final phase has been mistranslated in the English edition of his book (Weidenfeld & Nicolson, 1958, p. 427) as 'severe defeat'.

It is impossible to enter here into a discussion of the ethics of submarine warfare against merchant shipping; but it should not be forgotten that Hitler's Germany joined with other powers in denouncing it in accordance with the terms of the London Protocol of 1936, and that Britain accepted the assurances then given—until it became irrefutably plain that the Nazis had no intention of honouring their signatures. It is perfectly true that British and American submarines finally waged war on merchant shipping in a manner which was indistinguishable from that employed by our principal enemy; but the British Government only moved very slowly towards permitting such methods, and as late as 1941 our submarines were only allowed to attack without warning in certain declared areas.¹ The motive behind this caution was not of course altruistic. It derived from the fact that we, with our world-wide responsibility for the safety of merchant shipping, were bound to be the greater loser from unrestricted submarine warfare; and there were thus the strongest reasons to avoid giving the enemy any justification for adopting it. That still remains true to-day. Yet past attempts to restrict the use of certain weapons do not encourage the hope that they will be successful in the future; and Britain's twice-proved vulnerability to submarine warfare remains self-evident.

To the whole generation of British seamen who fought in the Atlantic Battle the primary enemy was always the U-boat; and although we British are notoriously bad haters—and our seamen are probably the slowest of our race to be subject to such passions—there is no doubt that the German U-boats did finally arouse feelings of the strongest loathing in their minds. This was not entirely because they waged a war of concealment and cunning against defenceless cargo and passenger ships, nor yet because we abhorred the arrogance of the majority of U-boat officers whom we rescued. It was because we knew beyond doubt that the peril in which our whole nation so long stood derived mainly from those utterly ruthless enemies, and that only by destroying them could we survive. In terms of history it is quite irrelevant that developments in post-war Europe have forced us to accept the countries so recently ruled by the dictators as Allies; and it is sheer casuistry for German apologists to claim that their methods of waging war were justifiable, or even humanitarian.² Our seamen may have given a grudging admiration to the dogged resolution of the U-boat crews, and their refusal to give up even in the face of crippling losses; but they knew that the seas had to be cleansed of such enemies before innocent ships could once again

¹ See Vol. I, pp. 334, 355 and 439.

² See, for example, Vice-Admiral F. Ruge, *Sea Warfare* (Cassell, 1957), p. 223. 'The Wehrmacht fought the war without hatred . . . and its escutcheon remained untarnished.'

sail 'on their lawful occasions', and they themselves could return to enjoy 'the blessings of the land and the fruits of their labours'.

'The surrender of Germany' stated Admiral Burrough in his war diary 'meant for the naval forces not an easing up, but a greatly increased activity in occupying and opening up the ports of Holland, Denmark and north-west Germany, and the start of mine clearance.' The vanguard of our forces entered Bremen on the 26th of April, to find it heavily mined and many ships sunk in the harbour. Hamburg, which surrendered on the 3rd of May, was in even worse state, with fifty-nine ships sunk within the confines of the port. On the 8th, the day after the enemy had signed the Allied surrender terms at Rheims, the White Ensign was hoisted at Kiel, and a former German depot ship was commissioned as H.M.S. *Royal Charlotte*. All the enemy's major warships except the *Prinz Eugen* and *Nürnberg*, which were surrendered intact at Copenhagen¹, were in a sorry state. The *Scheer*, *Lützow* (*ex-Deutschland*) and *Emden* had been destroyed by bombing attacks on Kiel and Swinemünde, and the *Köln* had suffered a similar fate in Wilhelmshaven; the *Leipzig* had been badly damaged in collision in the Baltic in October 1944, and eventually reached Denmark, where she passed into British hands; the wrecks of the *Gneisenau* and of the uncompleted aircraft carrier *Graf Zeppelin* were taken over by the Russians at Gdynia and Stettin, while the *Seydlitz* had been scuttled at Königsberg, and the *Hipper*, which had been badly damaged by R.A.F. bombs while at Kiel and moved into dry dock, was sunk by her own crew before we captured the port. Apart from the U-boats, whose final fate has already been recounted, nothing remained of the once proud German Navy.² Its second challenge to Britain had ended in very similar manner to the first, and such of its ships as still remained afloat were soon flying the White Ensign above the crooked cross of the Nazis.

On the 8th of May the destroyers *Bulldog* and *Beagle*, which had taken part in the evacuations from Europe in 1940, entered St Peter Port, Guernsey; and the surrender of the German garrison of the Channel Islands was signed next day on board the *Bulldog*, thus restoring the only part of the British Isles which the enemy had occupied.

British Naval authorities at once visited all the major German ports, and surveyed the ships lying in them. Orders were given for all

¹ See p. 263.

² See Appendix XX for a summary of the losses of major warships suffered by the German Navy. The *Prinz Eugen* was sunk after the atomic bomb trials held at Bikini in 1946. The *Nürnberg* was handed over to the Russians, and is understood still to be serving in their fleet (1959). The *Leipzig* was sunk by the British in the North Sea in 1946.

seaworthy merchantmen to be sailed to the Humber, and the first convoy put to sea on the 31st of May. By that time all the principal Dutch, Danish and Norwegian ports were open to traffic, and relief supplies were flowing in through them; the German garrisons had been evacuated from Holland by sea, and the minesweepers were clearing the inshore waters of the North Sea. Except where there was still some danger from mines, sailings in convoy had been cancelled by the Admiralty, and hundreds of warships and landing craft were being released from the European theatre to prepare for service in the Far East; since for a great part of the Royal Navy the time had not yet come when it could be allowed to take its rest.

CHAPTER XXV

THE OFFENSIVE
IN THE INDIAN OCEAN
1st January–30th June 1945

‘I will make no other introduction to the following discourse than that as the importance of our being strong at sea was ever very great, so in our present circumstances it is grown to be much greater.’

Marquis of Halifax, *A Rough Draft of a New Model at Sea* (1694).

WE saw earlier how, on the 22nd of November 1944, Admiral Sir Bruce Fraser assumed command of the embryo British Pacific Fleet, which was beginning to assemble in Ceylon, and Admiral Sir Arthur Power then took over the East Indies Fleet.¹ At the beginning of 1945 the ships earmarked for the Pacific were still based in the Indian Ocean, where they were preparing to meet the many problems involved in the transfer to their new theatre. The carriers were in particular need of a quiet period, in order to re-equip with American Avenger torpedo-bombers in place of the much less satisfactory Barracudas. On the last day of 1944, however, Rear-Admiral Sir Philip Vian sailed from Trincomalee with the *Indomitable*, *Victorious* and *Indefatigable* to attack the oil refinery near Belawan Deli in north-east Sumatra, which, because of bad weather, we had failed to damage in the previous raid.² This time the carrier aircraft were much more successful and did a good deal of damage; but both operations were mainly in the nature of rehearsals for a much heavier blow against Palembang, which was to take place on the 22nd of January 1945, while the British Pacific Fleet was on its way to Australia. At Palembang were situated the two largest oil refineries in South-East Asia, and their importance lay in the fact that between them they were capable of meeting three-quarters of Japan's needs for aviation fuel.

On the 16th of January Admiral Vian accordingly sailed eastwards again from Ceylon with his four fleet carriers, the battleship *King George V*, three cruisers and ten destroyers. Unfavourable

¹ See p. 202.

² That of 20th December 1944. See p. 202 and Map 36.

weather caused a two-day postponement, but at dawn on the 24th forty-three Avengers, accompanied by some eighty fighters, took off. As had been expected the enemy defences proved strong, and included a balloon barrage. Japanese fighters met the striking force before it reached the target, and anti-aircraft fire was very heavy; but the bombers pressed on and were so successful that, according to Japanese reports, the output of the Pladjoe refinery was halved. At least eleven enemy aircraft were shot down in combat, and some thirty more were destroyed on the three adjacent airfields. After recovering the striking force Admiral Vian withdrew to the southwest to meet his refuelling force and replenish. On the 29th he was back again in the flying-off position, with the intention of attacking the second refinery (Soengei Gerong); and so accurately did the forty-six Avengers aim their bombs that the refinery's production was totally stopped for two months. These two raids were by far the most successful so far carried out in the theatre, and as late as the end of March 1945 the Palembang refineries were only working at one-third of their capacity.

By 11 a.m. on the 29th of January, the day of the second attack, the striking force had landed on, and the fleet then began to withdraw. About half a dozen enemy planes, which may have been manned by suicide crews, then came in; but their attempt was so half-hearted that the fighters and anti-aircraft guns had no difficulty in dealing with them. Admiral Vian then refuelled his ships once again. Though the Japanese were heard to broadcast that they had destroyed over 200 aircraft, in fact we lost only sixteen in action and twenty-five more from various other causes; but nine of the missing men fell into Japanese hands, and all of them were murdered in cold blood several months later. On the 4th February Admiral Vian reached Fremantle, and the long process of forming the British Pacific Fleet was brought one stage nearer to fulfilment. The first operations of the fleet in its new theatre will be recounted in the next chapter.

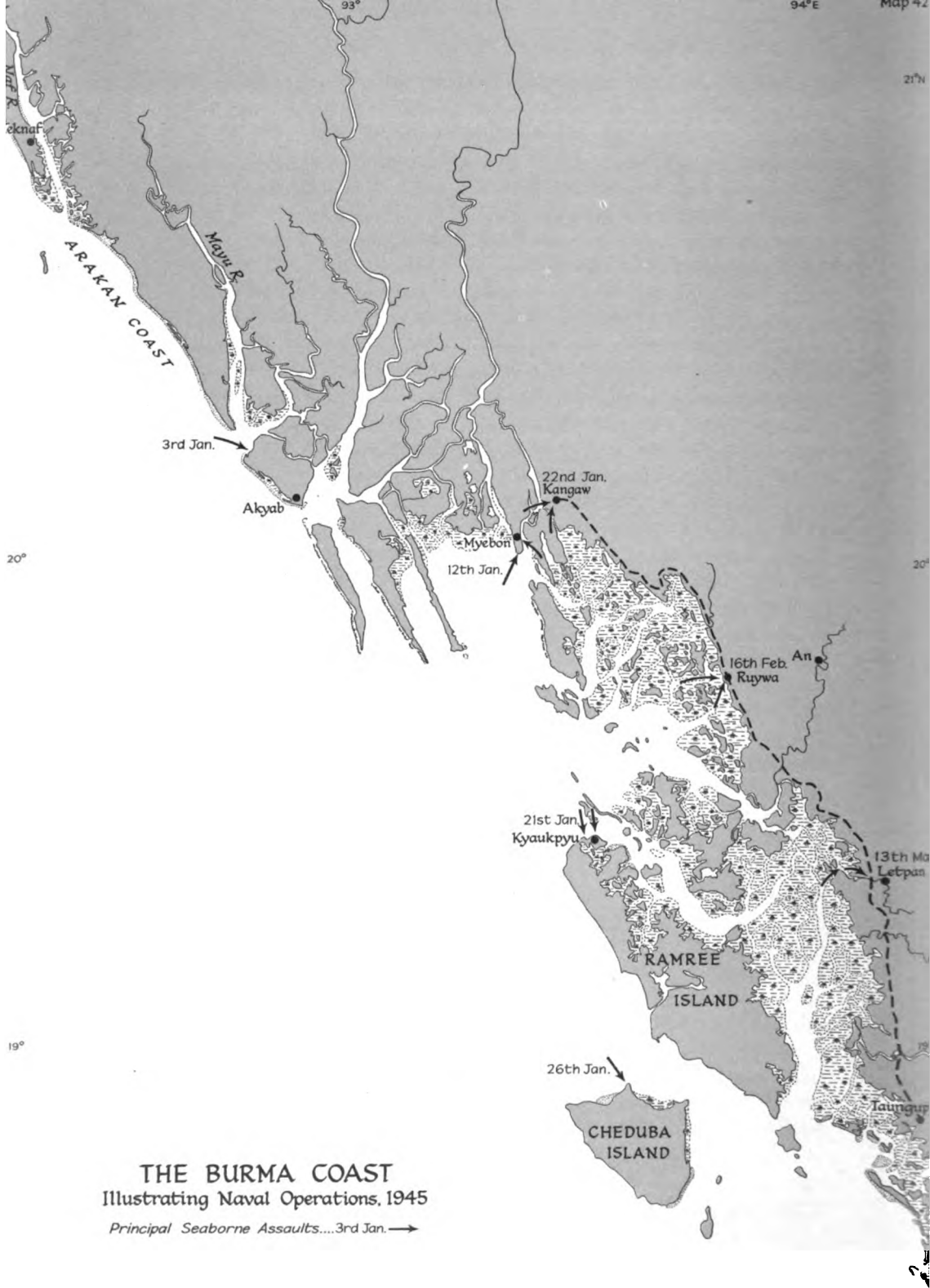
While the tempo and weight of the offensive in the Indian Ocean were thus rapidly rising, the submarines of the 2nd and 4th Flotillas continued their patrols in the unpleasantly shallow and restricted waters of the Malacca Straits, and off the coast of Burma.¹ In addition to seeking Japanese supply vessels and warships, they acted as air-sea rescue craft while carrier air attacks were in progress; and they also carried out a number of special operations, such as landing agents in enemy-held territory. Though they sank a number of the small craft which the Japanese were now using for supply purposes,

¹ In March 1945 the 4th Submarine Flotilla moved from Ceylon to Fremantle, whereafter its boats worked under the American Seventh Fleet.

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THE BURMA COAST
 Illustrating Naval Operations, 1945
Principal Seaborne Assaults....3rd Jan. →

targets on which it was worth expending a torpedo had become rare. None the less their steady pressure contributed substantially to the disruption of the enemy's sea transport system, and to tightening the blockade of his bases. The only casualty suffered by our submarines in this phase was the *Porpoise* while on a minelaying mission off Penang on the 16th of January.

With the departure of the British Pacific Fleet Admiral Power was left with the *Queen Elizabeth* and *Renown*, nine cruisers (including the Dutch *Tromp*), four escort carriers and about two dozen destroyers with which to carry on the offensive in the Indian Ocean. His escort forces numbered over seventy ships; but in fact the U-boat menace in these waters was now a thing of the past¹, and all mercantile traffic except troopships was sailing independently and in virtually complete immunity. Admiral Power was thus in the happy position, which his predecessors had never enjoyed, of being free to use the main fleet offensively, with the object of denying to the enemy the use of the sea; while his light forces could lend their full support to the combined operations on the Burma coast now being planned. But before describing the third and final offensive in the Arakan we must take another brief glance at the strategic problems which beset the Supreme Commander, South-East Asia, and also at the progress of the land offensive in Burma; for without some understanding of them the consequences of the complete transformation of the maritime scene can hardly be understood.

The Japanese, having lost control of the Indian Ocean, could only reinforce and supply their forces in Burma by the long and difficult overland route from the ports on the coast of the South China Sea or, to a lesser extent, through the small harbours in southern Burma and north Malaya. But the latter were now being frequently mined and occasionally bombed by the aircraft of the R.A.F.'s Nos. 222 and 231 Groups; and as the blockade of the Japanese homeland was being steadily drawn tighter there was in fact little prospect of supplies arriving safely at the better equipped ports on the South China Sea.² Thus while the Allied land and air forces were being steadily augmented and were kept adequately supplied by ships coming from far away Britain and America, the Japanese forces in the theatre had become wasting assets. This was a basic cause of the turn of the tide in the prolonged struggle for Burma. By the middle of January the prospects of inflicting a sound defeat on the Japanese army in the vicinity of Mandalay appeared excellent; and such a success opened

¹ See pp. 205-206. In September 1944 some U-boats were still withdrawing from the Indian Ocean on their way back to Germany. Their final sortie took place from Batavia in February 1945.

² See pp. 368-370 regarding the progress made with the blockade of Japan by March 1945.

up the possibility of thrusting down the Irrawaddy to reach Rangoon, some 350 miles to the south, before the south-west monsoon broke in May. If that plan could be brought to fruition there would be no need to mount an expedition to capture Rangoon by assault from the sea. The Supreme Commander therefore decided to do everything possible to give the southward thrust from Mandalay the necessary impetus to reach its objective in time; and the measures taken included establishing air bases on the Arakan coast, to enable supplies brought in by sea to be flown to General Slim's Fourteenth Army by transport aircraft. We will return shortly to the operations undertaken to implement that purpose.

On the last day of January the British Chiefs of Staff proposed to the Combined Chiefs of Staff that Admiral Mountbatten should be given a new directive, naming the early liberation of Burma as his first task and the reconquest of Malaya and other southern territories as his ultimate purpose.¹ But this seemingly obvious proposal led to prolonged discussion with the Americans regarding whether the Chinese troops and the American resources of men and material in the South-East Asia theatre should remain at the Supreme Commander's disposal. The main point at issue was the future of the transport aircraft, which were essential to the successful prosecution of the land campaign, and over forty per cent of which were American. The U.S. Chiefs of Staff still regarded the operations on the mainland of China as more important than those in South-East Asia, and wished to be free to transfer their resources from Mountbatten's command to support Chiang Kai Shek's armies. On the 3rd of February, however, Mountbatten received the new directive in the form desired by the British Chiefs of Staff, with a proviso that 'any transfer of forces engaged in approved operations in Burma which is contemplated by the U.S. Joint Chiefs of Staff and which in the opinion of the British Chiefs of Staff would jeopardise these operations, will be subject to discussion by the Combined Chiefs of Staff'²; and on the 23rd he therefore declared his intention to carry out the rapid lunge from Mandalay to Rangoon, already mentioned.³ The seaborne expedition against Rangoon (operation 'Dracula') was accordingly held in abeyance. Scarcely had these decisions been taken when the Chinese demanded the return of their last three divisions from Burma, in order to regain the airfields on the mainland of their own country; and it was plain that if that proposal was accepted many of Mountbatten's precious transport aircraft, on

¹ See J. Ehrman, *Grand Strategy*, Vol. VI, pp. 185-188 (H.M.S.O., 1956).

² See Admiral Mountbatten, *Report to the Combined Chiefs of Staff by the Supreme Commander South-East Asia 1943-1945*, p. 122 (H.M.S.O., 1951) regarding the operations to recapture Rangoon.

³ *Ibid.*, pp. 145-157.

which the advance to Rangoon greatly depended, would be diverted to the duty of transferring the Chinese troops. After a long exchange of telegrams it was finally agreed that he should retain the American aircraft until the 1st of June¹; and that made it all the more essential for General Slim's troops to reach Rangoon before the monsoon broke, if their seaborne supplies were to be made secure before the transport aircraft were withdrawn.

On the 3rd of March the important road and rail centre of Meiktila was captured, and the pace of the advance then quickened. British troops entered Mandalay on the 9th of March—though resistance in the city was not finally quelled until ten days later. By the beginning of April the Fourteenth Army was pursuing a disorganised enemy down the Irrawaddy valley; but it still seemed doubtful whether it could capture Rangoon in time. The Supreme Commander therefore decided to remount the amphibious expedition against the port, though in modified form, and the orders were issued on the 17th of April. This meant postponing his longer term intentions with regard to Malaya; but the early recapture of Rangoon was held to outweigh all other considerations.

We must now retrace our steps to the beginning of the year and describe the maritime side of the third and final Arakan offensive, whose contribution to the Army's southward advance from Mandalay has already been explained.² The naval commander for the Arakan operations was Rear-Admiral B. C. S. Martin, and the assault forces were led by his Chief of Staff, Captain E. W. Bush. Although by European or Pacific standards the number of ships and craft taking part was puny, for the first time in South-East Asia they were present in sufficient numbers to assist materially in the land campaign.

A full-scale assault on Akyab had been planned to take place on the 18th of February³, but when at the end of December 1944 we learnt that the Japanese were preparing to evacuate the island, the decision was taken to strike as quickly as possible, without waiting for the formation of a fully trained assault force. A Commando brigade, consisting of two Army and two Royal Marine commandos, accordingly embarked at Teknaf on the 2nd of January, and at 10 a.m. next morning the assault craft touched down as intended on beaches at the north-west tip of Akyab island. The Japanese, however, had already completed their evacuation, and it was plain that if the retreating garrison was to be cut off, more landings would have

¹ See Ehrman, *Grand Strategy*, Vol. VI, pp. 193-194 (H.M.S.O., 1956).

² See Part I of this volume, p. 213 fn., regarding the first Arakan offensive (mid-December 1942-mid-May 1943), and p. 353 regarding the second offensive (December 1943-February 1944).

³ See Map 42.

to be made further down the coast. The Commando brigade therefore re-embarked in the assault craft and by dawn on the 12th of January was off the Myebon peninsula, where we knew that the enemy was firmly entrenched.¹ After preliminary bombardments and bombing the commandos quickly secured their beach-heads, but even after a follow-up brigade had been brought in from Akyab it proved impossible to advance inland quickly enough to cut off the retreating Japanese. Meanwhile the motor launches were conducting an extraordinary game of hide and seek with enemy craft in the intricate maze of waterways or 'chaungs' with which this wild and jungle-clad coast is deeply indented. To them fell one of the most unusual tasks that arose throughout the whole course of a war which was full of surprises; but the adaptability of the crews—most of whom were led by young R.N.V.R. officers—proved fully equal to the occasion, and their reports even suggest that they enjoyed the opportunity to show their individuality and originality.

With the advance from Myebon held up, the Commando brigade embarked once again and on the 22nd of January, after a circuitous journey through the 'chaungs', landed at Kangaw, right athwart the main coastal road along which the Japanese were retreating. Here the commandos and the follow-up brigade encountered strong resistance, and a week of bitter fighting, often hand to hand, took place before the enemy withdrew down the coast; but again we did not succeed in trapping the main body. On the 16th of February another assault was therefore made at Ruywa, thirty miles farther south; but once more the Japanese resisted fanatically, and prevented our troops advancing inland far enough and fast enough to close the trap.

Meanwhile further down the coast, where the waters were much less constricted, a more substantial landing had been made on the island of Ramree, where we intended to establish an air base to help supply the Fourteenth Army during its advance down central Burma. Here the assault was to take place in divisional strength, and between the 17th and 19th of January the 26th Indian Division accordingly embarked at Chittagong in L.S.Is and major landing craft. The destroyers allocated for support duties, as well as the minesweepers and smaller vessels, assembled at Akyab; while the battleship *Queen Elizabeth* and the light cruiser *Phoebe*, with two destroyers and two sloops, formed a bombardment group, and the escort carrier *Ameer* and two more destroyers screened the larger ships. At 7.30 a.m. on the 21st of January the landing ships reached the lowering position seven and a half miles from the coast, and the assault craft

¹ See Map 42. The actual strength of the Japanese garrison of Myebon is now known to have been only about 500 men.

then moved inshore, covered by the gunfire of the bombarding ships and by heavy attacks by R.A.F. and U.S.A.A.F aircraft. The beach-head was quickly secured in the face of only slight opposition, and by the end of the day 7,000 men as well as many vehicles and tons of stores had been disembarked. The *Queen Elizabeth* and her escort then returned to Trincomalee and the *Ameer* to Akyab, leaving the *Phoebe*, two destroyers and a sloop off the coast for support duties.

To help gain full control of the waters around Ramree a purely naval operation was now carried out against the neighbouring island of Cheduba.¹ The assault force consisted of 500 Royal Marines collected from the larger warships of the East Indies Fleet, and they were covered by gunfire from three cruisers and by aircraft from the *Ameer*. The landings took place early on the 26th of January and met with no opposition. Four days later the cruiser *Kenya* brought across soldiers from Ramree, whereupon the marines re-embarked. That same afternoon they were manning the cruisers' guns to bombard the Ramree defences, which were still holding out. The Commanding Officer of the marines remarked in his report that it was doubtful whether so rapid a switch from sea to land and back again to sea could be found even in the long story of his regiment's work on both elements.

The build-up on Ramree itself continued rapidly, and by the 12th of February 23,000 troops were ashore; but the Japanese garrison, though it consisted of only one infantry battalion (under 1,000 men) resisted with all the usual fanaticism until more landings had hemmed them in against the eastern side of the island. Then the light craft moved into the 'chaungs' to cut the line of retreat to the mainland. None the less Japanese records show that about 500 of the garrison managed to escape. By the 22nd we were in complete possession of Ramree; but the airfield, whose capture had been the main purpose of the operation, was not ready to take transport aircraft until the middle of May, by which time Rangoon had fallen. Thus the very substantial effort involved in the capture of Ramree yielded little positive result. On the other hand we should remember that, had Rangoon not fallen before the monsoon, possession of the island would undoubtedly have been very valuable.

On the 13th of March there took place yet another amphibious landing with the object of cutting off the Japanese retreat by the coast road. A brigade was carried from Ramree through the 'chaungs' to Letpan, where it landed without meeting any opposition; but once again resistance stiffened as soon as the troops advanced inland towards Taungup, which was not captured until the 28th of April. This was the last of the many assaults carried out from the sea during

¹ See Map 42.

the third offensive in the Arakan. It thus came to pass that by the end of April 1945 we were firmly in possession of the whole long-contested coastal strip, and had gained the use of valuable forward bases from which new combined operations could be mounted. None the less it is difficult not to feel disappointment over the fact that, in the seven landings carried out between Akyab on the 3rd of January and Letpan on the 13th of March, we did not succeed in destroying the one division which comprised the Japanese Arakan garrison; and it is disconcerting to learn from their records that some of its men, though without any of their heavy equipment, made their way over the mountains to join their main army in the Irrawaddy valley.

Meanwhile Admiral Power had been strengthening his hold over the whole Indian Ocean by making repeated sweeps to the east of the Andaman and Nicobar islands. Though few targets were found, the operations probably set the final seal on any Japanese attempts to move men or supplies by sea. On the 25th of March four ships of the 26th Destroyer Flotilla intercepted a convoy of two small merchantmen and two escorts, which were evacuating troops from the Andamans. After expending no less than eighteen torpedoes and a huge amount of gun ammunition the convoy was destroyed; but the Admiralty, not surprisingly, described the action as 'unsatisfactory'. Two months later, however, the flotilla redeemed its tactical reputation in no uncertain manner.¹

The Japanese military commander in South-East Asia (Field Marshal Count Terauchi) had meanwhile decided to withdraw the greater part of the garrisons from the islands of the Eastern Archipelago, in order to concentrate as much of his strength as possible in Thailand (Siam) and Indo-China. Allied submarines took a toll of the shipping employed on these movements, and on the 7th of April three American boats sank the cruiser *Isuzu* and one of her escorts in the Java Sea. The Japanese naval commander at Singapore now had only two heavy cruisers (the *Ashigara* and *Haguro*) and one single destroyer fit for sea²; and they were generally employed in the waters to the east of the Malay Peninsula. With such puny forces left to him there was now no possibility of effectively disputing our control of the Indian Ocean; for the Japanese Navy was now in the unenviable situation in which we had found ourselves between December 1941 and April 1942.³ Admiral Power could thus spare some of his heavy ships, and at the end of March the *Renown* sailed for England to join the Home Fleet, which the Admiralty wished to strengthen in case

¹ See pp. 319-320.

² The heavy cruisers *Takao* and *Myoko*, both of which had been badly damaged in the Battle of Leyte Gulf (see pp. 214 and 216), were being repaired at Singapore.

³ See Vol. I, Chapter XXVI, and Vol. II, Chapter I.

the German Navy should decide to send its surviving warships to sea on a last desperate sortie.¹ On the other hand during the same month Commodore G. N. Oliver joined the East Indies Fleet from the Mediterranean in the light cruiser *Royalist*, with three escort carriers and six destroyers which had recently been employed in the final operations in the Aegean.² These ships had been sent out to take part in the assault on Rangoon which, as we have already seen, was now to be mounted in a modified form. Thus right up to the end was our naval strength switched from side to side of the world, to meet each new demand as it arose; and the well-known flexibility of maritime power was exploited to the full.

Throughout April 1945 preparations for the combined operation against Rangoon were pressed ahead. It was to take place under the command of Rear-Admiral B. C. S. Martin on the 2nd of May—two weeks before the monsoon was expected to break. From the naval point of view the assault, which had to be planned in the expectation of stubborn resistance, presented many difficulties and some unusual features. The weather, if it stayed fine for the actual landings, was certain to deteriorate soon afterwards; pilotage up the Rangoon river, from which all navigational marks had probably been removed, was bound to be hazardous; the mines which we ourselves had recently laid in the river, and those sown by the enemy, would have to be swept; the slow landing craft would find it difficult to make progress up the swift-flowing tidal estuary; and the shallowness of the approach waters made it impossible to employ heavy warships for preliminary bombardments in the manner so often shown to be necessary. The plan therefore provided for a Gurkha parachute battalion to be dropped on the day before the main assault, in order to seize the coastal battery at the river mouth, and for heavy air bombardments of the assault beaches shortly before touch-down. Two infantry brigades were then to land simultaneously, one on each bank of the river, at points about seven miles upstream from the mouth, and eighteen miles below Rangoon itself. Two more brigades would arrive three days later in follow-up convoys, and additional forces were held in readiness for the build-up. If the main landings were successful the troops were to press northwards along both river banks towards Rangoon itself, which we expected to be ready to attack on about the 11th of May.

The assault forces assembled at Ramree, where they embarked in L.S.Is and landing craft, while the naval escort and covering forces collected at Akyab. Between the 27th and 30th of April six convoys left for the entrance to the Rangoon river, the slowest leading the

¹ See p. 260.

² See pp. 114-115. This force was known as the 21st Aircraft Carrier Squadron.

procession; while carrier-borne and shore-based aircraft covered their progress. Early on the 1st of May the minesweepers arrived off the river entrance, swept the approach waters and laid navigation marks. That night the convoys anchored in the lowering positions, some twenty-five miles from the river entrance, and the assault craft formed up for their long journey up the river—in darkness and pouring rain; for the monsoon had broken nearly a fortnight early. Soon after 7 a.m. on the 2nd the assault waves touched down on their appointed beaches, to find that the Japanese had in fact abandoned the whole vicinity of Rangoon some days earlier.¹ Coastal craft now began to push on up the river, to be met by the pilot of a Mosquito who had landed on the deserted airfield on the afternoon of the 2nd. He had then walked into the town, and taken a sampan down the river to meet the assault forces. What might have proved a difficult and costly undertaking thus ended in an atmosphere not far removed from *opera bouffe*. The only naval casualty was an L.C.T. which struck a mine and sank.

On the 3rd of May some of the troops landed on the assault beaches re-embarked and were carried up to Rangoon by water, while the remainder advanced on the city along the river banks. By the 6th the sweepers had made the Irrawaddy delta safe for large vessels as far as a point about ten miles below Rangoon, and Admiral Martin's headquarters ship, the *Largs*, the light cruiser *Phoebe*, and the L.S.Is with the follow-up brigades then made the passage up-river in safety. They found that the port had suffered severely from Allied bombing; but repair work was at once put in hand.

While the combined operation against Rangoon was in progress Admiral Power had sent his main strength to sea under Vice-Admiral H. T. C. Walker to cover the expedition and to carry out diversionary sea and air bombardments of the Andaman and Nicobar Islands. The carrier planes also attacked airfields and shore installations on the Tenasserim coast²; but no enemy surface ships were encountered, and air opposition was on a very small scale. In the final phase of the Rangoon operation light forces swept the Gulf of Martaban to catch any Japanese ships which might attempt to escape, and early on the 30th of April three destroyers encountered a convoy of about ten small craft carrying Japanese troops. They destroyed them all.

Although the seaborne expeditionary force thus beat the Fourteenth Army by a narrow margin in the race for Rangoon, there is no

¹ The first intimation of the Japanese withdrawal, which actually took place on 23rd April, was received on 1st May, when an aircraft flying low over Rangoon read in large letters on the gaol roof 'Japs gone! Exdigitate!' The ribaldry of the composers of the message (no doubt from the Royal Air Force) was perhaps a not inappropriate piece of sarcasm over the failure of our intelligence organisation to learn about this development.

² See Map 36.

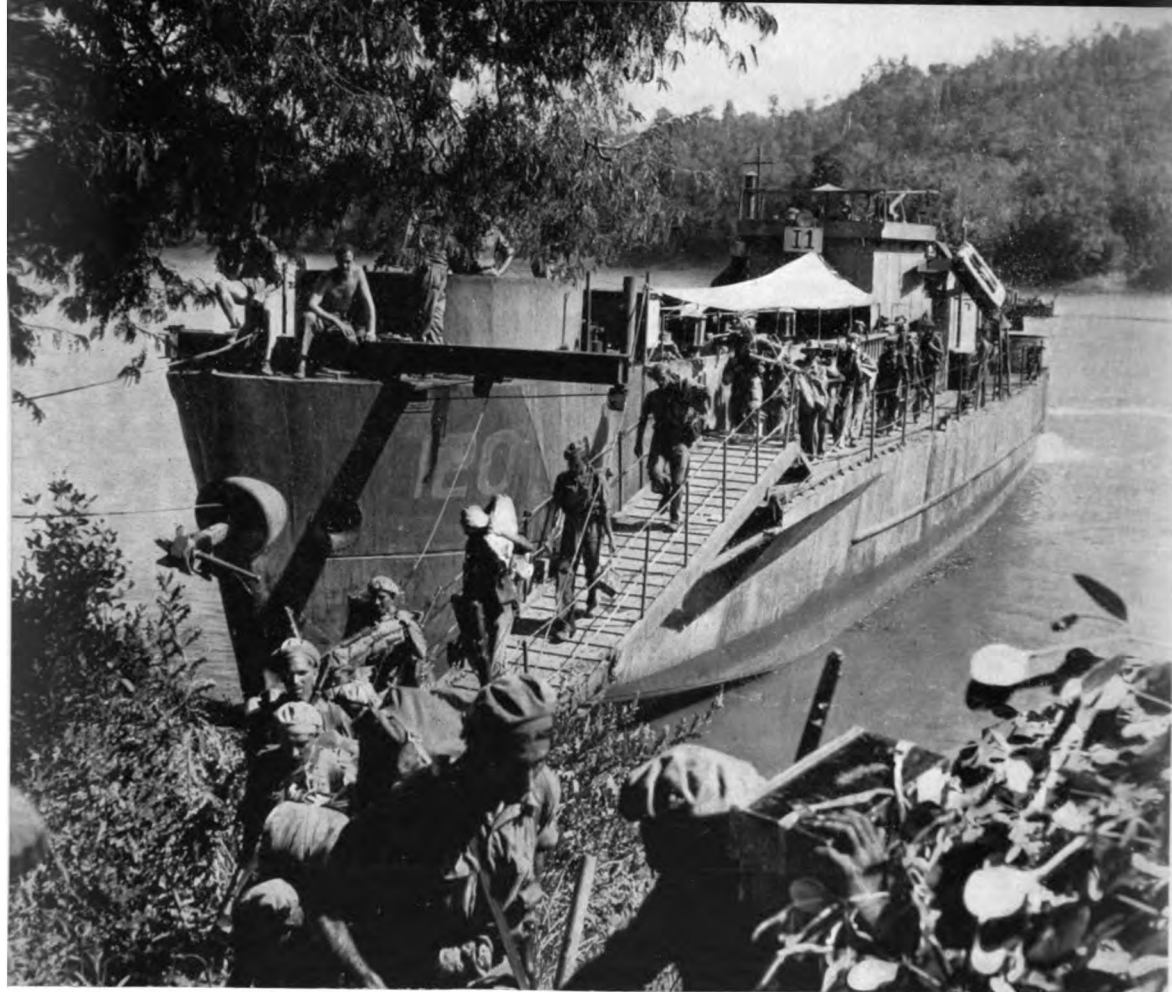


Operations in South-East Asia, 1945

The attack on Palembang, Sumatra, by aircraft of the British Pacific Fleet, 24th January, 1945.

The Third Arakan Campaign. Troops landing for the assault on Letpan, 13th March, 1945.





Operations in South-East Asia, 1945

The Third Arakan Campaign. A combined operation in a 'chaung' near Letpan, March, 1945.

Operation 'Dracula', the assault on Rangoon, 2nd May, 1945.
The assault convoys off Irrawaddy estuary.



doubt that the major share of the credit for the recovery of the great port rightfully belongs to the soldiers; for it was their spectacular advance down central Burma which caused the enemy to abandon his whole position in the Irrawaddy delta.¹ In fact the Fourteenth Army had captured Pegu, only forty miles north of Rangoon on the 1st of May, and next day pushed still further south.² On the 6th the advanced forces linked up with the troops landed from the sea.

After the fall of Rangoon there still remained over 100,000 seasoned Japanese troops in Burma; but the maritime blockade had deprived them of virtually all supplies and reinforcements, their formations were totally disorganised, and the men were starving and riddled with disease. Yet they fought on in the endeavour to break through to the Salween River.

On the 9th of May, just after the main East Indies Fleet had returned to Trincomalee from covering the Rangoon expedition, two of the submarines on patrol in the Malacca Strait sighted the heavy cruiser *Haguro*, accompanied by a destroyer and two submarine chasers, on a north-westerly course. They were actually carrying supplies for the Andaman Islands, whose garrison they had been ordered to evacuate. Admiral Walker at once left harbour to intercept the Japanese squadron; but his ships were sighted by a reconnaissance aircraft on the 11th, whereupon the *Haguro* and her consorts reversed course. The Admiral, however, expected the enemy to make a second attempt, and he therefore took his force well to the south to avoid being resighted. On the night of the 14th-15th he detached his escort carriers and the 26th Destroyer Flotilla (Captain M. L. Power) to search the waters north of Sumatra, and on the morning of the 15th our aircraft sighted the *Haguro* and her one destroyer again. They had actually turned back to the south-east from a second attempt to reach the Andamans. Captain Power at once set off with his five destroyers in hot pursuit, and at 11 p.m. the *Venus* gained radar contact at a range of thirty-four miles. The destroyers now took up an attacking formation, but the *Haguro* suddenly reversed course, and so brought about a close-range *mêlée* in which the flotilla leader *Saumarez* received several shell hits and had her speed temporarily reduced. She and the *Verulam*, however, fired their torpedoes, and in turning to avoid them the *Haguro* placed herself in an excellent position for attack by the *Venus* and *Virago*. Many torpedoes hit the Japanese cruiser, and shortly before 2 a.m. on the 16th she went to the bottom in a position some forty-five miles south-west of Penang. The enemy destroyer, which was the *Kamikaze*, suffered only slight damage and returned later to pick up the *Haguro*'s

¹ Field Marshal Sir William Slim, *Defeat into Victory*, Chapter XXI (Cassell, 1956) gives a brilliant account of the Fourteenth Army's advance to Rangoon.

² See Map 42.

survivors. Captain Power meanwhile withdrew to the north-west to get out of range of the Japanese air bases on the Malayan mainland, which were uncomfortably close. Apart from being attacked by a small number of enemy aircraft his flotilla had no further adventures, and between the 19th and 21st of May all units of the fleet returned to Trincomalee.

In June naval forces and the Liberators of the R.A.F.'s Nos. 222 and 231 Group continued to search the Andaman Sea for any sign of enemy activity; and the Liberators also reached out into the Gulf of Siam. In the former area only occasional small craft were sighted; but in the latter the bombers achieved two important successes. On the 1st of June they destroyed the submarine depot ship *Angthong* in a small port south of Bangkok, and on the 15th they sank a 10,238-ton tanker (the *Toho Maru*) off the north-east coast of the Malay peninsula during a round flight which covered no less than 2,500 miles. Meanwhile the East Indies Fleet's carrier aircraft were making photographic reconnaissance flights over southern Malaya, in preparation for the next combined operations; and on the 8th of June the submarine *Trenchant* (Commander A. R. Hezlet) scored an outstanding success by sinking the heavy cruiser *Ashigara* in the Banka Strait off Sumatra¹, in spite of the encounter having taken place in very shallow and restricted waters. This reduced the Japanese naval forces in South-East Asia to no more than a sorry remnant.

With our maritime control now virtually undisputed, the Supreme Commander was able to press ahead with his plans to assault Port Swettenham and Port Dickson, on the west coast of Malaya, which he intended to carry out in September. But the South-East Asia Command was not yet free of difficulties of the type which had frustrated so many of its plans ever since the early days; for in June the Americans did withdraw their transport aircraft, and the British Government's decision to bring home all men who had served several years in Burma meant that the most experienced formations would be seriously diluted. In fact, however, the plans to assault the Malay Peninsula from the sea were overtaken by the speed with which great developments now began to move.

¹ See Map 36.

CHAPTER XXVI

THE PACIFIC WAR

The Arrival of the British Pacific Fleet, 1st January–31st March 1945

' . . . The value of history in the art of war is not only to elucidate the resemblance of past and present, but also their essential differences.'

J. S. Corbett *Naval Operations*, Vol. III
(1938 Ed.), p. 374.

IN the last chapter on the Pacific War we left General MacArthur's amphibious force about to sail for Lingayen Gulf on Luzon, where landings were to be made with the object of seizing the central plain of that island, on which the Japanese had constructed numerous airfields.¹ The naval forces were once more under Vice-Admiral T. C. Kinkaid, U.S.N., commander of the Seventh Fleet, and the two assault forces of Vice-Admirals D. E. Barbey and T. S. Wilkinson, U.S.N., were each to land two divisions on the sandy beaches of the thirty-mile-wide gulf. The scale of the initial assaults was in fact very similar to that employed in the Leyte Gulf landings of the previous October.² Admiral Oldendorf's bombardment force was once again responsible for the preliminary softening of the defences, while no less than seventeen escort carriers provided air cover, and a group of cruisers and destroyers watched for any sign of activity by the Japanese surface ships.

Admiral Halsey took the gigantic Third Fleet to sea from Ulithi on the 30th of December 1944, with the primary object of neutralising enemy air power in Formosa, and so preventing reinforcements reaching Luzon. On the 4th and 5th of January the strike groups of McCain's Fast Carrier Task Force ranged far and wide over Formosa and other Japanese-held islands, from the Pescadores in the south to the Ryukus in the Nansei Shoto chain in the north.³ Though the weather was bad, they inflicted severe losses on Japanese aircraft and shipping.

Meanwhile on the 3rd of January the main body of the Seventh

¹ See Map 34.

² See pp. 209–211.

³ See Map 43.

Fleet had steamed through the Surigao Strait, the passage by which in the previous October Nishimura had sought to reach and destroy the Leyte invasion fleet¹, and entered the Sulu Sea, where it turned north towards Mindoro.² That evening attacks by Kamikaze aircraft began; but not until next day did they inflict any damage. An American escort carrier, the *Ommaney Bay*, was then sunk, and on the 5th no less than nine ships, including the *Australia* and *Arunta* (both of the R.A.N.) were damaged. The violence of the Japanese reaction caused MacArthur to ask for the Third Fleet's help in neutralising the airfields in central Luzon—a responsibility which had originally been placed on the U.S. Army Air Force; and on the 6th McCain's carrier air groups accordingly struck at them. Next day Halsey switched his blows to the airfields around Lingayen Gulf, to which the covering escort carriers had been unable to devote adequate attention while constantly defending themselves and the invasion fleet against Kamikaze attacks.

The bombardment force, minesweepers, and escort carriers all arrived off the entrance to Lingayen Gulf early on the 6th, and at once set about their various duties. Heavy attacks from the air, mostly by suicide planes, neither deterred them nor made any appreciable difference to the success with which they accomplished their tasks; but two of the bombarding battleships were hit, and Admiral Sir Bruce Fraser, commander of the British Pacific Fleet, who was watching proceedings from the bridge of the *New Mexico*, had a narrow escape when a Kamikaze crashed into her superstructure.

Next day, the 7th, the bombardment ships entered the gulf and opened fire on the defences. Enemy air activity now decreased considerably, thanks to the attention which Halsey's carrier aircraft and the U.S. Army Air Force were devoting to the Japanese airfields; but the unfortunate *Australia* received further hits from Kamikazes on three successive days and suffered over 100 casualties. She and other badly damaged ships were finally ordered to withdraw.

Meanwhile the two assault convoys were wending their way through the Surigao Strait and up the west coasts of Mindoro and Luzon, protected by cruisers and destroyers and covered by carrier-borne and shore-based aircraft. Suicide planes tried to molest them, but they made no difference to the convoys' steady progress towards Lingayen Gulf, which they entered in the early hours of the 9th of January. That same day Halsey, having refuelled his carriers, struck again at Formosa, thus effectively preventing air reinforcements being flown to Luzon.

¹ See pp. 217–219.

² See Map 34.



Although the weather was generally unfavourable during the early days of January, conditions on the beaches in Lingayen Gulf were reasonably good when, at 9.30 a.m. on the 9th, the assault craft touched down. Opposition was so slight that by nightfall 68,000 men had landed and the beach-head was firmly held. The southward advance towards Manila, 100 miles away, now started; rapid progress was made, and the Japanese defenders were pressed back into the mountains, where Filipino guerillas took a constant toll of them. As the U.S. Army captured the Japanese airfields on the central plain the U.S. Air Force quickly established itself on them, and by the 17th it was ready to take over the protection and support duties so far carried out by the escort carriers. Before the end of the month Japanese air power on Luzon had been virtually annihilated; very few aircraft had escaped to Formosa, and over 800 wrecked planes had been counted on the captured airfields. The supply and follow-up convoys were meanwhile reaching Lingayen Gulf, escorted and covered by Kinkaid's ships, with scarcely any interference. Nor did the use of suicide explosive boats (called 'Hayabusa') against the offshore shipping on the 9th-10th of January produce significant results.

After the air onslaught on Formosa, made just before the landings in Lingayen Gulf, Halsey carried out a project he had long cherished. On the night of the 9th-10th he took the greater part of the Third Fleet through the Luzon Strait and broke undetected into the South China Sea—waters where no Allied surface warships had appeared since the early days of 1942. At dawn on the 12th he reached the coast of Indo-China, and launched his strike aircraft at the offshore shipping and the principal ports and bases. Surprise was complete, nine loaded tankers out of a fifteen ship convoy, as well as the escorting cruiser *Kashii* were sunk, and heavy damage was also done on shore at Saigon and Camranh Bay.¹ In all some 133,000 tons of Japanese shipping was destroyed on that day. Halsey then refuelled from tankers which had followed him into the South China Sea, and on the 15th he struck at Formosa again—this time approaching from the south-west. His carrier aircrews also ranged over the principal ports on the China coast from Hainan in the south to Amoy and Swatow about 600 miles to the north-east, and including Hong Kong, where the attackers encountered stronger resistance than anywhere else. Throughout these forays the weather was continuously bad, and this contributed a good deal to the comparatively heavy losses (170 aircraft) suffered by the Third Fleet. But to the Japanese the impunity with which Halsey's ships had scoured those waters, and the very heavy losses of merchant ships they inflicted, must have

¹ See Map 36.

appeared highly ominous¹; for it showed that their homeland could now be cut off at will from all their southern possessions.

On the night of the 20th of January Halsey took his fleet safely back through the Luzon Strait, in spite of having to pass within easy range of the Formosan airfields; and next day he struck again at the ports and airfields of that island. The Japanese reacted vigorously this time, and two carriers were hit and damaged by Kamikazes; but once again the American naval aircraft did great execution. There is no doubt that their repeated blows frustrated Japanese attempts to build up their strength in Formosa in order to strike back at MacArthur's invasion forces in the Philippines. After making a sweep over the Nansei Shoto group², mainly to obtain photographic intelligence, Halsey arrived at Ulithi on the 25th of January; and so ended the five-month period during which he had held the principal sea-going command in the Pacific. His fleet claimed to have destroyed 7,000 aircraft, about ninety warships of all types, and nearly 600 merchantmen totalling one million tons during that period; and if the contemporary claims were on the high side, he had certainly given a convincing demonstration of the capabilities of carrier aircraft working from a resolutely led and highly efficient fleet. Halsey now handed over his command to Spruance, McCain transferred the Fast Carrier Task Force back to Mitscher, and the Third Fleet became the Fifth Fleet once again.

We must now return to the embattled forces on Luzon, which were encountering stronger resistance as they approached Manila towards the end of January. Rather than continue with expensive frontal attacks MacArthur decided to exploit his maritime power to make new seaborne landings and so outflank the defenders. Accordingly on the 29th of January the Seventh Fleet put 35,000 men ashore in Subic Bay, to cut off the Bataan peninsula; and two days later a smaller force landed a short distance south of the entrance to Manila Bay at Nasugbu.³ These assaults on the flank and in the rear of the defenders made their situation hopeless; but they fought on stubbornly until, on the 23rd of February, the Americans recaptured Manila. Meanwhile they had launched a combined paratroop and amphibious assault against the fortress of Corregidor at the entrance to Manila Bay; but it took ten days to clear the whole island, and the last of the Japanese garrison destroyed themselves by blowing up the caves and tunnels with which it was honeycombed.

Although isolated enemy groups held out in Luzon until the end

¹ In the ten days of operations in the South China Sea the Fast Carrier Task Force sank 49 ships (over 500 tons) totalling 260,000 tons.

² See Map 43. The Japanese suffices 'Shoto', 'Retto' and 'Gunto' all mean a group of islands. The various groups are here given their most common Japanese titles.

³ See Map 37.

of the war, the main object of the expedition to the Philippines was now accomplished. Nor did the Americans lose any time over reaping further benefits from what they had won; for in February they extended their hold by capturing the Palawan Islands; and in March they landed on Panay, Cebu, Negros and Mindanao in the Philippines, and also on the islands of the Sulu archipelago.¹

Thus did General MacArthur return in triumph to the islands from which he had escaped in defeat nearly three years earlier, and on which his eyes had ever since been focused. He and his men had travelled by a long and arduous road since those days, but after he had established himself firmly on the north coast of New Guinea in the autumn of 1943 his progress had become remarkably rapid.² If the Central Pacific Forces had aided him greatly by first gaining and then exploiting maritime control in their vast theatre, and if it was they who had, by inflicting a series of heavy defeats on the Japanese Navy, made MacArthur's strategy possible, he himself had repeatedly employed the techniques of combined operations with great skill. It is, perhaps, as a brilliant exponent of that type of warfare that MacArthur has gained a firm place in history.

Well before the capture of Manila the U.S. Chiefs of Staff were considering the next leap, which was to be made directly towards the ultimate object of the Japanese mainland. In October 1944 they had told Admiral Nimitz to prepare plans to capture one or more of the islands in the Nansei Shoto chain, which stretches across 800 miles of ocean from the southern end of Kyushu in Japan almost to the northern end of Formosa³, on about the 1st of March 1945. The two southernmost groups of islands in that chain, Sakishima Gunto and Okinawa Gunto, are known collectively as the Ryukus; while the remainder, of which Amami Gunto is the best known, are called the Satsunan Islands. The largest island in the whole chain, and the one which offered by far the greatest possibilities for the construction of airfields and a naval base, was Okinawa; and as the U.S. Chiefs of Staff held that ample airfields from which fighter-escorted heavy bombers could attack Japan, and a naval base where a big invasion force could assemble, were essential to the assault on the enemy mainland, they finally named Okinawa as Nimitz's objective.⁴ The stubborn Japanese resistance on Leyte, however, forced a postponement of the Allied plan first to the 15th of March, and finally to the 1st of April 1945.

¹ See Map 37.

² See Part I of this volume, pp. 340-342.

³ See Map 43.

⁴ The first intention had been to invade Formosa, but that was abandoned in favour of Okinawa early in October 1944. See J. Ehrman, *Grand Strategy*, Vol. VI, pp. 206-211.

On the same date that the U.S. Chiefs of Staff decided to assault Okinawa they also ordered the seizure of Iwo Jima in the Bonin Islands, the group of small volcanic islands which stretches southwards from Tokyo Bay.¹ Iwo Jima was only 640 miles from the enemy capital; and although its surface was tiny (only $4\frac{1}{2}$ by $2\frac{1}{4}$ miles) it was, except for the volcano at its southern end, comparatively flat. Moreover it lay almost exactly half way along the route which bombers flying between Saipan and Tokyo had to follow; and as the Japanese had constructed three airfields on the island, the American bombers, which were unescorted throughout their 2,600 mile flights, either had to make a detour to avoid it or accept the risk of attack by the fighters based on it. If, however, the Allies could gain possession of the island the bombers could be escorted right to their targets, and damaged planes could use its airfields for emergency landings. Because it was necessary to use the same naval vessels and craft in the assaults on both Okinawa and Iwo Jima, and the Americans could not be ready to attack the former until the middle of March, they decided to seize Iwo Jima first. The date selected was the 19th of February.

Though we knew that the island was well defended, the thoroughness and extent of the Japanese preparations exceeded expectations; for they had dug a honeycomb of inter-connected underground positions, and had constructed many blockhouses within mutual supporting distance of each other, as well as a large number of well-concealed gun positions. Ever since the middle of 1944 the U.S. Pacific Fleet had intermittently bombarded Iwo Jima and the neighbouring islands from the sea and air, and during the two months preceding the assault the U.S. Army Air Force had raided them almost daily; but the damage inflicted had been slight, and the airfields were never put out of action even for as much as a day. The Japanese had also managed to reinforce their garrison, and by the date of the landing it numbered about 22,000 men. Against them the Americans pitted 70,000 marines, and almost the entire strength of the Fifth Fleet.

The assault shipping loaded in the distant Hawaiian Islands, from which the convoys sailed on the 28th of January and arrived at Saipan a fortnight later. There final rehearsals took place, after which the expedition sailed for Iwo Jima on the 16th of February. On that day the bombardment group of battleships, cruisers and destroyers started the usual process of softening the defences, while a large body of minesweepers searched the approach waters. The chief interest in this now familiar pattern was that, for the first time, all the preliminaries to the assault were co-ordinated by a single

¹ See Map 43.

'Amphibious Support Force Commander', Rear-Admiral W. H. P. Blandy, U.S.N., who flew his flag in a special headquarters ship.

Meanwhile the Fast Carrier Task Force, now larger than ever¹, had sailed from Ulithi on the 10th to support the assault on Iwo Jima by making heavy raids on the network of airfields around Tokyo. Attacks started on the 16th, from a position some 120 miles south-east of the targets. Although the weather was indifferent and fighter opposition was at first strong, enormous damage had been done by the time that Mitscher switched his ships to give direct support to the assault forces on the 18th.

To return to the threatened island, the first long-range surface ship bombardments, though very heavy, neither provoked the Japanese shore gunners into replying, nor made any appreciable impression on the defences; and low cloud interfered seriously with both the spotting aircraft and the striking forces sent out from the nine escort carriers in Admiral Blandy's command. Nor did the minesweepers, though they searched to within three miles of the beaches, provoke any appreciable reply from the enemy. Throughout the first day, the 16th of February, the defenders of Iwo Jima maintained an almost eerie silence. On the 17th, however, when underwater demolition teams reconnoitred the beaches, the supporting landing craft came under heavy fire, and all twelve of them were hit. The close inspection of the beaches did, however, reveal that there were no underwater obstacles; and as the sweepers had not found any mines, conditions appeared suitable for the assault. Meanwhile the bombarding warships had closed the shore in order to engage the batteries which had recently revealed themselves, and the heavy ships' gunfire probably took effect for the first time. All next day, the 18th of February, the bombardments continued, and in the early hours of the 19th the assault convoys arrived off the island. So far Japanese opposition had been slight, and the losses suffered by the Americans almost negligible. Undoubtedly it was the escort carriers' raids on the adjacent islands, and the attention given by the Fast Carrier Task Force to the airfields around Tokyo which contributed most to the unexpected immunity from air attack enjoyed by the offshore shipping. It does, however, seem surprising that the Japanese made no serious attempt to attack the transports with their submarines. There being no proper harbour on Iwo Jima, nor any anchorage which could be developed to give shelter to shipping, all unloading had to take place over the beaches; and in spite of the

¹ In spite of the losses and damage recently suffered from Kamikazes off the Philippines and Formosa, Mitscher's strength had increased to 16 carriers with 1,170 aircraft embarked in them, 8 fast battleships, 18 cruisers and 79 destroyers. So great had been the output of the American shipyards that only four of these ships had been in the fleet at the time of Pearl Harbour.

continuous patrols maintained around the invasion fleet it did present a very favourable target for submarine attack. Yet the only attempt made by the Japanese was to send down five large submarines carrying 'Kaiten' suicide midgets; and they accomplished nothing at all.

While Mitscher's ships were raiding Iwo Jima and the other Bonin Islands from the 19th to 23rd of February, they received little attention from Japanese aircraft, which only attacked once in some strength—on the night of the 21st–22nd. The veteran carrier *Saratoga*¹ was then hit by three bombs and no less than four Kamikazes, and the escort carrier *Bismarck Sea* was sunk. That attack marked, however, the limit of Japanese successes off Iwo Jima; and on the 25th, after replenishing and refuelling at sea, Mitscher struck again at the Japanese mainland—this time from a position to the west of Nanpo Shoto.² Though rough seas and bad weather considerably reduced the effect of these new blows, the appearance of great numbers of American carrier aircraft over their homeland caused consternation in the Japanese camp; for Mitscher's attacks had proved not only that he could now operate within easy striking distance of Tokyo itself, so adding the great power of his carrier-borne aircraft to that of the heavy Army bombers which they had already found themselves unable to deal with. Thus the latter days of February 1945 marked an important milestone on the road leading to the defeat of Japan; and once again it was to carrier air power that the accomplishment was mainly owed. After photographing the Nansei Shoto to provide intelligence for the Okinawa invasion forces, Mitscher took his ships back to Ulithi.

Meanwhile the U.S. marines had assaulted Iwo Jima at 9 a.m. on the 19th of February under cover of heavy naval and air bombardments; but conditions on the beaches, where heavy surf was breaking, proved very difficult. Many landing craft broached to and were flung ashore broadside on—sometimes even piling on top of each other; the sand proved so soft that tanks and vehicles quickly bogged down, and Japanese resistance was fanatical. Though progress on shore was both slow and costly, and at many points the assault troops were still pinned to the ground just off the beaches, by nightfall 30,000 men had landed. Next day the marines forced their way slowly inland, and captured the southernmost airfield; but the Japanese continued to contest each yard of ground savagely, and not until the 16th of March were the last defenders of the tiny island eliminated. No less than 4,000 Americans lost their lives on Iwo Jima, and their total casualties of 21,000 were only about 1,000 fewer

¹ See Vol. II, pp. 222, 226–227 and 415, regarding her earlier career.

² See Map 43.

than those suffered by the Japanese garrison. Iwo Jima undoubtedly produced one of the fiercest of the long succession of grim struggles for the possession of small islands which had started with the assault on the southern Solomons in August 1942.¹

As early as the 6th of March American fighters landed on the first of the captured airfields, and ten days later a second one was in use. The landing grounds on the island finally proved enormously valuable, both as fighter bases and for emergency landings by the long-range bombers which were raiding Japan. By the end of the war no less than 2,400 bombers had come down there, and Admiral King estimated that the lives thereby saved were more numerous than those lost in the assault.²

Early in March 1945, even before the whole of Iwo Jima had been secured, as many ships and craft as possible were released to prepare for the assault on Okinawa (operation 'Iceberg'); and as the British Pacific Fleet first took its place alongside the American Navy in that undertaking, which was a much greater affair than the invasion of Iwo Jima, it will be appropriate to review the problems which the Admiralty and Admiral Sir Bruce Fraser, its Commander-in-Chief, had to solve before it was possible for a powerful force of ships flying the White Ensign to join in the campaign in the Central Pacific.

The main problem was, as already indicated, that of organising the supplies needed by the fleet. The Americans had surmounted the difficulty of replenishing their ships while remote from any fixed base by building up a huge 'Fleet Train' of oilers and supply vessels of all types. Convoys ran regularly, generally from the west coast of America, to whatever intermediate bases the American fleet was using³, and there the Fleet Train ships would fill their holds with fuel, food, stores and ammunition of every conceivable variety. In the intermediate bases the Americans also established large and highly efficient service and repair organisations to deal with action damage sustained by the fighting warships, or defects from which they were suffering; and these mobile repair yards undoubtedly contributed a great deal to the high sea-keeping capacity of their fleets. The loaded Fleet Train ships would follow the fighting task forces to within a few hundred miles of the scene of operations. At intervals the fighting ships would temporarily withdraw to a rendezvous with the Fleet

¹ See Vol. II, pp. 223-229.

² See *The War Reports of Marshall, Arnold and King* (Lippincott, 1947), p. 662.

³ An intermediate base may be described as one in the forward area but some distance to the rear of the advanced bases, which were in the zone where fighting was actually taking place.

Train, refuel and replenish with stores and ammunition, and then resume active operations.

By the beginning of 1945 the whole vast American supply organisation was working with admirable efficiency, and it was plain that the British Pacific Fleet's system should be based on the same well-tried principles; but the real difficulties only began to arise when the Admiralty started to try to find the ships and men needed for such purposes. Even though we realised that we could never emulate the Americans in either numbers or modernity of ships, it was extraordinarily difficult to begin the creation of a Fleet Train and to get stores moving to the east in large quantities, what time we still had great campaigns on our hands in north-west Europe and the Mediterranean. It was obvious that the supplies needed by the B.P.F. had to be built up in rearward bases in Australia well before its arrival; and that our Fleet Train had to be complete, loaded and ready before the fighting ships could undertake their first protracted operation. Yet the ugly truth was that, even after we had cut British imports to the unprecedentedly low rate of twenty-four million tons annually¹, and had rationed all food and goods needed by the civilian population more stringently than ever before, we could not produce all the ships needed, nor find the men to man them; for, as mentioned earlier, by 1945 Britain was experiencing an extremely acute manpower crisis.² In some quarters, and especially in America, there was a feeling—which occasionally found expression at this time—that the chief cause of our difficulties was a lack of foresight in planning to substitute a floating and mobile supply organisation for the fixed bases on which our fleets had relied for several centuries; but scrutiny of the Admiralty's records shows that there is no substance whatever in such charges. Planning to get the fleet's supplies afloat had, in fact, been in progress since 1936, and it was only the harsh realities of the war, and the very heavy losses from which our Merchant Navy had suffered, which had prevented more being done to implement the plans. It would be tedious to include here a full account of the various measures considered or taken by the Admiralty between 1936 and 1945; but in order to make both the problem and the manner in which it was tackled available to posterity a full account has been included in an Appendix to this volume.³

There was never any doubt that the rebuilding of British maritime power in the Far East would have to begin in Australia—which country had in fact served the Americans themselves in that manner in the crisis of 1942. Nor were the Australian government and people

¹ In pre-war days British imports ran at a level of about 60 million tons annually.

² See p. 10.

³ See Appendix P.

slow to express their entire willingness to co-operate in that purpose; for Admiral Fraser, whose arrival at Sydney in December 1944 has already been mentioned¹, was soon able to report to the Admiralty the keen pleasure felt by the Australians at the prospect of again seeing a powerful force of British warships. But, he added, realistically, he doubted whether 'they had any idea of the implications behind the basing of the fleet' in their country. The Admiralty had meanwhile sent Vice-Admiral C. S. Daniel and a strong naval mission to America for preliminary consultations on problems concerning the supply and administration of the fleet. After visiting the main Pacific bases Admiral Daniel came on to Australia and assumed the title of Vice-Admiral, Administration, British Pacific Fleet; and that appointment, if unspectacular compared with command of a fighting squadron, was certainly one of the most arduous to be allocated to a British flag officer during the entire war.

By January 1945 a considerable number of merchantmen and auxiliaries—though many fewer than the Admiralty considered necessary, and of far less suitable types than they had sought—had arrived in Australia, where Rear-Admiral D. B. Fisher was already installed as Rear-Admiral, Fleet Train. Some of these ships flew the White Ensign, others the Blue Ensign of the Royal Fleet Auxiliaries; some were specially converted chartered merchantmen which flew the Red Ensign, while several came from the Merchant Navies of other Allied countries and flew their national colours. Nor were the crews any more homogeneous than their vessels, for there were some ships manned almost entirely by Lascars or Chinese. Small wonder that our American Allies, who had designed and built most of their supply ships specially for the purpose, and had commissioned and manned them all as warships, were puzzled over the variety of flags flown in our Fleet Train, and found difficulty in understanding why we accepted the complexities of administration involved in the presence of ships of so many different services.

It was natural that one of Admiral Fraser's greatest anxieties should have concerned the adequacy of his floating supply organisation; for at the time when agreement on the participation of the B.P.F. in the main offensive against Japan had been reached² we had accepted the principle that, while its ships would be allowed to draw on American surplus stores, they would be self-supporting in all respects except bulk fuel oil drawn from shore tanks. From the operational point of view the most serious deficiencies were the shortage of fast tankers able to keep up with the fighting squadrons, and the lack of aircraft transport ships to carry Fleet Air Arm spares and

¹ See p. 203.

² See p. 188.

replacements from the rear to the forward bases; but escort carriers soon began to arrive, and some were used to remedy the latter deficiency. Moreover the Commander-in-Chief was soon able to tell the Admiralty that 'the American logistic authorities have interpreted self-sufficiency in a very liberal sense'; and their generous attitude, combined with the skill with which Rear-Admiral Fisher and his staff organised, administered and operated their heterogeneous collection of ships, enabled the B.P.F. to work alongside the great American task forces with a reasonable measure of self-sufficiency—even though the margin of safety was always narrow.¹

Another matter which caused the Admiralty and Admiral Fraser a good deal of concern was the possible reaction of the men of the B.P.F., and of the civilian crews of the supply ships, to their despatch to a new and remote theatre of war at the time when the fruits of more than five years of very arduous struggle against Germany were plainly about to be harvested. It would, after all, not have been unreasonable for them to feel that the final defeat of Japan could safely be left to the Americans, whose strength was plainly ample for the purpose, and whose country had not experienced any such exhausting trials as those to which Britain had been subjected. The Admiralty, foreseeing the possibility that such questioning doubts might arise, had actually introduced much more favourable conditions of service for all men sent to the Pacific; but in fact neither in the fighting fleet nor among the crews of the requisitioned merchantmen were any such murmurings heard, and they entered on the new phase of the war with a zest which finally aroused the admiration of their American comrades-in-arms.

In December, 1944, when Admiral Fraser visited Pearl Harbour², he and Admiral Nimitz signed an agreement that Manus in the Admiralty Islands should serve the B.P.F. as an 'intermediate base' between Australia and the theatre of active operations, until such time as a more advanced base could be set up in the Philippines. It was to Manus therefore that Admiral Fisher very soon began to despatch his loaded vessels from Australia; and a short while later they also began to work between that harbour and Leyte Gulf, which had been designated by Admiral Nimitz as the B.P.F.'s advanced anchorage. One disadvantage of Manus was that, although the Americans had accomplished wonders in creating a large base there out of virtually nothing, and had readily agreed to the B.P.F. using their facilities, it had what Vice-Admiral Sir Bernard Rawlings, second-in-command to Admiral Fraser, called the most objectionable climate that he had ever known. In his report to the Admiralty

¹ Appendix P. gives the number and function of all ships allocated to the B.P.F.'s Fleet Train in 1945.

² See p. 203.

he expressed his bewilderment regarding 'under what circumstance and by whose whimsical conception these islands should have been named in honour of Their Lordships'.¹

So much for a brief outline of the supply problems which had to be overcome before Admiral Fraser's fleet could begin to work as a Task Force of the U.S. Fifth Fleet. We must now turn to the fighting warships allocated to the B.P.F.

It was evidently with some relief that Admiral Fraser was able to tell the Admiralty that his apprehensions regarding the welcome which our Ally would extend to his fleet had been entirely dispelled. Early in 1945 he reported that Admirals Nimitz and Spruance had both warmly welcomed the prospect of co-operating with the British. But a good deal of uncertainty still surrounded the vital question of how and where his ships would be employed, and until that was known it was hardly possible to make firm arrangements for their supply. General MacArthur wanted to use the B.P.F. immediately in the operations then in progress in the Philippines, and subsequently against North Borneo; but Nimitz wanted to include Fraser's ships in the covering forces which were assembling for the assault on Okinawa. The U.S. Navy was indeed reluctant definitely to commit what it regarded as its most flexible reserve, and the U.S. Chiefs of Staff were unable to decide between the two claimants. Not until mid-March, and after a good deal of pressure from London, did they decide that Fraser's ships should take part in operation 'Iceberg'; and even then they inserted a proviso that they could be transferred elsewhere at seven days notice.² These hesitations did, of course, make the planning of the Fleet Train's work more difficult than it need have been.

On the 4th of February, while the discussions on the employment of the B.P.F. were actually in progress, Rear-Admiral Sir Philip Vian (commanding the First Aircraft Carrier Squadron) arrived at Fremantle with the main body of warships, fresh from their successful attack on Palembang in Sumatra.³ It consisted of four fleet carriers (*Indomitable*, *Victorious*, *Indefatigable* and *Illustrious*, whose total aircraft complement was 238), the battleship *King George V*, the cruisers *Argonaut*, *Black Prince* and *Euryalus*, and ten destroyers. This was the first time during the war that four large British carriers had been

¹ In fact Captain Philip Carteret arrived at these islands in the sloop *Swallow* on 17th September 1767, and received a very unfriendly reception from the natives. After describing their hostility he concluded his account with the remark 'I called them the Admiralty Islands . . .'; but his report leaves open the question whether the hostility of the natives towards a British naval officer had any influence on his selection of the name. (See Hawkesworth, *Voyages round the World 1764-1767*, Vol. I, p. 625, printed in London, 1773).

² See Ehrman *Grand Strategy*, Vol. VI, pp. 223-224, for a full account of these discussions.

³ See pp. 309-310.

able to work together, and Admiral Vian had used the opportunity afforded by the recent attacks on Sumatra to practice American tactical dispositions and procedures, and to exercise large numbers of aircraft together. At Fremantle Admiral Rawlings hoisted his flag in the *King George V* as second-in-command to Admiral Fraser, and then the whole fleet pushed on quickly to Sydney, where it arrived on the 10th and 11th of February and received a heart-warming welcome from the Australians. After a fortnight's stay in port, spent in replenishment and in preparing for active operations, Admiral Rawlings took the fleet north to Manus. The *Illustrious*, which had developed defects, had to be left behind, but the battleship *Howe*, the cruisers *Gambia* (R.N.Z.N.) and *Swiftsure*, and four more destroyers had joined at Sydney. After some hesitation Admiral Fraser had decided to establish his headquarters ashore at that base, rather than fly his flag afloat; and to leave the exercise of tactical command at sea to his second-in-command. This decision was based not so much on the desire to avoid the difficulties which might arise through Fraser being senior to the American Admirals under whom his fleet was to work, as on the need for him to control and co-ordinate the innumerable day to day problems concerning operations, administration, and logistics which were certain to arise.

On the 15th of March Rawlings signalled to Admiral Nimitz, from his flagship at Manus, 'I hereby report Task Forces 113 and 112 in accordance with orders received from C-in-C, B.P.F.'¹, and added that 'it is with a feeling of great pride and pleasure that the B.P.F. joins the U.S. Naval Forces under your command'. To that message Nimitz replied that 'The U.S. Pacific Fleet welcomes the British Carrier Task Force and attached units, which will greatly add to our power to strike the enemy, and will also show our unity of purpose in the war against Japan'. Four days later Rawlings took the whole fleet to Ulithi, where he replenished again and received his final orders for the assault on Okinawa. On the 23rd he sailed to the north, his fleet now known as Task Force 57.

Thus did the British Government and Admiralty fulfil a purpose which had long occupied an important place in their plans. Bearing in mind the difficulties involved, especially in the matter of bases and supplies, the accomplishment was a considerable one. Its significance lay in the fact that the first steps had now been taken to restore British maritime power in the vast and wealthy theatre from which we had been so ignominiously expelled in the early days of 1942. But to those who remembered the events which had led to those disasters, and the consequences of the loss of the *Prince of Wales* and *Repulse* and the fall

¹ Task Force 113 consisted of the aircraft carriers, battleships, cruisers and destroyers of the B.P.F., and Task Force 112 consisted of the Fleet Train.

of Singapore, there was bitterness in the occasion as well¹; for had we been able to give Admiral Phillips a balanced fleet, such as Admiral Rawlings now controlled, the entire history of the war in the Far East might well have been different. The only lesson to be drawn is, of course, the old one that a nation which depends for its existence on maritime power cannot prosper if it denies itself the instruments needed to wield it effectively.

While the B.P.F. was moving north to its new theatre of operations, the American Fast Carrier Task Force was repeating its heavy raids on the Japanese mainland, and the naval support force for the assault on Okinawa had sailed from Ulithi shortly before Rawlings's ships arrived there. The stage was now set for yet another island invasion, planned on the pattern which had proved its efficacy time and again in the Pacific.

¹ See Vol. I, pp. 553-570, and Vol. II, pp. 5-33.
W.S.—VOL. III, PT. 2—Z

CHAPTER XXVII

THE OFFENSIVE IN THE PACIFIC

1st April–30th June 1945

'Command of the sea is the indispensable basis of security, but whether the instrument that commands swims, floats or flies is a mere matter of detail.'

Richmond, *Statesmen and Sea Power*
(Oxford U.P., 1946), p. 136.

WE left the Pacific theatre at the time when, in March 1945, preparations for operation 'Iceberg', the invasion of Okinawa in the Nansei Shoto, were in full swing. The plan, though cast on a greater scale than ever before in the Pacific followed the general pattern which had served the Americans so well in many earlier assaults from the sea; but the increased distance from the rear bases accentuated all the old problems of transport and supply, and enemy resistance was expected to be very stubborn in all three elements. The size of the Japanese garrison, and the proximity of the island to mainland bases from which it could be reinforced, made it almost certain that the campaign would be protracted; and, from the naval point of view, there was never any doubt that suicide aircraft, which had recently caused much trouble and inflicted considerable losses in the Philippines¹, would again constitute the chief threat. In fact both the military garrison and the air strength available to the Japanese were substantially greater than the contemporary estimates; and had the truth been known in Allied circles it would have done nothing to allay the apprehensions felt over the hazards involved in carrying out large-scale landings, and sustaining the invasion forces, what time the ships on which all depended were exposed to constant attack, and far from any permanent repair bases. Throughout the war precise intelligence regarding the state of Japanese defences had been hard to come by, and in the case of Okinawa we had to depend almost entirely on photographic reconnaissance to provide it. In the autumn of 1944 and the early days of the following year American aircraft had taken many excellent photographs, covering the whole

¹ See p. 332.

group of islands; and shortly before the invasion they took still more with the object of discovering recent changes in the defences. These new photographs revealed that by far the heaviest defences were in the southern half of the main island, where five airfields had been constructed; and that the northern half, which contained little of military importance, was only lightly held.¹ The garrison of the main island was estimated to consist of 55,000 combatant troops, a figure which was soon to be proved far too low; and other islands in the same group also appeared to be strongly held. On the bright side, however, it was reasonable to assume that, after the severe drubbing the Japanese Navy had suffered in the battles of the Philippine Sea and Leyte Gulf², its surface ships would be in no condition to intervene seriously. We anticipated, correctly, that tip and run raids and attacks by suicide craft would mark the limits of its capacity; and shortage of oil fuel, now become critical, actually made it very difficult for the Japanese to send even their few effective major warships to sea at all. On the other hand the Allied authorities realised that the Japanese would contest possession of Okinawa with a fanaticism fully equal to that which had marked their defence of more remote islands, and would employ every possible means of attack against the invasion fleet; for they could not be unaware that, if they lost the island, the whole of their homeland would be brought within range of the heavy bombers which would be able to work from its airfields. In fact the Japanese high command held that, in the conditions then prevailing, their chief hope of defeating the invasion lay in the widespread employment of aircraft and light surface vessels on suicide missions. Though they had by no means abandoned more conventional methods of attack, they therefore concentrated a great proportion of their dwindling human and material resources on the production of 'Kamikazes' and suicide craft; and to further that policy they placed certain Army air units, as well as the naval air and surface formations allocated to the defence of the Nansei Shoto, under the tactical command of Admiral Toyoda, Commander-in-Chief of the much depleted Combined Fleet.

On the Allied side the command organisation in the Pacific had not been changed since the early days of the campaign. Nor had Admiral Nimitz's control of the central Pacific forces and General MacArthur's of the south-west Pacific been integrated under one Supreme Commander, as had been done in the European theatres and in South-East Asia. On the 6th of April, however, the U.S. Joint Chiefs of Staff placed all Army resources in the Pacific under MacArthur, and all naval forces, except those in Alaskan and south-

¹ See Map 44.

² See pp. 193-193 and 211-236.

east Pacific waters, under Nimitz.¹ It was the intention of the U.S. Chiefs of Staff to 'charge either General MacArthur or Admiral Nimitz with the overall responsibility for conducting specific operations or campaigns'.² Though this created what amounted to a dual supreme command in the main theatre, with the U.S. Chiefs of Staff retaining responsibility for the broad direction of the war, the centralisation of operational control did not actually go very far; for Admiral King, the Chief of Naval Operations, retained the right to reallocate naval forces between the central and south-west theatres. Indeed the attempt to achieve a measure of amalgamation between the two previously independent theatre commanders seems to have produced some confusion in the chain of high responsibility. It certainly caused perplexity to Admiral Fraser, of the British Pacific Fleet, regarding the authority to which he himself was ultimately responsible.

In essentials the plan for the invasion of Okinawa was simple. The first step, to be carried out before the main landings, was to be the seizure of the Kerama Retto about twenty miles to the west of the southern end of Okinawa itself³, where an advanced replenishment and repair base, as well as a seaplane station, were to be established as quickly as possible. Then, at 8.30 a.m. on the 1st of April, four divisions were to land close abreast each other on beaches at Haguchi on the south-west coast of Okinawa; while a diversionary landing, which could at need be turned into an actual assault, was to be staged on the other side of the island. To provide against the possibility that conditions of wind and sea would make landings on the west coast impracticable, the plan provided for the main assault to be switched to the opposite coast. After the success of the main landings was assured, other outlying islands in the group were to be seized.

Responsibility for maritime operations in the whole area lay with Admiral Spruance's Fifth Fleet; but, subject to his general authority, the expeditionary force was placed under Vice-Admiral R. K. Turner, whose experience of combined operations stretched back to the Solomons' campaign of 1942.⁴ He was not only to carry out the actual assaults but to initiate the development of the new bases; and he was to remain in local command off Okinawa until Spruance was satisfied that the amphibious phase had been completed. The

¹ There was, however, an important reservation to this decision; for the U.S. Chiefs of Staff kept the Twentieth U.S. Army Air Force (General H. H. Arnold) under their own direct control. This force comprised two Bomber Commands—the XX, which was based in India, and the XXI, which was in the Marianas. Nimitz was, however, given authority to direct the operations of the latter in emergency, which power he exercised in mid-April to switch their effort from industrial targets to the Kyushu airfields (see p. 350).

² See Ehrman, *Grand Strategy*, Vol. VI, pp. 226–227 (H.M.S.O., 1956).

³ See Map 44.

⁴ See Vol. II, pp. 222 and 223–224.

scale of the expedition, and the size of the forces allocated to Admiral Turner, which numbered more than 1,200 warships, auxiliaries and combined operations vessels, are best shown in tabular form.

*Table 39. The Okinawa Expeditionary Force (Task Force 51)
April 1945*

The Expeditionary Force was divided into the following groups:

Western Islands Attack Group
Southern Attack Force
Northern Attack Force
Amphibious Support Force
Demonstration Group
Gunfire and Covering Force
Floating Reserve

The ships allocated to the above forces were as follows:

Battleships	10	Transports	134
Heavy cruisers	8	High speed destroyer transports	36
Light cruisers	4	Cargo ships	65
Escort carriers	18	Repair ships	5
Destroyers	82	Tugs	8
Destroyer escorts	54	Salvage vessels	1
Minelayers	17	Landing ships	303
High speed minesweepers	13	Landing ships dock	6
Minesweepers	42	Landing craft (all types)	294
Motor minesweepers	40	Netlayers	12
Patrol and scout craft	79	Unclassified	1
Seaplane tenders	10		
H.Q. ships	8	TOTAL	<u>1,205</u>

Included in the expeditionary force was a strong force of battleships, cruisers and destroyers, which was to provide cover against enemy surface ships and answer all calls for shore bombardments. These ships assembled at Ulithi in the western Carolines, whence they sailed northwards on the 21st of March.¹ On the same day the Amphibious Support Force, consisting of escort carriers and their air control units, many gunboats and close support vessels, a mine-sweeping flotilla, and under-water demolition teams set out from the same intermediate base. The Northern Attack Force embarked two divisions of U.S. Marines at Guadalcanal, whence it sailed on the 8th of March to stage through Ulithi; while the Southern Attack Force, with two U.S. Army divisions embarked, left Leyte on the 21st. The group which was to carry out the subsidiary assault on the Kerama Retto had also assembled and trained at Leyte, while that allocated to the diversionary landing on the east side of Okinawa sailed from Saipan in the Marianas on the same day that the

¹ See Map 34.

Southern Attack Force set course to the north from Leyte. Finally a floating military reserve, of divisional strength, was carried towards the scene of the assault from the far away New Hebrides, where other and longer term reserves had also been organised in case of need. The assembly of all these fighting ships and men, the provision of the multifarious supplies they needed, and their co-ordinated movements towards the distant enemy stronghold on which all eyes were focused would have been impossible but for the possession of the intermediate and rearward bases, the rapid development of which had been a miracle of American resourcefulness and ingenuity. In all more than half a million service men, over 300 warships, and 1,139 auxiliary vessels took part in the intricate movements just described. Covering the progress of the numerous convoys were the two Fast Carrier Task Forces of the Fifth Fleet. These consisted of Vice-Admiral Mitscher's four American groups, each of three or four carriers, several battleships and cruisers and about a dozen destroyers, and Vice-Admiral Sir Bernard Rawlings's force of four British carriers and their supporting warships, whose arrival in Australia in mid-February and subsequent preparations for work alongside the Americans were recounted earlier.¹

A few days before the various groups forming the expeditionary force sailed from their assembly points, Admiral Mitscher's Carrier Task Force started to carry out its traditional task of blunting the enemy's counter-attack, in this case by making heavy raids on the Japanese mainland. A different sector of the coast of Kyushu was allocated to each of the three available carrier groups, and on the 18th of March they all launched very numerous fighters, quickly followed by their maximum strength of bombers, against the enemy's airfields. There seems little doubt that it was the damage then inflicted which gained the expeditionary force almost a week's immunity from heavy air attacks. On the 19th Mitscher moved to a more northerly flying-off position, in order to strike at the Japanese warships reported to be in the Inland Sea bases.² Though anti-aircraft fire was intense, the bombers did much damage to dockyards and port installations; but the light carrier *Ryuho*, which was lying off Kure, was the only warship to be heavily hit. It was hardly to be expected that Mitscher's ships, which were working only about 100 miles off the Japanese coast, would escape unscathed; and on the 18th three of his carriers received slight damage from Japanese bombers. Next day the enemy's effort was stronger, three more ships were hit by bombs, and one of them, the *Franklin*, was so badly damaged that over 800 of her crew became casualties, and she had

¹ See pp. 333-334.

² See Map 43.

to be towed away to safety. For the next forty-eight hours, while covering the slow withdrawal of the crippled carrier, Mitscher had to deal with repeated attacks; but all were beaten off successfully, and the outcome of the four days of heavy air fighting was that Japanese losses were probably more than double those suffered by the Americans, and the striking power of the Fast Carrier Task Force had been little affected. Mitscher next refuelled from his Fleet Train tankers, and by the 23rd of March he was back on station to the east of the Nansei Shoto, ready to strike daily blows at the defences of Okinawa and the other islands of the group. In this new phase the American carrier groups encountered only slight opposition, which was proof of the effectiveness of the blows they had struck against the mainland airfields.

On the 24th of March the minesweepers of the Amphibious Support Force arrived from Ulithi, and at once began to clear the waters around Okinawa and Kerama Retto through which the attack forces were soon to steam. Mitscher detached his battleships to provide cover for the sweepers by bombarding the shore defences, while his fighters kept the skies clear of enemies. Next day more units of the Amphibious Support Force arrived, the under-water demolition teams started to clear the approaches to the beaches, while bombardments and minesweeping continued without interruption. As the sweepers moved closer inshore the bombarding ships followed; and they and the strike aircraft from the escort carriers poured a steady rain of shells and bombs on to the defences. Meanwhile the demolition teams had successfully cleared the beach obstructions off Haguchi, and by the 29th all the approach waters were declared safe. Only one of the seventy-six ships in the minesweeping force had been lost during the five days of clearance work, and the Japanese shore batteries had so far made no reply to the gunfire of the bombarding warships.

The 26th of March saw the arrival of the Attack Group which was to seize the Kerama Retto. The assault forces encountered little opposition; within a few hours of the landings all the principal islands were in American hands, and the construction teams and logistic organisations had started to create the advanced repair and supply bases for which the islands had been earmarked in the plans. This was work at which the Americans excelled. Within four days the base was ready to receive ships which had suffered damage, and to refuel and replenish those which came in with fuel tanks or magazines empty. As the tempo of the main operations rose to its climax the importance of these base installations increased, until at the end there were no less than four floating docks in use. These had been built in sections in America, whence they were towed right across the Pacific. Their arrival made it possible to carry out permanent as

well as emergency repair work in the Kerama Retto, thus eliminating the need to send damaged ships to more distant repair yards.

The seizure of the Kerama Retto revealed that the Japanese had intended to use the islands as an operational base for their suicide motor boats¹, no less than 350 of which were destroyed or captured. Although others were used later in night forays against the Okinawa invasion shipping, and proved a considerable nuisance, they never did appreciable damage to any important ship. No doubt the elimination of so many of their number right at the beginning of the campaign helped to reduce the threat.

On the day that the Kerama Retto were captured Admiral Rawlings's British Pacific Fleet took up its allotted station for the main operations. Its function was to neutralise the group of islands known as the Sakishima Gunto², and so prevent them being used as a staging point for air reinforcements sent from Formosa to Okinawa. The principal targets were the six strongly defended airfields on the islands of Ishigaki and Miyako. The British fleet had sailed from Ulithi at dawn on the 23rd of March and had refuelled from its own tanker force at a rendezvous about 300 miles to the south-east of the Sakishima Gunto two days later. For this first operation Admiral Rawlings had with him the battleships *King George V* (fleet flagship) and *Howe*, the four fleet carriers *Indomitable*, *Victorious*, *Indefatigable* and *Illustrious*, the cruisers *Swiftsure*, *Gambia* (R.N.Z.N.) *Black Prince*, *Argonaut*, and *Euryalus*, and eleven destroyers, two of which belonged to the Royal Australian Navy. Most of these ships have already appeared many times in this narrative—the *Illustrious* for example in the attack on Taranto in November 1940, the *Victorious* and *King George V* in the pursuit of the *Bismarck* in May of the following year and in the search for the *Tirpitz* in the Arctic in March 1942³; the *Euryalus* had been with Admiral Vian's famous 15th Cruiser Squadron throughout the greater part of the Mediterranean campaigns, and took part in many Malta convoys⁴; while the *Black Prince* and *Argonaut* had been with the Normandy invasion forces less than a year previously.⁵ Now come from distant seas and oceans to fulfil the British Government's pledge that we would not rest until the last enemy had been defeated and the disasters of 1941–1942 had been avenged, they formed by far the largest

¹ These craft were 18 feet long, with very low freeboard. They were driven by motor car engines, and were armed with two depth charges carried in the stern for dropping very near to the target. Alternatively an explosive charge could be fitted in the bows, in which case the pilot would ram the target.

² See Map 43.

³ See Vol. I, pp. 300–301 and 401–418, and Vol. II, pp. 121–124 respectively.

⁴ See Vol. II, pp. 44, 51–55, 341 and 342–343.

⁵ See pp. 47–48.

Commonwealth force ever to assemble for operations of war in the Pacific.

The principal offensive power of the British task force lay, of course, in the strike aircraft embarked in the four fleet carriers. These were Hellcat, Corsair and Seafire fighters, Firefly fighter-reconnaissance planes, Avenger bombers, and Walrus amphibians for air-sea rescue service.¹ But the multiplicity of aircraft types, caused basically by our pre-war failure to develop and produce really suitable planes for carrier work, was to prove a serious handicap in protracted operations such as the fleet was now about to undertake; for the carriers themselves, and also the replenishment ships in the Fleet Train, had to be supplied with a variety and quantity of spares which was out of all proportion to the number of aircraft in the first line squadrons. The diversity of aircraft also greatly complicated the problems involved in flying them on to and off from the carriers' decks; for the need constantly to turn into wind for variable periods according to the type being worked reduced the speed which the fleet could make good along the desired course. It seems indeed true to say that the lack of standardisation of aircraft came nearer to curtailing the work of the carrier-borne squadrons than any other factor. Furthermore the short-endurance Seafires could undertake little more than defensive duties; and their capacity to withstand the wear and tear of deck landings compared very unfavourably with the more robust American aircraft. Finally the American-produced Hellcats, Corsairs and Avengers, all of which were excellently suited to the work in hand, had been so modified to meet British requirements that we could not rely on pooling maintenance resources with our Ally's ships which were operating the same types. These factors, some of which may be considered avoidable, produced acute problems; but there was little that could be done within the fleet to mitigate them.

As the sun rose above the Pacific horizon on the 26th of March the first flights of fighters, shortly followed by the strike aircraft, took off from the carriers' decks in a position about 100 miles to the south of the island of Miyako.² On their return they reported that, in spite of being met by heavy anti-aircraft fire, they had torn up the runways of the main airfield with their bombs, and had inflicted a good deal of damage on the base installations. Only the two chief airfields appeared, however, to be in use by the enemy. At dusk the fleet—which had no night fighters embarked in the carriers—withdraw

¹ According to Admiral Vian's report the aircraft complements were as follows:

Indomitable—29 Hellcats, 15 Avengers.

Victorious—37 Corsairs, 14 Avengers, 2 Walrus.

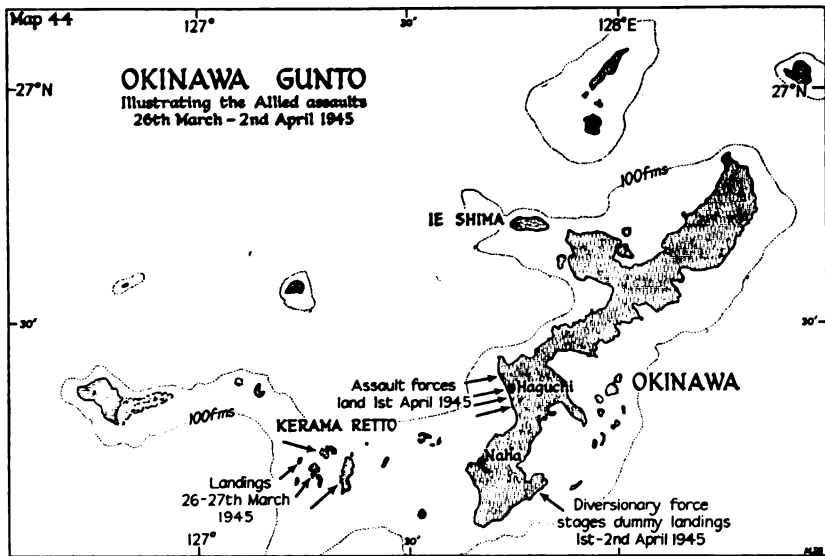
Indefatigable—40 Seafires, 20 Avengers, 9 Fireflies.

Illustrious—36 Corsairs, 16 Avengers.

² See Map 43.

to the south to avoid the expected retaliatory attacks; but by daylight on the 27th it was back in the flying off position, and ready to repeat the previous day's sorties. Admiral Rawlings had originally intended to continue the attacks for three days; but the approach of a typhoon, and the need for his ships to have their tanks full during the days immediately preceding and following the main landings, caused him to cancel the third day's sorties and refuel his ships forthwith.

The carrier operations of the 26th and 27th of March set the pattern for the whole period during which the British Pacific Fleet was responsible for denying the Japanese the use of the Sakishima Gunto airfields. But we soon found that it was very difficult to keep the runways permanently out of action, because the Japanese were



able to fill in craters by night. None the less it is plain that they were only able to make very limited use of them during the critical period of the Okinawa landings. From the 28th to the 30th the British ships refuelled, while American escort carriers took over their duties until the last day of March, when Admiral Rawlings was once more ready. The main assault forces were now approaching Okinawa, without having so far been attacked by enemy aircraft or submarines; and the meteorologists had forecast suitable weather for the landings to be made on the west side of the island.

Shortly before 6 a.m. on the 1st of April, just as dawn was breaking, all the heavy guns of the bombardment force opened up on the Okinawa defences while hundreds of strike aircraft rained down their bombs on to the same targets. The assault troops of both attack forces touched down at 8.30 a.m., precisely as planned, and met only

slight opposition. Before noon they had captured the two nearest airfields, and by the end of the day over 50,000 troops were ashore. Meanwhile the diversionary force was staging convincing dummy landings on the opposite coast; but it seems doubtful whether the enemy was sufficiently misled to divert any forces in that direction. From the Haguchi beaches the assault troops advanced rapidly across the isthmus to the eastern coast of Okinawa¹, and by the 3rd of April they had cut the defending forces in two. They then easily cleared the whole northern part of the island, where the defences were weak; but in the southern half, where the main part of the Japanese garrison was entrenched behind elaborate and carefully prepared defences, progress came to a halt almost immediately, and an acute shortage of ammunition was experienced. The sinking by suicide bombers on the 6th of April of two of the three ammunition ships which had just arrived probably contributed to this; and the bad weather which stopped all unloading over the beaches from the 4th to the 6th, and again from the 10th to the 12th, accentuated the difficulties encountered on shore.

On the day of the first landings enemy air activity against the offshore warships was only moderate; but the *Indefatigable* was hit by a suicide bomber. Her armoured flight deck, however, saved her from serious damage, and within a remarkably short time she was able to continue working her aircraft. The destroyer *Ulster* was damaged by a near-miss on the same day, and had to be towed to Leyte. Sporadic attacks continued during the next four days, generally at dawn and dusk; but only a few more ships were damaged. Then, on the 6th of April, the Japanese made their first mass attack with some 700 aircraft, of which half were probably 'Kamikazes'.² The Allied fleet received early warning of their approach from the picket warships—about which more will be said shortly—and was thus fully prepared to meet them with every surface and air weapon in its armoury. During the afternoon there were hundreds of air to air and sea to air individual combats. Although no warship larger than a destroyer was sunk, and the Americans claimed to have shot down 300 enemy aircraft, more than a score of ships of various classes were damaged.

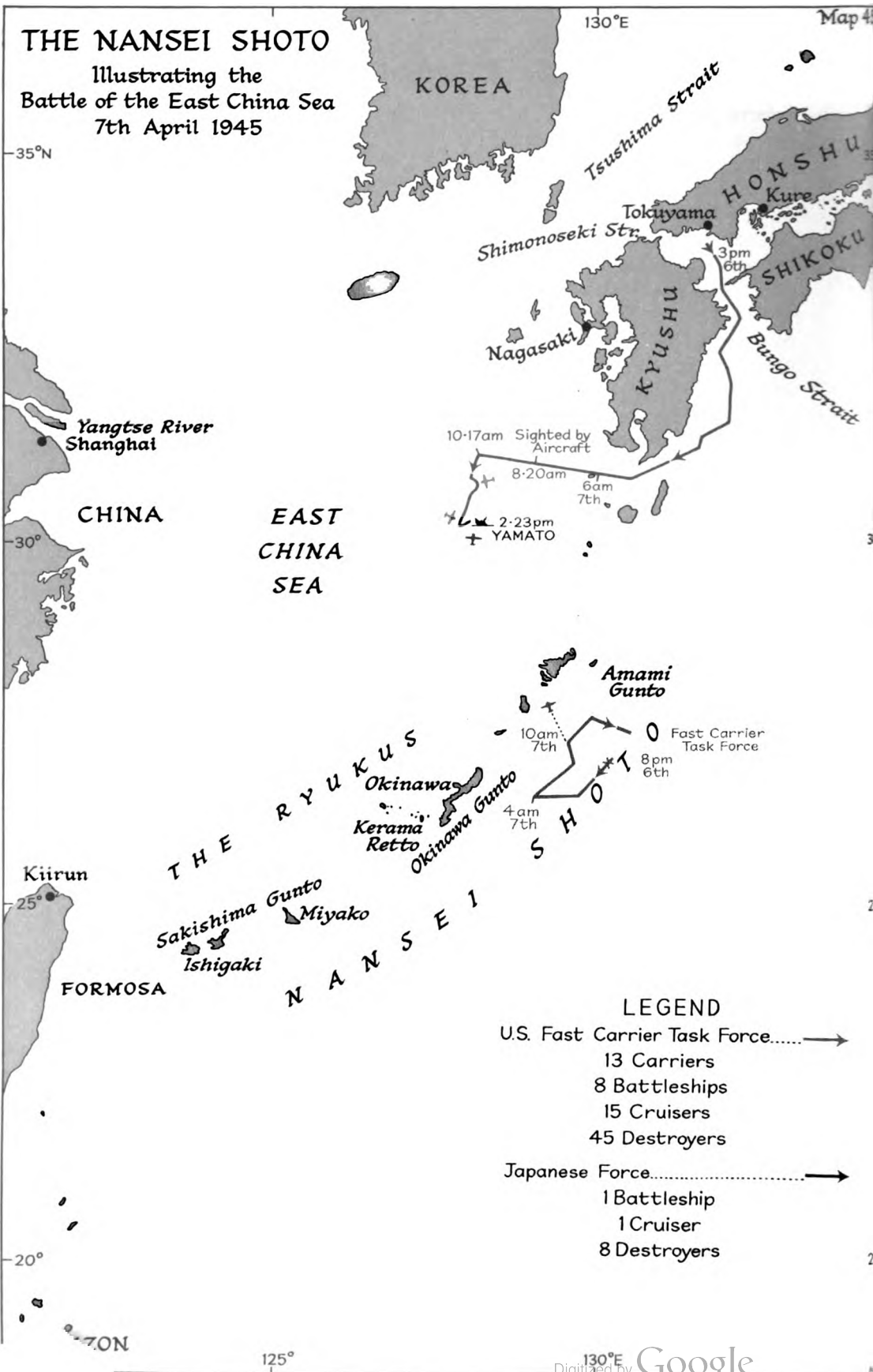
That same evening, the 6th of April, American submarines patrolling off the exit from the Inland Sea between Kyushu and Shikoku

¹ See Map 44.

² The 'Kamikazes' formed part of the naval air fleet commanded by Vice-Admiral M. Ugaki, which worked from bases in Kyushu. By April 1945 the pilots were no longer all volunteers, as had been the case in the early days of suicide missions; but compulsion had as yet brought few signs of any decline in morale, and most of the conscript crews seem to have set out with the same selfless dedication as the volunteers. Valuable accounts of the training and employment of the Kamikazes are to be found in *Zero* by Okumiya and Horikoshi (Engl. trans., Cassell, 1957), and in *The Divine Wind*, by Inoguchi, Nakajima and Pineau (Hutchinson, 1959).

THE NANSEI SHOTO

Illustrating the
Battle of the East China Sea
7th April 1945



(the Bungo Strait) reported a Japanese squadron steaming south at high speed.¹ It actually consisted of the giant 64,000-ton battleship *Yamato*, the cruiser *Yahagi* and eight destroyers, which had been sent out under Vice-Admiral S. Ito to attack the Okinawa invasion fleet. So low had Japanese stocks of oil fuel fallen that it had proved difficult to provide enough even for a brief sortie; and Admiral Toyoda, when he issued the order that 'Every ship . . . will fight to a finish so as to bring about the annihilation of the enemy fleet and secure the safety of our country for ever' seems to have been suggesting that Ito's sortie was in the nature of a suicide mission. It was, however, a forlorn hope to expect such a squadron to inflict serious damage on the Okinawa expeditionary force.

Admirals Spruance and Mitscher at once took far-reaching steps to deal with Ito's squadron. While Spruance stationed a powerful force of battleships, cruisers and destroyers to cover the approaches to Okinawa from the north-west, Mitscher prepared to send out air searches on the 7th, and made ready his well-trying striking forces. During the night the Japanese ships steered west towards the China Sea, to avoid approaching Okinawa by the direct route; but the ruse served no purpose, for at 8.22 a.m. on the 7th they were reported by one of Mitscher's reconnaissance planes. Spruance now altered his original plan, which had been to allow the enemy ships to come to him rather than attack them at long range, and told Mitscher to go into action forthwith in order to prevent the Japanese force escaping. At 10 a.m., from a position north-east of Okinawa, when Ito's force was some 250 miles away, 380 dive- and torpedo-bombers took off from the American carriers. Fifteen minutes later the Japanese Admiral turned south towards Okinawa, and it was shortly after noon that the striking forces sighted him. Though the cloudy and squally weather made it difficult to synchronise the attacks, and anti-aircraft fire was intense, no enemy fighters were present to impede the successive waves of strike aircraft. They quickly obtained so many hits with bombs and torpedoes that by 1.30 p.m. the Japanese squadron had lost all cohesion. Soon after 2 o'clock the *Yahagi*, which had been overwhelmed by many bomb and torpedo hits, sank; and at 2.25 the *Yamato* herself capsized after being struck by at least seven torpedoes and a dozen bombs. She took down with her Admiral Ito and almost the whole of her company of 2,400 men. Only four destroyers, some of them badly damaged, managed to limp back to the temporary safety of a Japanese harbour. American aircraft losses were very light, and although Mitscher's ships were heavily attacked during the flying operations, a Kamikaze hit on the carrier *Hancock* was the only appreciable Japanese success.

¹ See Map 45.

This 'Battle of the East China Sea' was the last of the many sea-air clashes between the Allied and Japanese navies. Just over three years earlier the latter had signalled its entry into the war with a series of devastating successes—at Pearl Harbour, off the east coast of Malaya, in the East Indian archipelago, and off Ceylon.¹ But after this action the few survivors of the Japanese Navy were bottled up in the harbours of their homeland or Malaya, and were almost completely immobilised by lack of oil fuel. They could only lie passively awaiting the day of their final annihilation.

During the days following the battle, the fleets supporting the Okinawa operation had little respite from suicide attacks. Admiral Rawlings's British task force, which was now making its third series of strikes against the Sakishima Gunto airfields, suffered little damage at this time; but the American ships off Okinawa underwent a severe ordeal. We will return to them shortly, for we must first continue with the story of the British operations. The original intention had been for Admiral Rawlings to return to Leyte after striking a fourth series of blows at the same targets on the 10th and 11th of April; but on the 9th Admiral Spruance asked Nimitz for permission to switch the British effort on to the airfields in northern Formosa.² Although none of the mass suicide raids had started out from bases in that island, on a number of occasions the fleet had suffered damage from bombers which had unquestionably come from its airfields. Responsibility for neutralising them had originally been placed on General MacArthur's South-West Pacific Air Force; but for various reasons, of which lack of a Supreme Commander may have been one³, that command had so far devoted little attention to the matter. Admiral Rawlings welcomed the proposal, and at dawn on the 11th his carriers were in position fifty miles off the Formosan coast, ready to fly off their strike aircraft. Low cloud and poor visibility, however, caused a twenty-four hour postponement, and it was at 7.15 a.m. on the 12th before forty-eight bombers and forty fighters took off in two waves to attack the two airfields on the north-east tip of Formosa. One flight raided an airfield successfully, but low cloud forced the other to change to its alternative target, which was the harbour of Kiirun (formerly Keelung).⁴ Neither encountered any air opposition over the targets, but the interception of considerable numbers of enemy fighters during the day made it clear that the Japanese were once again using the Sakishima Gunto airfields. In

¹ See Vol. I, pp. 562-567, and Vol. II, pp. 10-30.

² It was necessary to seek this permission from C.-in-C., Pacific, because Admiral Nimitz had retained control of the strategic disposition of the British Pacific Fleet, which formed his only immediately available reserve. See p. 333.

³ See pp. 338-339.

⁴ See Map 45.

these air combats the Fleet Air Arm fighters shot down sixteen enemies, for the loss of only one of their own number. Next day, the 13th, the carrier aircraft repeated the attacks on the Formosan airfields, after which Rawlings withdrew to his fuelling rendezvous. There the *Formidable* relieved the *Illustrious*, which had developed structural defects—a legacy of the underwater damage she had suffered earlier in the Mediterranean.¹ Meanwhile Admiral Rawlings had told Spruance that if the very heavy air attacks to which the American forces were being subjected, and the recrudescence of Japanese activity in the Sakishima Gunto, made it desirable for his ships to continue to strike at their primary targets, rather than return to Leyte as had been intended, they were quite ready to do so. Spruance accepted the offer, and on the 16th and 17th the British carriers accordingly renewed their blows. Although the aircrews and maintenance teams were by this time beginning to feel the strain of these protracted operations, Admiral Vian reported that everyone in the carriers was prepared to make yet another effort. This offer was also accepted and, having refuelled once more, the carriers struck again at Sakishima Gunto on the 20th. That evening Rawlings set course for Leyte.

The British Pacific Fleet had by that time worked continuously off the enemy's coasts for a month. Although American task forces had frequently carried out sustained operations for longer periods, their complements of both men and aircraft were much larger, their arrangements for replacing aircraft and aircrews were superior, and their Fleet Train was so much better equipped that refuelling and replenishing were far less of an ordeal for them than for their British counterparts. Throughout the campaign the slow speed and antiquated equipment of our tankers and supply vessels were not the least of the handicaps which the British Fleet had to overcome. Whether it was possible, in the circumstances surrounding the build-up of the fleet, to eliminate such troubles may be arguable; but, given that the fighting ships had to make do with what they had been given, their achievements were highly creditable. The contemporary records at least make clear that to the officers and men of Admiral Rawlings's task force their participation in operation 'Iceberg' had been a stimulating and heartening experience, after the long months during which they had been waiting to enter the fray.

On the 12th of April, during the British fleet's operations against Formosa, the free world was shocked by the news of President Roosevelt's sudden death. To Britain he had been a true friend in

¹ See Vol. I, pp. 421-423.

need ever since the dark days of 1940, and the Royal Navy remembered with gratitude his many moves to assist it in the Atlantic struggle.¹ Since that time the stream of ships, aircraft and weapons which had come to us under the President's imaginative and generous Lend-Lease law had been one of the greatest factors in enabling us to keep the seas open, what time the United States armed and prepared. While the whole British race mourned his passing, the Royal Navy knew that it had lost a friend whose sympathetic understanding of its problems, and grasp of the vital importance of the struggle at sea, had never wavered.

We must now return to Mitscher's carriers, which we left at the time when the first mass suicide attacks had just taken place off Okinawa on the 6th of April. On the 11th and 12th his ships were the principal targets in more mass attacks; and although the defending fighters and A-A guns destroyed many enemies, enough got through to inflict a disturbing amount of damage. Only one destroyer was sunk, but two carriers, three battleships and seventeen smaller vessels, mostly destroyers, were hit. On the 15th and 16th, in an attempt to frustrate these large scale raids, Mitscher took his force further north, and launched strong fighter attacks against the Kyushu airfields. Though many enemy aircraft were destroyed, the suicide attacks still continued; and several more ships, including the fleet carrier *Intrepid*, were damaged. Moreover a new type of weapon in the Kamikaze class, consisting of a piloted rocket-driven plane which was released from a parent aircraft when near to its target, had now made its appearance.²

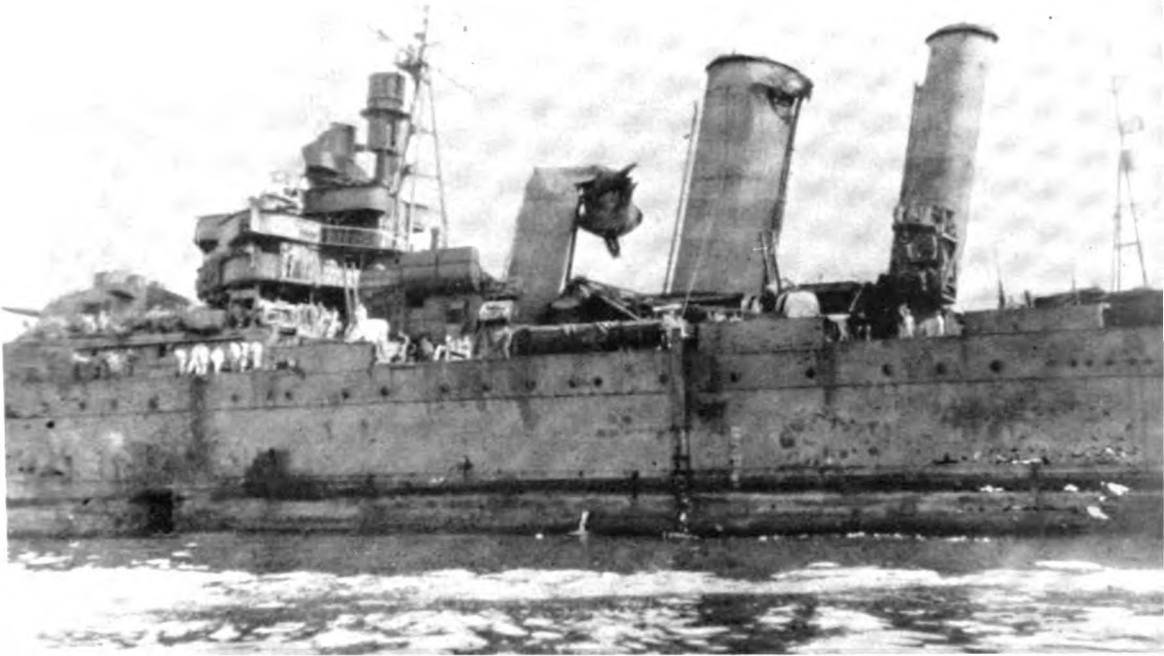
The problem of dealing with the suicide planes was now viewed very seriously; and it even seemed possible that they might succeed in forcing the fleet to retire clear of Okinawa. Admiral Nimitz therefore requested XXI Bomber Command of the U.S. Army Air Force to strike at the Kyushu airfields from its bases in the Marianas, and the heavy bombers forthwith began to make daily raids on them.³

As the defeat of the Kamikazes depended chiefly on gaining early enough warning of their approach, the Americans fitted a large number of destroyers with fighter-direction radar equipment, and stationed them fifty to seventy miles from the transport anchorages, whence they communicated direct with the fighter patrols. The same technique was also employed for the protection of the task forces

¹ See Volume I, Appendix P.

² These were called 'Oka' by the Japanese, and nicknamed 'Baka' by the Americans. In appearance they resembled a small fighter aircraft. They carried 1,800 pounds of explosive in their noses; but owing to the slowness of the parent aircraft they never proved a serious threat.

³ See p. 339, fn. (1).



Attacks by Japanese 'Kamikaze' suicide bombers

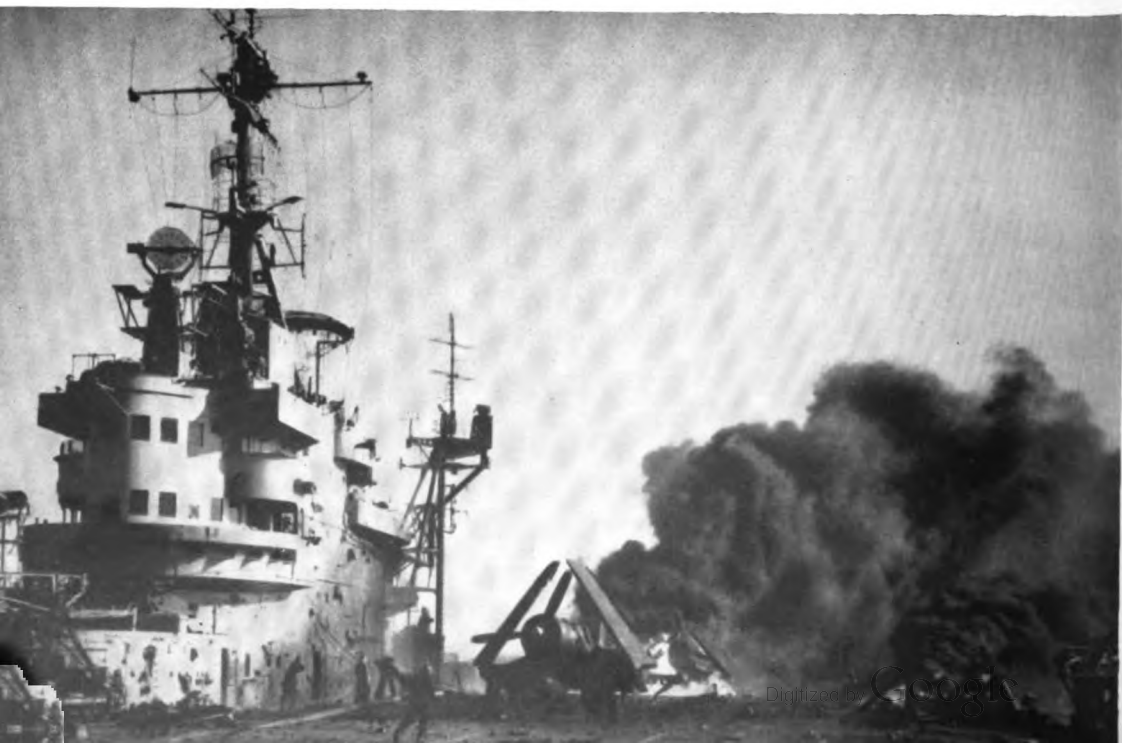
Damage to H.M.A.S. Australia in the Philippine operations,
January, 1945.

A hit on H.M.S. *Formidable*, during the Okinawa campaign,
May, 1945.





Attacks by Japanese 'Kamikaze' suicide planes
Hits on H.M.S. *Formidable* during the Okinawa campaign,
May, 1945.



while at sea. The suicide planes, however, often chose the picket destroyers as their targets; and to enable them to give mutual support to each other the Americans found it necessary to station several in each position. This however left gaps in the early warning network, and to fill them radar-fitted landing craft were added to the encircling screen. Of the total of thirty-three destroyers employed on picket duty six were sunk, all but one of them by Kamikazes, and thirteen seriously damaged; but their efforts undoubtedly reduced the impact of the suicide bombers. As however more and more of the outlying islands of the Okinawa group passed into Allied hands, it became possible for the shore-based radar stations established on them to take over an increasing share of the picket ships' duties, and their numbers were thereafter slowly reduced. But in the early stages the warning system depended almost entirely on their efforts.

We must now take temporary leave of the offshore fleets to glance briefly at the progress of the land forces, which we left at the time when they had successfully cleared the northern half of Okinawa, but were completely held up by the very strong defences in the south. On the 19th of April a powerful frontal attack was launched against those defences; but in spite of heavy naval and air supporting bombardments it made little progress. Not until the 11th of May were the Japanese gradually forced back; and even then they contested each yard of ground so stubbornly that it was the end of the month before the Americans captured their main fortified line. It had taken nearly two months to advance a distance of four miles: nor was Japanese resistance by any means at an end.

Though the improvements made to the airfields on Okinawa itself had enabled more fighter aircraft to work from them, and the establishment of radar stations on the outlying islands had improved the warning system, a complete solution to the suicide bomber was not yet in sight. Matters did, however, take a turn for the better during April, and the belief that the worst had passed was gaining ground when, on the 27th and 28th, the Japanese launched their first night mass attack. Though relatively few ships were sunk, the tale of damage was heavy; and it was now that American far-sightedness in establishing the repair base in the Kerama Retto reaped its full reward.¹

On the 1st of May the British Pacific Fleet was ready to sail from Leyte to resume operations against the Sakishima Gunto. The U.S. Chiefs of Staff had wished to employ it in the invasion of North Borneo, which was about to be launched²; but Admiral Nimitz had prevailed upon them to allow Rawlings's ships to take part in the

¹ See pp. 339 and 342-343.

² See p. 358.

second phase of the operations against Okinawa. He now had under his command the fleet carriers *Indomitable*, *Victorious*, *Formidable* and *Indefatigable*, the battleships *King George V* and *Howe*, the cruisers *Swiftsure*, *Uganda* (R.C.N.), *Gambia* (R.N.Z.N.), *Euryalus* and *Black Prince*, and fourteen destroyers. Their arrival in the operational area on the 4th of May coincided with a strong attempt by the Japanese to regain the initiative on Okinawa by launching a combined operation against the Allied invasion forces. On the night of the 3rd-4th they tried to make landings behind the American lines, while suicide craft attacked the transport anchorages. Both attempts ended in failure; but Kamikaze aircraft from Formosa, which attacked by night, and large numbers of planes which came down from Kyushu next day, succeeded in sinking four picket ships, and damaged a number of other vessels.

This time the British ships came in for their full share of suicide attacks. Admiral Rawlings had decided to try to put the defences of Miyako in the Sakishima group out of action by gun bombardment¹, as an alternative to air attack, and at 10 a.m. on the 4th he accordingly detached all his battleships and cruisers to close the island. Shortly after noon they opened fire, and for forty minutes they poured a rain of shells on to the three airfields. While the surface ship bombardment was in progress about twenty Japanese aircraft approached Vian's carriers, and three of them broke through the fighter screen. One crashed on to the *Formidable's* flight deck, causing some damage; another hit the *Indomitable*, but bounced off harmlessly; while the third was shot down by gunfire. Attacks continued during the afternoon, but the fighters succeeded in breaking them all up; and, thanks to her armoured flight deck, the *Formidable* quickly restored herself to full activity. Fourteen enemy aircraft were destroyed by the British Pacific Fleet on that day.

On the 5th Vian's carrier aircraft resumed their attacks on Miyako, and the complete absence of anti-aircraft fire showed that the previous day's bombardments had produced the desired result; but Admiral Rawlings recognised that the detachment of the bombarding ships had deprived the rest of his fleet of a great proportion of its A-A defences. He decided therefore that if it proved necessary to repeat the operation he would keep the two 5.25-inch-gun cruisers (the *Euryalus* and *Black Prince*) with the carriers; but in fact the need never arose.

After refuelling on the 6th and 7th of May, during which period the American escort carriers again took over its responsibilities, the British task force resumed its air strikes on the following two days, but late in the afternoon of the 9th the *Victorious* and *Formidable* were

¹ See Map 45.

both hit by Kamikazes. Though many aircraft were destroyed by fire, the armoured flight decks again saved our carriers from serious damage.

So many ships of Mitscher's Fast Carrier Task Force had suffered damage during the recent weeks that, in the middle of April, he reorganised the remainder into three groups instead of four; and as each group had to be detached in turn to rest and replenish, while those on station would have to refuel every two or three days, the strength he had immediately available was not great.¹ By this time, however, the shore airfields on Okinawa were carrying a larger share of the burden of defending the off-shore shipping, and the scale of the Japanese mass raids was clearly declining. After the heavy attacks of the 4th of May there was little more than sporadic enemy activity, until about 150 enemy aircraft appeared on the 11th. That day Mitscher's flagship the *Bunker Hill* was hit twice, and had to withdraw; and several of the picket ships came in for particular attention. But the great majority of the attackers were destroyed before they could do any harm, and the two destroyers on picket duty which were hit claimed no less than forty-two enemies between them. Even if, as is likely, the contemporary claims were somewhat exaggerated, the day's tally was a fine achievement by the ships employed on that hazardous duty. The new 'proximity' or V.T. (Variable time) fuze, now supplied to all heavy A-A guns, had undoubtedly brought about a great improvement in the effectiveness of the ships' gunfire.² After the damage to the *Bunker Hill* Mitscher transferred his flag to the famous old *Enterprise*³; but within two days she also received a Kamikaze hit, and the Admiral then shifted to a third carrier, the *Randolph*. Nor was Spruance himself much more fortunate; for his flagship, the *New Mexico*, was hit on the evening of the 13th. None the less during the latter part of May the scale of the attacks launched from the Japanese mainland diminished noticeably, and although raids from Formosa prevented any appreciable relaxation of the Allied counter-measures, it was becoming clear that the menace of the Kamikazes would be successfully surmounted. The constant bombing of the Kyushu airfields had certainly contributed greatly to this favourable trend; and the process was accelerated by Mitscher taking his two available groups north to resume his blows at those targets on the 13th and 14th of May. He then represented that the shore-based air forces in Okinawa were strong enough not to need his help in the final stage of the reduction of the stronghold, and suggested that his ships should return to Ulithi to prepare for the

¹ Task Force 58 was actually only at its full strength of four groups from 8th-17th April.

² See Vol. II, pp. 418-419, regarding this development.

³ See Vol. II, pp. 36, 37-42, 226, 228-229.

invasion of Japan. Spruance, however, declined to dispense with the Fast Carrier Task Force, which accordingly carried on with its blows against Kyushu. Nor was it long before the Fleet Commander's judgment was shown to be soundly based; for on the 24th there was a sudden recrudescence of Japanese air activity off Okinawa, which lasted four days. Although they lost some 300 more aircraft in the process, they succeeded in sinking two ships and damaging a score of others.

On the 28th of May Admiral Halsey relieved Spruance, Vice-Admiral McCain took over the Fast Carrier Task Force from Mitscher, and the Fifth Fleet again became the Third Fleet.¹ To give one example of the protracted nature of the operations recently conducted by Mitscher, one of his four groups—that in which he himself flew his flag—had remained continuously at sea for two and a half months. This was an astonishing feat, and a fine tribute both to the efficiency of his supply vessels and to the stamina of the fighting ships' companies and aircrews.

Meanwhile off Sakishima Gunto the British Pacific Fleet was continuing with its task of keeping the Japanese airfields neutralised, by attacking them for two days and then withdrawing for two days to refuel and replenish. There was, however, little enemy activity during this series of strikes; and on the 25th of May Admiral Rawlings set course for Manus, whence his ships dispersed to other bases, in order to prepare for the next stage of the offensive against Japan. We may here summarise the work of the B.P.F. during its first two months of active service under Admiral Spruance (26th of March—25th of May). The carriers flew a total of 5,335 sorties, nearly half of which (2,073) had offensive purposes. They dropped 958 tons of bombs on enemy installations, and fired many hundreds of rocket projectiles; while the guns of the battleships and cruisers fired 200 tons of shells at the same targets. The carriers' losses of aircraft on operational sorties totalled 98; but a further 62 came to grief in other ways—chiefly through deck-landing accidents. The air-sea rescue service however, saved two-thirds of the aircrews who came down in the sea. Contemporary estimates of losses inflicted on the enemy, which cannot be verified with any degree of accuracy, claimed ninety-six aircraft destroyed and nearly 200 small vessels (mostly under 250 tons) sunk or damaged by Rawlings's ships.

At the end of May the long stalemate on Okinawa was at last broken, and the advance of the land forces on the southern front became much more rapid. This favourable development on land heralded the end of the fleet's off-shore supporting work, though on three more occasions in early June the American carriers struck again

¹ See pp. 190–191 regarding changes in the designation of the Central Pacific forces.

at the Kyushu airfields. It was during these final weeks of the Okinawa campaign that McCain's ships were subjected to an ordeal by storm as dangerous as any of the mass onslaughts by the Japanese suicide bombers. On the 4th of June two carrier groups, which had just completed strikes at the Japanese mainland, met their fuelling force and steered to get out of the track of a typhoon which was known to be approaching.¹ Unfortunately they failed to get clear, and early on the 5th were caught by the full violence of the storm. Though loss of life was small in comparison with that suffered in the previous December, when the Third Fleet was struck by a typhoon and three destroyers were lost with almost the whole of their crews², no less than thirty-six ships sustained structural damage—much of which was serious; and some 150 aircraft were destroyed. The violence of the storm is well demonstrated by the cruiser *Pittsburgh* having her entire bow section torn off by the heavy seas.³ None the less—and it is a tribute to the hardihood and resilience of the men of the Fast Carrier Task Force—they were back on station and striking new blows at the Kyushu airfields two days after being subjected to this battering by the elements. Later in the same month the Task Force successfully avoided two more typhoons.

On the 21st of June, after eighty-two days of protracted struggle, resistance ended on Okinawa. Its capture cost about 12,000 American lives; but very few of the Japanese garrison of 80,000 fighting men survived the siege.⁴ The shape which the campaign took had necessitated prolonged offshore operations by the Allied navies, which not only were required to support the land forces with bombardments and bombing, and to protect the continuous flow of supplies and reinforcements, but also had to carry a large share of the burden of air defence. The struggle for air supremacy was indeed the crux of the whole campaign; and until the shore airfields were ready the decision had depended mainly on the carrier aircraft. But the heavy bombers of XX Bomber Command, flying from bases in India and China to attack the Formosan airfields, and those of XXI Bomber Command, which flew from the Marianas to strike against targets on the Japanese mainland, contributed a good deal to reducing the weight of the enemy's counter-offensive off Okinawa. For a time, in April, it had seemed possible that the losses inflicted by the

¹ In the China Sea and western Pacific the typhoon season begins in June and ends in October; but it is by no means unheard of for such storms to arise before the normal season begins, or after it has ended. That of June 1945, though an early typhoon, was by no means exceptional.

² See p. 228.

³ This was partly attributable to faulty construction. The bow of the ship was later towed to Guam.

⁴ The official U.S. Army history, *Okinawa, The Last Battle*, gives the total Japanese killed as 110,000; but about 30,000 of these must have been Korean and Okinawan labourers and conscripts.

Kamikazes might be sufficient to tilt the scales; but the resolute persistence of the Americans, and their ingenuity in devising counter-measures, eliminated that danger. It still, however, remains true that the suicide plane was one of the most effective air anti-ship weapons developed during the war. It is indeed now plain that it brought a foretaste of the era of the guided missile—though employing human instead of instrumental control. American sources give the number of suicide missions against the shipping off Okinawa as about 1,900¹, compared with 5,000 sorties by orthodox bombers; and it was the former that inflicted eighty per cent of the losses suffered by the Allies from all causes. In all the Kamikazes sank twenty-four ships and craft, and damaged the very large total of 202 during the Okinawa campaign.² But for the chronic strategic disagreements between the Japanese Navy and Army, which continued even when their country was *in extremis*, the number of suicide missions might well have been greater. None the less, and for all that the suicide bombers inflicted substantial losses and for a time caused serious apprehensions in Allied circles, the adoption of such tactics was in fact an admission of weakness. By 1945 the Japanese supply of pilots was by no means limitless, their output of aircraft had declined drastically³, and our bombing raids and maritime blockade had produced such an acute shortage of fuel that aircrews could not be properly trained. Thus the Kamikazes were bound to be a wasting asset; and their effectiveness was reduced by unskilled pilots being shot down long before they reached their targets, or choosing to immolate themselves on the picket ships instead of seeking the most valuable Allied vessels. Furthermore, because most of the pilots never returned, the Japanese authorities accepted totally false claims of the successes achieved; and that completely misled them regarding the prospects of the campaign. The best estimate of Japanese aircraft losses from all causes in the Okinawa campaign amounts to no less than 7,830, which was more than ten times greater than the total Allied losses.⁴ Even if the figure for Japanese losses is on the high side, they must have been great enough to make it plain that the whole policy of suicide attacks was doomed. Looking back from the present distance of time it seems that the Japanese could better have furthered their purpose of forcing the Allied carrier squadrons to withdraw had they deployed their submarines to catch the warships while refuelling, and to attack the tankers as they ferried to and fro

¹ See United States Strategic Bombing Survey's, *The Campaigns of the Pacific War*.

² The sunken ships were all American, and include those scuttled because of damage received. The damaged ships include four British.

³ By the spring of 1945 aircraft output had fallen from the peak of 2,500 per month reached in mid-1944 to about 1,500 per month.

⁴ Allied aircraft losses from all causes, including the typhoon of 5th June (see above, p. 355), amounted to 763, including 98 from the Royal Navy (see p. 354).

between the replenishment bases and the fuelling rendezvous. But they adopted no such carefully planned measures, and the introduction of suicide tactics merely underlined the desperate straits to which they were reduced. Indeed it marked the final passing of their once-vaunted maritime air power.

While the long struggle for Okinawa was in progress in the north, General MacArthur's forces were continuing the clearance of the Japanese from the Philippines. In April 1945 the Americans made many successful assaults from the sea against the outlying islands still held by the enemy. In most cases there was little opposition on the beaches; but the Japanese garrisons, though completely cut off from supplies and reinforcements and constantly harried by Filipino guerillas, continued to resist in the interior. Although by the end of April all the principal islands of the group were in Allied hands, it was July before organised resistance in the Philippines came to an end. Meanwhile the U.S. Chiefs of Staff had been considering the capture of other territories still held by the Japanese in the Eastern Archipelago; but the launching of such undertakings was bound up with the much bigger question of the redeployment of Allied forces after the defeat of Germany; and at the Yalta Conference (February 1945) it had been estimated that between four and six months must elapse between victory in Europe and the final assault on Japan.¹ In view of this the Americans stated their intention to strike across the China Sea to Hainan, and also mount an attack on North Borneo as soon as they had cleared the enemy from the Philippines.² But by the early days of April it was plain that the collapse of Germany could not be far off; and the advancement of the date of that event would enable the final assault on Japan to be launched towards the end of 1945 instead of early in the following year. As a first step the Americans considered the reorganisation of their command structure in the Pacific. As General MacArthur's effort would have to be directed towards the north, the U.S. Chiefs of Staff considered it desirable to free him from all responsibilities in the south. They therefore proposed that either the whole South-West Pacific theatre south of a line drawn between the Philippines and Hainan should be transferred to Admiral Mountbatten's South-East Asia Command, or that it should be made a separate command under a British C.-in-C. The date suggested for the transfer was the 1st of July; but the proposal at once brought the whole question of the participation of British Commonwealth forces in the final campaign against Japan

¹ See Ehrman, *Grand Strategy*, Vol. VI, pp. 223-226 (H.M.S.O., 1956).

² See Map 46.

into the foreground of inter-Allied discussions. The British Government's view was that, although there was much to be said in favour of taking over responsibility for an area in which we had vast interests, there were strong arguments against accepting the relegation of our forces to what we regarded as a campaign of secondary importance. The American Chiefs of Staff, however, assured their British colleagues that their proposals had not been framed with the intention to exclude us from the principal campaign against the last enemy. The discussions between Britain and America, in course of which we had continually to consult the Commonwealth countries, were protracted; and by the time that differences had been resolved in mid-July the major issues had been largely overtaken by events. It thus came to pass that during the period from April to August 1945, now to be discussed, General MacArthur continued to direct operations in the theatre he had so long commanded, and the southern part of it was not transferred to the South-East Asia command until the day of the Japanese surrender.

In March the U.S. Chiefs of Staff decided to go ahead with the plan to occupy certain points in the northern half of Borneo, using Australian troops and a mixed force of Australian and American warships. The intention was to seize the island of Tarakan off the east coast on the 1st of May, as a preliminary to occupying Brunei Bay in the west and also the oil port of Balikpapan in Dutch Borneo.¹ Later on assaults were to be mounted against Java. The primary reason given by the Americans for gaining possession of Brunei Bay with its fine harbour was, however, that it should be allocated to the British naval forces as an intermediate base; and that proposal produced serious misgivings in London. In the first place the anchorage was so undeveloped that many months would elapse before it could serve such a purpose satisfactorily; and, secondly, it was much too far from the scene of the main operations against Japan. We therefore pressed our Ally to provide the necessary facilities for the fleet in Subic Bay or some other suitable harbour in the Philippines.

While these matters were being debated the Americans, who held to their opinion that recovery of the oil-producing regions of Borneo was essential, were going ahead with their plans and had placed command of the expedition in the hands of Vice-Admiral D. E. Barbey, U.S.N. The shipping assembled at Morotai in the Halmaheras², where a force of 10,000 Australian troops carried out rehearsals in April. The naval attack forces, under Rear-Admiral F. B. Royal, U.S.N., consisted mainly of American ships; but for the assault on Tarakan the Royal Australian Navy contributed the

¹ See Map 47.

² See Map 46.



The assault on Iwo Jima, 19th February, 1945

Landing craft of the assault waves moving inshore.

U.S. Marines of the assault wave landing.

(Photographs U.S. Navy Department)

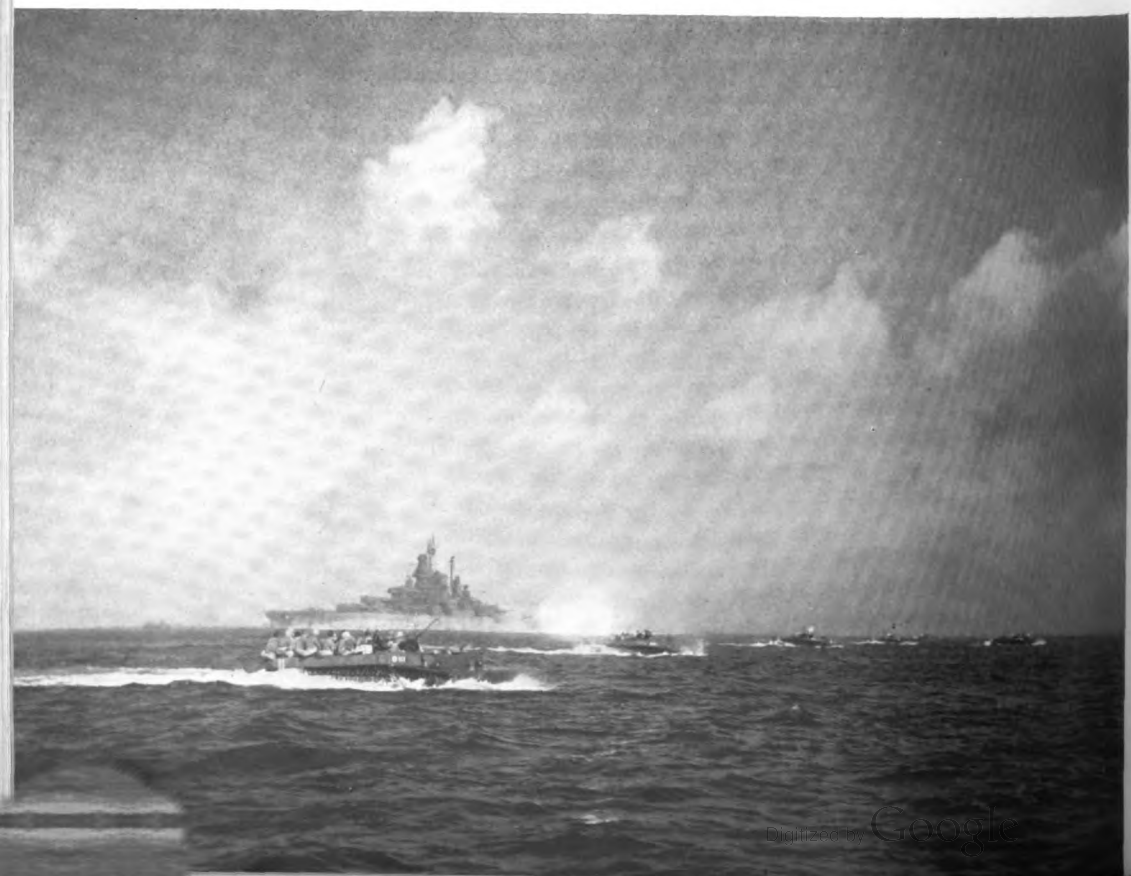




Troops and supplies landing in Iwo Jima, February, 1945.

The assault on Okinawa, 1st April, 1945. Landing craft moving inshore covered by one of the battleships of the bombardment force.

(Photographs U.S. Navy Department)



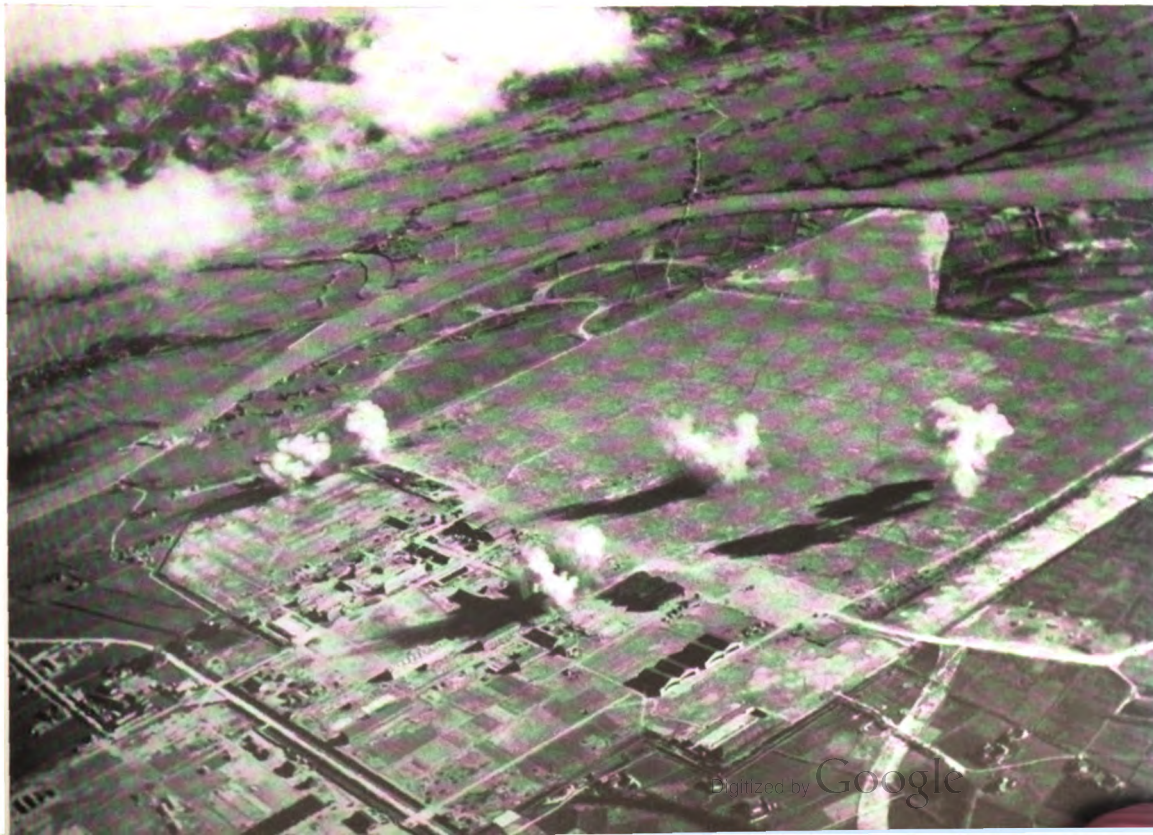


The Okinawa campaign, April, 1945

Landing craft firing rockets on the assault beaches.

(Photograph U.S. Navy Department)

An attack by Avengers of the British Fleet on a Japanese airfield.





The Okinawa campaign, April, 1945

L.S.T.s landing vehicles and equipment.

U.S. Marines attacking one of the many Japanese underground defensive positions.



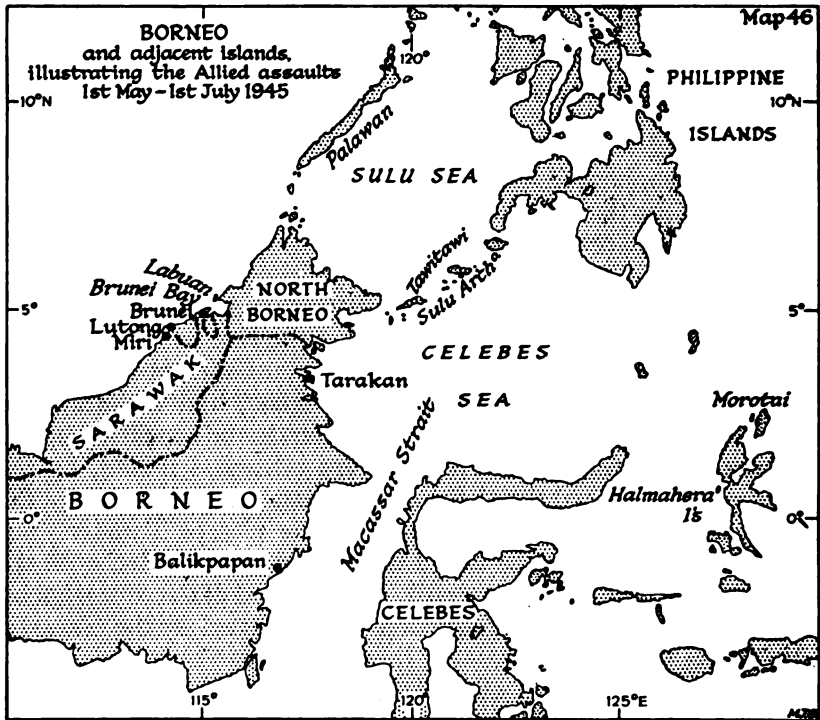
cruiser *Hobart*, two landing ships and a number of smaller warships. We have already seen how, towards the end of April, the U.S. Chiefs of Staff had proposed to switch the British Pacific Fleet from the operations against Okinawa to those against Borneo; and how Admiral Nimitz got the suggestion quashed.¹ The transfer of the fleet would indeed have been a considerable misuse of its strength, since the Japanese naval forces remaining in the south were very weak, and opposition in Borneo was not expected to be prolonged or stubborn. In fact the raids on the Japanese airfields, which were begun in mid-April from many bases stretching from Palawan to Morotai, quickly eliminated the remnants of the enemy's air forces; and the chief difficulties which the assault craft had to surmount at Tarakan arose from the navigational intricacies of the approach channels, and from the mines which we ourselves, as well as the Japanese, had laid in them. On the 27th of April cruisers and destroyers bombarded the enemy positions, while minesweepers started to clear the approaches. The latter task proved difficult, as had been expected; and it was not completed by the time the assault convoys arrived. None the less only one mine casualty occurred, and the Japanese did not open fire on the sweepers until the day after the landings. At 8.15 a.m. on the 1st of May the first waves of landing craft touched down, under cover of heavy gun and rocket fire; but the Japanese garrison, numbering some 2,000, had withdrawn to prepared defensive positions and did not contest the beaches. Though resistance increased as the Allied troops advanced inland, by the 5th they had captured the airfield, which was the main object of the landings. Two days later they entered the city of Tarakan; but organised resistance on the island was not entirely quelled until the third week in June—simultaneously with the end of the campaign on Okinawa.² A week later production had restarted in the Tarakan oilfield.

Although a great deal of work had to be done to the Tarakan airfield before it could play its intended part in the assaults on Brunei Bay and Balikpapan, the local commanders decided to proceed with their plans; but military considerations caused a postponement of the new landings from the 23rd of May to the 10th of June. Meanwhile the Brunei Bay defences were thoroughly pounded from the air. On the 7th of June the minesweepers arrived off the entrance and began work, covered by a cruiser and destroyer bombardment force. The clearance of the approaches proved easier than at Tarakan, and the sweepers then moved eighty miles south to Lutong and Miri in Sarawak, where subsidiary landings had

¹ See p. 351.

² See p. 355.

been planned with the object of capturing the important oilfields. There, in a week of concentrated effort, they swept about 450 mines. Meanwhile the assault force, which had left Morotai on the 4th, arrived off Brunei Bay early on the 10th. After a heavy bombardment the three landings, one of which was on the island of Labuan, took place without meeting any opposition. The airfield on Labuan was quickly captured, and on the 13th Brunei town and airfield also passed into Allied hands. A week later landing craft from Brunei put troops ashore at Lutong, whence they quickly advanced down the



coast to the oil centres of Seria and Miri, which they entered on the 25th. The key points in northern Borneo were thus all regained at very small cost.

Preparations to assault Balikpapan in the south-east of Dutch Borneo on the 1st of July had meanwhile been completed. This was a more formidable proposition, since the Japanese had constructed strong defences to guard the second largest oil centre in the Far East¹, the sea approaches were far from ideal and were known to be thickly sown with both Allied and enemy mines, and the assault had to be made near to the town, where strong resistance was

¹ Palembang in Sumatra (see pp. 309-310) was the largest.

expected. Moreover, because Tarakan airfield was not yet ready, air cover would have to be provided from more distant bases. As an insurance against bad weather frustrating the operation of shore-based aircraft, three escort carriers were added to the naval assault force. General MacArthur, however, decided that it was essential to overwhelm the defenders by air bombardment before the landing craft went in, and a long series of raids therefore took place, culminating in a very heavy attack on the morning of the landings.¹ All the oil tanks were destroyed and a large part of the city razed. The Dutch later contended, with some reason, that destruction on such a scale had been quite unnecessary.

The minesweepers and their covering forces arrived off Balikpapan on the 16th of June and set about their difficult task. For the first week enemy gunfire was troublesome, and the warships had also to contend with occasional air attacks. A few sweepers were lost on mines, but before the assault forces appeared on the scene the approaches had been made reasonably safe. On the 19th the Dutch cruiser *Tromp* arrived, and a week later the Australian cruisers *Shropshire* and *Hobart*, the destroyer *Arunta*, and more American warships added their weight to the support squadron's gunfire. A feature of the bombardments which was unusual in the Pacific was that, because of the mine danger and the constricted nature of the offshore waters, they were mostly carried out at anchor. On the 26th the expeditionary force of 121 ships left Morotai with the 7th Australian Division onboard. Twenty more vessels joined from Tawitawi while on passage, and at 7 a.m. on the 1st of July the final bombardments opened, quickly followed by heavy air attacks and a barrage of rockets. The assault waves touched down shortly before 9 o'clock, and met little opposition. By nightfall the beach-head was firmly held, and 10,500 men and many tons of stores had been disembarked. The Japanese had actually taken to the jungle behind the town before the assault troops landed; but even if they had decided to contest the landings, it is doubtful whether they could have withstood the tremendous weight of the preliminary sea and air bombardments. This operation was perhaps the culminating justification for the policy of carrying out assaults from the sea a few hours after dawn, and of preceding them by the heaviest possible neutralising fire. Three days after the landings the town was in Allied hands, and the whole coastal strip was also soon firmly held; but when the Australians moved inland they again encountered desperate resistance, and fighting continued until the end of the war.

The combined operations carried out at Tarakan, Brunei Bay and

¹ George Odgers, *Australia in the War of 1939-45: The Air War Against Japan 1943-45* (Australian War Memorial, 1957) contains a full account of the air attacks on Balikpapan.

Balikpapan were the last of the war. It can, perhaps reasonably, be argued that by July 1945, with the Japanese Empire visibly cracking, it was superfluous to embark on such undertakings. But the very smoothness with which the assaults were carried out emphasises the high efficiency which the Allies had achieved in the technique of amphibious warfare. We may see in those assaults not only the ultimate development of inter-Allied tactical and technical co-operation but the fulfilment of all the plans and hopes of earlier years, and the application of all the lessons we had so hardly had to learn and relearn. It is indeed difficult to believe that the uncertain fumbblings which had marked our earliest combined operations in Norway and off Dakar in 1940 were separated from the superbly planned and executed assaults in the Pacific by only five years. Whether the greater lessons—that all operations of war are to a very considerable extent, if not entirely, combined operations will be remembered by posterity is, of course, another matter. Memories are notoriously short, and in peace time the fighting services have always tended each to go their own separate ways.

After Borneo, MacArthur planned to enter Java, but his purpose was vetoed by the American Chiefs of Staff—a decision which the General has stigmatised as ‘one of the grave mistakes of the war’.¹

We left the main body of the British Pacific Fleet at the time when it was released from the operations against the Ryukus on the 25th of May, and had returned to Sydney to refit and replenish.² The distance between the zone of offensive operations and the rearward base (about 4,500 miles) was so great that eleven days’ steaming were needed to reach the one from the other; and for this reason Admiral Rawlings’s ships could not be ready to rejoin Halsey’s Third Fleet until the middle of July. To drive home the effects of the lack of a properly organised forward base Admiral Rawlings drew an analogy in his report between the operations he was required to carry out and a mythical fleet ‘sailing from Plymouth to strike at Rio de Janeiro, replenishing once from harbour tankers in the Cape Verde Islands and a second time at sea’.

Soon after the fleet reached Sydney the battleship *Howe* was detached to refit at Durban: but the arrival of the modern carrier *Implacable* more than offset her departure. Rear-Admiral E. J. P. Brind at once hoisted his flag in the carrier and took command of a special force organised to attack the main Japanese base at Truk in the Carolines, which the Americans had by-passed in their great

¹ See Willoughby and Chamberlain, *MacArthur 1941–1951* (Heinemann, 1956), p. 258.

² See p. 354.

drive across the central Pacific to the Philippines.¹ On the 10th of June accordingly Admiral Brind sailed from Manus with the *Implacable*, five cruisers, one escort carrier (whose function was to provide an emergency landing deck), and five destroyers. Apart from fulfilling his primary object of keeping Truk neutralised, the operation provided an excellent opportunity for the *Implacable's* aircrews to gain experience of conditions in their new theatre. On the 14th and 15th a series of air strikes and surface ship bombardments was carried out; but the truth was that the Americans had previously given Truk enough attention to deprive the British Pacific Fleet of any very worthwhile targets.

On the 28th of June Admiral Rawlings was ready to leave Sydney with the main body of the British Pacific Fleet; but the *Indefatigable* was still refitting and the *Indomitable* was delayed by machinery defects. However at Manus he met Admiral Brind's ships, recently returned from Truk, and they brought his strength up to one battleship, three fleet carriers, six cruisers and fifteen destroyers. The arrival of the *Implacable*, with her greater complement of aircraft², added substantially to the striking power of the fleet; and its operational endurance was now brought somewhat nearer to the very high standard of comparable American ships. After refuelling at Manus Rawlings set course for the rendezvous at which he was to meet the Third Fleet. The story of the final phase of the Pacific operations will be told in the next chapter.

¹ See Part I of this volume, p. 336.

² See p. 344, fn. 1. The *Implacable* had embarked 15 Avengers, 48 Seafires and 12 Fireflies.

CHAPTER XXVIII

THE SETTING OF THE RISING SUN

1st July—15th August 1945

‘Sea power, when properly understood, is a wonderful thing’.

W. S. Churchill, *The Second World War*,
Vol. II, p. 248.

By the beginning of July 1945 the ever-tightening blockade, to which fuller reference will be made shortly, had produced critical economic difficulties for the last surviving partner in the once-vaunted Axis, but Japan's military condition was not yet desperate. She still possessed large and well-trained land forces in the homeland and Korea, and many of her 5,000 military and naval combat aircraft had been successfully dispersed and hidden, and were being kept in reserve in expectation of an Allied invasion of the mainland. Although there was an acute shortage of aviation fuel, there was enough to enable the combat aircraft, supplemented by the several thousand training machines capable of being used in Kamikaze attacks, to cause serious trouble to offshore shipping—as we had recently learnt off Okinawa. True the Imperial Navy had been reduced to impotence, and its surviving ships were entirely immobilised by lack of fuel; while the Japanese Merchant Navy had suffered so heavily, and its losses were mounting so rapidly, that it was becoming impossible to feed the population and keep the nation's industries in production. But to a great extent the seriousness of Japan's economic plight was shrouded from Allied eyes. Although we realised that there was no longer any possibility of her disputing control of the seas, we did not know that the blockade had brought her within measurable distance of collapse. Moreover all recent experience had confirmed the reputation of the Japanese armed forces for resisting to the end, and there was thus every reason to expect that the invasion of their homeland would be a very costly undertaking. Although in May and again in June the Japanese had put out tentative peace feelers to the Russians, who were not yet at war with them, they had been rebuffed; nor was their Supreme War Council, with whom the real power rested, yet ready to consider surrender. Thus, early in July, although the Emperor and the political leaders in the Cabinet wished to end the war, the official policy of Japan still was to fight on. The attitude of the Supreme War Council was probably stiffened by the knowledge that the Allies

would not be content with anything short of 'unconditional surrender'; for such terms contained no safeguard for the position of the Emperor as ruler of Japan.¹

In July the leaders of the Allied nations met in conference at Potsdam, and it was there that, on the 17th, Stalin made it known that a new approach had been received from the Japanese. This led to the issue of the 'Potsdam declaration' on the 26th, laying down the terms which would be imposed on Japan if she capitulated. They included no demand for the unconditional surrender of the Government, but only of the armed forces; and it is believed that the Emperor was willing at once to accept such terms. The Cabinet however, probably under the influence of the military leaders, decided two days later to 'ignore' the declaration.² There were now only two alternatives open to the Allied leaders—to loose on Japan the terrible weapons which the discovery of nuclear fission had placed in their hands, or to withhold those weapons and launch the greatest invasion of all time against the last enemy. Plans for this latter operation had long been in preparation; but because of the need to redeploy American land and air forces from the European theatre it could not be carried out before the autumn of 1945; and on the 25th of May the American Chiefs of Staff had named the 1st of November as the target date.

The Allied forces in the Pacific and in South-East Asia had, of course, no inkling of the momentous discussions and decisions outlined above. Although by the end of June they probably realised that the longed-for victory could not be very far off, their purpose remained to sustain the offensive by all arms up to the climax of the invasion of the Japanese homeland and of the territories in the south still held by the enemy. Admiral Mountbatten was, however, recalled to Potsdam and there he learnt of the intention to use the atomic bombs early in August. Although he realised that this made the preparation of future plans 'rather unrealistic', he continued to assemble the forces needed for an assault on the west coast of Malaya between Port Swettenham and Port Dickson and to prepare for the re-occupation of Singapore later in the year.³ The landings in Malaya were to be carried out by two infantry divisions on the 9th of September, with three more divisions in the follow-up convoys. Meanwhile the naval forces in the Indian Ocean were busily

¹ Although at the Casablanca conference in January 1943, when the 'unconditional surrender' policy was first stated, it had not been specifically applied to Japan, the Allies had accepted that she was as much subject to that policy as Germany. See Ehrman, *Grand Strategy*, Vol. VI (H.M.S.O., 1956), p. 279.

² See Ehrman, *op. cit.*, pp. 304-307, and Robert J. C. Butow, *Japan's Decision to Surrender* (O.U.P., 1954), for a full study of this question.

³ See *Report to the Combined Chiefs of Staff by the Supreme Allied Commander, South-East Asia, 1943-45*. (H.M.S.O., 1951), p. 182, and Map 36 of that publication.



The surrender of Japan

The formal surrender on board U.S.S. *Missouri* in Tokyo Bay,
2nd September, 1945.

Admiral Sir Bruce Fraser, C.-in-C., British Pacific Fleet, signing on
behalf of Great Britain. Standing behind him are (L. to R.) General
Douglas MacArthur, Vice-Admiral Sir Bernard Rawlings and Rear-
Admiral E. J. P. Brind.

After the signature of the instrument of surrender 1,000 Allied aircraft
fly over Tokyo. Taken from H.M.S. *Duke of York*.





The surrender of the Japanese in South-East Asia

Admiral Lord Louis Mountbatten signing the instrument of surrender
in the Singapore Municipal Buildings, 12th September, 1945.

The scene on board H.M.S. *Glory* at Rabaul,
New Britain, 6th September, 1945.



employed in the approaches to the ports which we expected to re-occupy before long. Thus early in July sweepers cleared the eastern side of the Nicobars, while surface forces covered their activities and bombarded targets on shore. Next, on the 19th, a minesweeping and bombardment force left Ceylon to clear the approaches to Phuket Island off the Kra Isthmus¹, while aircraft from the escort carriers *Ameer* and *Empress* attacked enemy airfields and other targets onshore. On the 26th there took place against this force the only Kamikaze attack carried out in the Indian Ocean.² Although three suicide planes were shot down before they reached their targets, one hit the minesweeper *Vestal*, and damaged her so severely that she had to be sunk. This proved to be the last war operation by the East Indies Fleet; for on the 11th of August, while an escort carrier force was on its way to attack Penang and Medan, news was received that the Japanese had decided to accept the terms of the Potsdam declaration, and the ships were recalled. We will return later to the events in South-East Asia which followed the surrender of Japan; for it is time to review the progress made with the blockade of Japan.

Although every year of the war had seen an increase in the rate of loss inflicted on the Japanese merchant navy, it was not until November 1943 that it rose steeply. The reader will remember that it was at that time that the Japanese had tried to reverse the trend by belatedly introducing a general convoy system; but the late hour at which they adopted such measures, combined with the inadequate strength allocated to the naval command concerned, the failure to exploit the possibilities of shore-based air escort, and the lack of any control over the requisitioning of ships for military purposes destroyed

Table 40. *The Japanese Merchant Navy, Gains and Losses, 1941-1945*

Year	Sunk (tons)	Captured and Salvaged (tons)	Built (tons)	Available on 31st Dec. (tons)	Net Gain or Loss (+ or - (tons)
1941 (from 7th Dec.)	57,758	106,907	5,904	6,051,660	+ 55,053
1942	1,065,398	565,504	260,059	5,811,825	- 239,835
1943	1,820,919	109,028	769,085	4,869,019	- 942,806
1944	3,892,019	35,644	1,699,203	2,711,847	- 2,157,172
1945 (to 15th Aug.)	1,782,140	5,880	559,563	1,495,150	- 1,216,697
TOTALS	8,618,234	822,963	3,293,814	—	—

NOTE: Tonnage sunk includes marine casualties, which accounted for the heavy total of 97 ships (approximately 269,000 tons).

¹ See Map 36.

² With the possible exception of the attack on the fleet while withdrawing from the raid on Palembang in January 1945 (see p. 310).

the effectiveness of the new policy.¹ By the beginning of 1945 their General Escort Command possessed only fifty-five long-range vessels², and air cover for convoys was still lamentably weak. The table on page 367 shows the progressive decline in the tonnage of merchant ships available to the Japanese.

The principal instruments which the Allies employed to enforce the blockade were submarines, direct attacks by aircraft, and mine-laying; and of those three the submarines achieved by far the greatest successes. It will be convenient to consider the use made of each instrument in turn.

At the beginning of 1945 the Americans had moved the main base of their powerful and far-ranging submarines forward from Pearl Harbour to Guam, thus increasing the time that each boat could stay on patrol. Before the end of the war they possessed about 170 splendidly equipped fleet-type submarines, of which some fifty could be kept on patrol simultaneously. Their own casualties were, considering the hazards of their work, remarkably light; for during the entire war only fifty-two American submarines were lost from all causes.³ The Seventh Fleet, still under Admiral Kinkaid, U.S.N., had also moved its submarine bases further forward, to Subic Bay in western Luzon, where Rear-Admiral J. Fife, U.S.N., had established the operational headquarters from which the submarines were controlled. Of the two British flotillas concerned, the 4th continued to work from Fremantle, but the 8th came to Subic Bay in the Philippines in May.⁴

In the Pacific, as in the Indian Ocean and East Indies, by 1945 it was very hard for submarines to find worthwhile targets in the open sea. They were in consequence forced to seek their prey in coastal waters, and many times did they boldly penetrate into enemy harbours and anchorages—in South-East Asia, off Korea and Manchuria, as well as in Japan proper. In May American submarines re-entered the Sea of Japan, which they had not visited since July 1943, and quickly inflicted such losses as forced the enemy to put their shipping into convoy. After June 1945, however, sinkings by submarines declined, and the most successful weapon employed in the process of finally sealing off the Japanese mainland then became the air-laid mine. The period of greatest success to the Allied submarines as instruments of blockade was in 1943 and 1944; and it was they who then struck lethal blows at the foundation stones of the

¹ See Part I of this volume, pp. 231–232, and this part, p. 229.

² Compare the British escort vessel strength devoted to the Atlantic Battle. See Vol. II, Appendix G.

³ Losses of British or British-controlled submarines totalled 90, of which 52 were lost in the Mediterranean and 3 in the Far East. See Appendix T for details.

⁴ See pp. 230–231 regarding the earlier operations by these flotillas.

entire Japanese war economy. The aggregate accomplishment of the submarines of all nations was to sink 1,153 Japanese merchant ships totalling 4,889,000 tons, which accounted for about 57 per cent of all Japanese losses.¹ The Americans sank by far the largest share of that total; but British (twenty-nine ships of 65,000 tons) and Dutch submarines (ten ships of 42,000 tons) also contributed a quota.²

To turn to direct attacks on enemy shipping by Allied aircraft, because the carrier-borne and shore-based striking forces were generally employed on the support of combined operations, and enemy merchant ships were only attacked incidentally to the main purpose in hand³, their contribution to the blockade of Japan was not great until the early months of 1944. After the Philippines had been regained, however, the American carrier aircraft began to devote a substantial effort to the disruption of Japanese mercantile traffic. We saw earlier how on the 10th of January 1945 three groups of the Fast Carrier Task Force entered the China Sea for the first time and in ten days sank forty-nine ships (260,000 tons)⁴. Those devastating blows forced the surviving Japanese ships to crawl slowly along the China coast from port to port; but even so they gained little or no respite, since the coastal waters were within range of American bombers flying from bases in China. Towards the end many air forces—British, Australian and New Zealand, as well as American—contributed to the blockade; but, as with the submarines, the American achievements were by far the greatest. The final statistics show that Allied aircraft sank 748 ships (2,488,000 tons), of which 359 ships (1,390,000 tons) were accounted for by the U.S. Navy's carrier planes, and 342 ships (908,000 tons) by American land-based aircraft; while American carrier and land-based aircraft shared in the destruction of twenty-three ships (114,300 tons). Thus Allied aircraft of all types were responsible for nearly twenty-nine per cent of Japan's total losses of merchant shipping (8,618,000 tons).⁵

Meanwhile minelaying in the 'Outer Zone' of the Japanese conquests had also been stepped up⁶; for the capture of the Philippines had made it far easier to infest the ports and rivers of the China Sea. As with the direct attacks on shipping many air commands—including the American bombers based on China, General MacArthur's

¹ Figures, which are to the nearest 1,000 tons, supplied by the Office of Naval History, U.S. Navy Department, are based mainly on the United States Joint Army-Navy Assessment Committee's report (Navexos P-468 of February, 1947). Ships under 500 tons are excluded.

² An additional five ships (7,864 tons) were sunk by mines laid by British submarines.

³ See Part I of this volume, pp. 335 and 340-341 regarding merchant shipping sunk at Truk on 17th February and in the Palaus on 30th March 1944.

⁴ See pp. 323-324.

⁵ Figures from Office of Naval History, U.S. Navy Department, are to the nearest 1,000 tons.

⁶ See p. 233 for definitions of the Japanese 'Inner' and 'Outer Zones'.

South-West Pacific Air Force in the Philippines, the Royal Air Force from India and Ceylon, and the Royal Australian Air Force from New Guinea—took a hand in the campaign. Though the great majority of the mines were laid from the air, British and American submarines also made a contribution—especially in the South-East Asia Command. Singapore, where Japanese warships had taken shelter after their expulsion from the Philippines, was repeatedly mined during the first three months of 1945; and three warships were sunk and ten damaged off that base. During the same period the Sumatran oil ports were also obstructed with air-laid mines; and so ineffective was the Japanese sweeping service that excellent results were obtained by laying a comparatively small number of mines. Between the 1st of June 1944 and the end of July 1945 British and American aircraft working from bases in India, Ceylon and Australia laid 3,770 mines in ports and river estuaries; and it was the long-range bombers of the R.A.F's Nos. 222 and 231 Groups which carried the main burden of the campaign in South-East Asia. These mines sank ten ships totalling 29,294 tons; and in addition they certainly impeded, and finally contributed a great deal to stopping the flow of oil from the ports of Sumatra and Borneo.

In March 1945 the China-based American long-range bombers turned their attention again to the Yangtse River, which had not been mined since August 1944¹, and quickly brought all traffic on its lower reaches to a halt. In all some 13,000 mines were dropped in 140 harbours of the Japanese 'Outer Zone', and their aggregate effect was to eliminate all possibility of seaborne traffic flowing to and from that vast area, and to keep the surviving enemy warships and merchantmen bottled up where they lay.

The virtually complete severance of communications between Japan and the territories of the 'Outer Zone' in March 1945 greatly enhanced the importance of maintaining those of the 'Inner Zone'—Manchuria, Korea and North China; a fact of which the Allies were perfectly aware. In the same month the Americans accordingly opened an intensive campaign of air minelaying, with the object of disrupting communications in the Inner Zone, and of closing the harbours of the Japanese homeland. It was appropriately named operation 'Starvation', and was mainly carried out by the B.29 (Superfortress) long-range bombers of the U.S. Army Air Force working from the Marianas.² In all over 12,000 mines were laid in the Inner Zone during the 142 days (March 27th–August 15th) of

¹ See p. 232.

² The U.S. Navy was supplied with mines for laying by its carrier-borne aircraft, and in March 1944 had used them in the attack on the Palau group (see Part I, p. 341); but in the final stages of the blockade of Japan it concentrated on direct attacks against shipping.

operation 'Starvation'; all were of the 'influence' type, and they were generally released by radar aiming from heights between five and eight thousand feet.¹ Variable delay mechanisms were widely used, and in the final weeks pressure-operated mines were mixed in with the magnetic and acoustic varieties. It was not long before these tactics completely overwhelmed the Japanese minesweeping service.

The abandonment by Japan of the Outer Zone, and the presence of strong Allied naval forces off her south and south-east coasts, increased the importance of the Shimonoseki Straits, by which nearly all ships coming from North China, Manchuria and Korea had to approach their destinations.² On the night of the 27th-28th of March the Americans accordingly started a systematic campaign to close the straits with mines. This took the Japanese by surprise and, although they made tremendous efforts to keep traffic moving, the passage was frequently closed, and they lost 115 ships in it during the next three months. By the middle of May transits through the Shimonoseki Straits had dropped to about half those of March. Access to the great ports of Osaka and Kobe had also been rendered very difficult, and American aircraft from the Ryukus had started to mine the Tsushima Straits as well.

By the beginning of July Allied aircraft were ranging almost continuously over the Japanese mainland and its sea approaches, and the blockade was virtually complete. No matter what other offensive measures were taken the surrender of Japan could not have been long deferred; for her people were on the verge of starvation, her economic plight was desperate, and her industries were in chaos. The blockade had, in fact, been far more successful than we realised at the time. Though the submarines had been the first and main instrument for its enforcement, it was the air-laid mines which finally strangled Japan. At the end of March, when operation 'Starvation' began, her mercantile tonnage had already fallen to the low figure of 1,800,000 tons, all but 150,000 tons of which was in the Inner Zone. Between that date and the end of the war over 200 ships totalling some half million tons were sunk by mines in the Inner Zone, and a great many more were damaged. One of the most interesting aspects of the operation was its outstanding economy from the Allied point of view; for only sixteen B.29s were lost in course of operation 'Starvation'. Taking the Allied minelaying campaign as a whole, its contribution to the destruction of the Japanese Merchant

¹ See Part I, p. 288, and this volume, p. 141, regarding the development of high altitude minelaying by the Royal Air Force, and its employment in the Baltic in the winter of 1944-1945.

² See Map 43.

Navy was 247 ships totalling 591,660 tons; which was about seven per cent of the total losses inflicted by all arms.¹

We must now turn to the final operations in the Pacific. Although a growing body of opinion in America held that Japan could be defeated by sea and air power without the necessity of invasion², planning for the latter purpose was still being pressed ahead. The expedition was to be mounted in the Ryukus and Philippines and was to be under General MacArthur's broad control; but command of all forces during the amphibious phase was placed in the hands of Admiral Nimitz. As the Strategic Air Force established in the Ryukus in July came under the control of General Arnold, who was responsible directly to the U.S. Chiefs of Staff, it will be seen that the Americans did not achieve a unified command for the final operations.

While planning for invasion was in progress, the bombardment of the Japanese mainland by the Strategic and Tactical Air Forces was greatly intensified, and the Third Fleet's carrier air crews resumed their similar offensive. The Fast Carrier Task Force had returned to Leyte in the middle of June after its long and arduous operations off Okinawa and the coast of Japan³; but barely three weeks later, to be precise on the 10th of July, it was back on station and ready to renew the strikes against targets on the Japanese mainland. So efficient were the American repair and supporting organisations that neither the typhoon which had struck the fleet earlier in the summer, nor the repeated attacks by Kamikazes had made the slightest impression on its strength. Vice-Admiral J. S. McCain now had under his orders sixteen carriers, eight battleships, nineteen cruisers and over sixty destroyers, organised as before into three Task Groups. Admiral Halsey flew his flag in the battleship *Missouri*, which worked in the same group as McCain's flagship, the carrier *Shangri-la*.

On the 10th of July the full strength of the Third Fleet came into action once again with a series of heavy attacks by the carrier air groups on targets in the Tokyo plain. Opposition was surprisingly light and, as soon as he had refuelled his ships, McCain moved north to a position off the coast of Hokkaido. His purpose now was to strike at targets in that island and western Honshu, which lay beyond the practical range of the Tactical Air Forces based on Okinawa. Fog however put a stop to flying until the 14th, when a widespread

¹ Figures from United States Joint Army-Navy Assessment Committee (Navexos P-468, February 1947), as amended by Office of Naval History, U.S. Navy Department.

² For example, Fleet Admiral W. D. Leahy in *I was There* (Gollancz, 1950) states (p. 296) that as early as July 1944 President Roosevelt put forward this view, and that MacArthur and Nimitz both agreed with him.

³ See p. 335.

onslaught on airfields, transport and shipping was begun. The American carrier aircraft first attacked the ships which carried coal across the straits from Hokkaido to Honshu¹, and sank or disabled ten out of the twelve train ferries employed on that important service. At the same time battleships, cruisers and destroyers moved close in shore, and heavily bombarded the steel works situated in Hokkaido. This was the first time that Allied naval guns had engaged targets on the Japanese mainland, and the damage they caused was widespread. The bombardment ships encountered no opposition of any kind, and on the conclusion of the operation Halsey withdrew to refuel and replenish from his fleet train.

It has already been told how Admiral Rawlings, with the main body of the British Pacific Fleet, left Sydney for the north on the 28th of June.² On the 16th of July, after the conclusion of the Third Fleet's operations against Hokkaido, he met Admiral Halsey, and the two commanders conferred on the tasks to be allotted to the British force, tactical control of which had been reserved to its own commander. Halsey offered three alternatives. The first was that the British Pacific Fleet should form the fourth Task Group in McCain's force, conforming to the general movements of the latter, but not receiving direct orders from its commander; the second was that Rawlings's ships should work semi-independently and at a distance of sixty to seventy miles from McCain's; while the third proposal gave the British Pacific Fleet complete independence, in which case certain targets in Japan would be allocated to it.³ Admiral Rawlings unhesitatingly accepted the first alternative, and throughout the succeeding weeks the British Pacific Fleet worked as an additional group in the Fast Carrier Task Force—an arrangement which proved entirely satisfactory to the British and American commanders.

On the 17th of July the Third Fleet, reinforced by the British contingent, was ready to strike again at the dense industrial complex around Tokyo. Though bad weather frustrated the American operations, the British aircrews, to whom targets farther north had been allotted, found clear enough weather to get in their blows. That night the *King George V* joined up with an American force of heavy bombarding ships, and they closed the coast about fifty miles north of Tokyo to shell the industrial area around Hitachi. The British battleship contributed 267 rounds from her 14-inch guns; and although it is difficult to assess the results of the naval gunfire separately from the damage caused by concurrent air attacks, the presence of so many powerful Allied warships close off their coasts

¹ See Map 43.

² See p. 363.

³ See W. F. Halsey, *Admiral Halsey's Story* (McGraw Hill Book Co., 1947), pp. 261–272.

undoubtedly made a deep impression on the harassed population of Japan's capital city.

Next afternoon, the 18th, American carrier aircrews struck the naval base of Yokosuka, where they severely damaged the battleship *Nagato*, and destroyed a large part of the base installations. The *Nagato*, however, remained afloat.¹ On this occasion anti-aircraft fire was heavy, but there was still no sign of the expected retaliatory air attacks. Investigations made after the war suggest that the Japanese had concealed and dispersed their surviving aircraft so successfully that they were unable to concentrate them again when the time came to use them. While the Americans were occupied with Yokosuka, the British aircrews were attacking airfields around Tokyo; but they encountered little enemy activity.

It was now the height of the typhoon season, bad flying conditions greatly restricted the carriers' work, and the commanders had to seize opportunities to refuel whenever they occurred. The need to replenish quickly in between storms, together with Admiral Halsey's energetic and flexible tactics—for he commonly struck at widely separated points with only a few days between successive blows—emphasised still further the hardship imposed on the British ships by the small and slow tankers on which they had to depend. In fact on one occasion it was only the timely intervention of a typhoon at the American fuelling rendezvous which saved Admiral Rawlings from the indignity of admitting that his ships could not be ready in time for the next strikes; for while the storm considerably avoided the British fuelling rendezvous, thus enabling our ships to replenish, the American tankers were forced off station and Halsey had therefore to postpone refuelling. None the less when Halsey withdrew to refuel on the 19th of July things became so difficult for the British force that Rawlings was forced to ask that three of his cruisers should replenish from American tankers. Permission was granted readily enough; but it emphasised yet again the grave disability under which the British ships laboured. Reporting on this experience Admiral Fraser, the Commander-in-Chief, told the Admiralty how 'at the time of writing . . . with easy grace he (Halsey) is striking here one day and there the next, replenishing at sea and returning to harbour as the situation demands. With dogged persistence the British Pacific Fleet is keeping up . . . but it is tied by a string to Australia, and much handicapped by its few small tankers.'

Bad weather continued until the 24th of July, on which day Halsey struck the naval base at Kure, where lay the most important remnants of the Japanese fleet. Though the warships were already incapable of movement and had lost all military value, their destruc-

¹ She was used as a target ship in the atomic bomb trials at Bikini in 1946.

tion was considered necessary for a variety of reasons which the Third Fleet Commander has himself explained.¹ The British ships were not allowed to take part in their immolation, but instead were allocated targets in the Inland Sea and the commercial port of Osaka. Admiral Halsey has told how he accepted his Chief of Staff's view that this should be done 'to forestall a possible post-war claim by Britain that she had delivered even a part of the final blow that demolished the Japanese fleet'.² During three days of unremitting onslaught on the 24th, 25th and 28th, with a fuelling period between the last two, the American carrier aircrews sank at their moorings the carrier *Amagi*, the 'battleship-carriers' *Ise* and *Hyuga*, the battleship *Haruna*, five cruisers (two of them old ships built at the turn of the century and used only for training purposes), and several smaller warships. The Japanese Navy thus virtually ceased to exist, and Pearl Harbour was finally avenged—which was probably the purpose uppermost in Halsey's mind at the time.

While the attack on Kure was in progress the British carrier aircrews sank two frigates and several smaller vessels in the Inland Sea, and probably also inflicted damage on an escort carrier, which may have been the *Kaiyo*.³ Slight airborne opposition was encountered during these sorties, but it was anti-aircraft fire that caused most of the casualties suffered by the striking forces. There were no attempts at kamikaze attacks on the fleet, and the few enemy aircraft which half-heartedly approached it were quickly shot down.

It was, however, during this sustained and final onslaught on the remnants of the Japanese Navy that it got in a final blow against its American adversaries. The heavy cruiser *Indianapolis* had left San Francisco on the 16th of July to carry fissionable material for the atomic bombs to Tinian. After delivering her cargo she called at Guam, whence she proceeded unescorted to Leyte. At about midnight on the 29th–30th she was torpedoed by the Japanese submarine I.58, and sank so quickly that no distress message was got away. Nor was the fact that she was overdue noticed until some sixty hours after she should have arrived at Leyte. The chance sighting of some survivors by a patrol plane enabled 318 of her crew to be rescued, but 878 perished. It was the last serious loss suffered by the U.S. Navy.

¹ See W. F. Halsey, *Admiral Halsey's Story* (McGraw Hill Book Co., 1947), p. 265.

² W. F. Halsey, *op. cit.*, p. 265.

³ The results accomplished in these attacks cannot be stated with precision, since U.S. Army aircraft were working over the same area at the time. Moreover there is some doubt whether the escort carrier attacked by the British aircraft was the *Kaiyo*, as Japanese records state that she was bombed and severely damaged at Beppu (which is on the east coast of Kyushu, not on the Inland Sea) on 24th July 1945. The date is, however, the same as that of the carrier attacks referred to above; and photographs taken by British aircraft on 28th July show a ship of her type severely damaged but possibly still afloat at the scene of the attacks carried out four days earlier.

We will now take temporary leave of the Third Fleet, and turn to an interesting series of operations which took place at this time farther south. In February 1945 the depot ship *Bonaventure* left England for the Pacific with six of the improved type of midget submarine called XE-craft, and in the following July she arrived in Brunei Bay.¹ The authorities could not, however, at first foresee any use for such craft in the Pacific, and the decision was therefore made to scrap them and turn the depot ship over to the Fleet Train. Then a demand arose to interrupt Japanese cable communications between Singapore, Saigon and Hong Kong; and when the captain of the *Bonaventure* pointed out that his XE-craft were very suitable for such purposes they were at once reprieved. In addition to the cable cutting operation they were given the task of destroying the heavy cruisers *Takao* and *Myoko*, which were in Singapore and, although damaged, might be repaired sufficiently to molest the forces which Admiral Mountbatten was assembling for the invasion of Malaya.² On the 26th of July the submarines *Spark* and *Stygian* accordingly left Brunei for Singapore with XE₁ (Lieutenant J. E. Smart, R.N.V.R.) and XE₃ (Lieutenant I. E. Fraser, R.N.R.) in tow. Four days later the parent submarines slipped the midgets at the eastern entrance to the Singapore Straits after dark and withdrew to a rendezvous further out to sea. Lieutenant Fraser's XE₃ safely negotiated the forty mile passage to the naval base in Johore Strait, but found the *Takao* lying in such shallow water that there was barely room for him to manoeuvre underneath her. It was with the greatest difficulty that the diver in the crew, Leading Seaman J. J. Magennis, placed the limpet mines carried on one side of the midget; but he managed it in the end. Lieutenant Fraser then released the explosive charge carried on the other side; but when he tried to withdraw he found that his craft was jammed between the cruiser's hull and the bottom. After a hectic struggle he extricated his vessel, but broke surface in doing so and was fortunate not to be sighted. He then submerged again, and finally made the rendezvous with the *Stygian* safely.³ Meanwhile XE₁, which should have been ahead of Fraser's craft, had been delayed by Japanese patrol vessels, and Smart realised that he could not reach the *Myoko*, which was lying two miles farther up the strait, and complete his attack before XE₃'s charges were due to explode. He therefore decided to switch to the *Takao*, successfully placed his charges as close to her as he could get, and then withdrew to his rendezvous with the *Spark*. The double attack by the two XE-craft damaged the Japanese cruiser severely, and she subsided on to the sea bed. The

¹ See Map 46.

² See p. 320.

³ Lieutenant Fraser and Leading Seaman Magennis were both awarded the Victoria Cross for this exploit.

two midgets and their parent submarines all reached Brunei Bay safely on the 4th of August.

Meanwhile the *Spearhead* had towed XE₄ from Brunei Bay to a position off Saigon. There the tow was slipped on the evening of the 30th of July, and next day the midget's crew successfully located and cut the cables. Lastly the *Selene* with XE₅ in tow left Subic Bay on the 27th of July and spent three and a half days searching for the cables in deep mud off Hong Kong. Though her Captain was not certain that he had succeeded in his purpose we found out after the war that he did in fact put the cable out of action.¹ Though it would be too much to claim that these gallant efforts contributed materially to the defeat of Japan, they confirmed that midget submarines provide a very valuable means of penetrating into closely guarded waters in order to attack specially important targets.

After destroying the remnants of the Japanese Navy in Kure the Third Fleet steamed to the north-east to attack airfields in central Honshu and shipping in Nagoya Bay.² On the 29th of July Halsey detached a bombardment force, including the *King George V*, to shell the industrial town of Hamamatsu that night, and next day the carrier aircrews went into action yet again. It is probable that British aircraft then sank the frigate *Okinawa*.³ On completion of these attacks Rawlings withdrew to his fuelling rendezvous, hoping to gain a good start on his American comrades; but the weather turned exceedingly stormy, with typhoon after typhoon passing close by, and it was only with the greatest difficulty that replenishment was carried out. By the 3rd of August Halsey was ready to strike again; but for several days the weather completely frustrated all operations.

On the 6th of August the world heard, with a shudder of apprehension, that an atomic bomb had been dropped on Hiroshima. Two days later Russia declared war on Japan, and on the 9th the second atomic bomb burst above Nagasaki. At that time the Third Fleet was off the north-east coast of Honshu, striking at airfields on that island, where we believed the Japanese to be concentrating large numbers of aircraft. On the 9th and 10th attacks on the airfields took place with scarcely a break, and enormous destruction was accomplished. Contemporary claims suggested that some 700 enemy aircraft were destroyed.⁴ It was during these operations that the Kamikazes at last

¹ The Captains of XE₄ and XE₅, Lieutenant M. H. Shean, R.A.N.V.R., and Lieutenant H. P. Westmacott, had carried out the successful penetrations into Bergen harbour in April and September 1944. See Part I, p. 285, and this part, p. 163.

² See Map 43.

³ From photographs taken at the time; but she is credited to U.S. naval aircraft in American records.

⁴ It was during these attacks that Lieutenant R. H. Gray, R.C.N.V.R., flying from the *Formidable*, won a posthumous Victoria Cross for his gallantry in pressing home his attack on Japanese warships in Onegawa harbour in face of very heavy anti-aircraft fire. He sank his target, but was shot down in the process.

reappeared in some numbers. Most of them were shot down before they reached the fleet, but an American destroyer was hit and severely damaged. Meanwhile another bombardment group, which included the cruisers *Gambia* (R.N.Z.N.) and *Newfoundland*, shelled the iron works at Kamaishi in broad daylight, with American aircraft spotting for the British ships as well as for their own. As the fleet withdrew to refuel on the 10th the news that Japan had decided to accept the terms of the Potsdam declaration was received from the Domei agency. Next day, however, all ships were warned that vigilance must not be relaxed; for it was possible that desperate attempts to strike at the fleet might yet take place.

It had been arranged some time previously that, after the refuelling operation mentioned above, the British Pacific Fleet should return to Sydney. In consequence no fresh tankers had been sent up to the Japanese coast, and when the sudden developments of the 11th August arose it was too late to bring up more fuel. Although some of Admiral Rawlings's ships had then been at sea for over a month without stopping their main engines, neither the state of their machinery nor the need to rest their crews made their departure from the scene imperative. It was solely the lack of suitable fast tankers which caused Admiral Fraser to order Rawlings to organise a small token force to remain off Japan under Vice-Admiral McCain, U.S.N., and to send the remainder south; and it thus came to pass that the greater part of the British Pacific Fleet, to the lasting regret of its men, was deprived of all participation in the final scenes.

On the 12th of August the *King George V*, *Indefatigable*, *Gambia* (R.N.Z.N.), *Newfoundland* and ten destroyers (two of them from the R.A.N.) accordingly came under the direct control of the commander of the Fast Carrier Task Force, while the remainder of the British Pacific Fleet set course for Australia. It had come out to the new theatre ready and willing to learn new methods from its Allies; and if it was the Americans who taught us that modern warships, suitably supported, could keep the seas and engage continuously in active operations for upwards of two months—a feat which, in 1939, we would never have considered practicable—there is no doubt that the staunchness and spirit of the British crews finally won the whole-hearted admiration of their Allies, some of whom had originally been very reluctant to see the White Ensign ships fighting alongside their own. It is possible that, in the long view, the renewal and strengthening of mutual confidence between the sea services of the two principal maritime nations will stand as the greatest of the accomplishments of the British Pacific Fleet.

On the 13th of August the carrier aircraft once again attacked targets in the Tokyo plain, after which the fleet refuelled. Then, at dawn on the 15th, they struck the last of their many blows: for at

7 a.m. Admiral Nimitz cancelled all further offensive sorties. But that order did not, in fact, quite mark the end of hostilities, for at 11.20 that morning a Japanese aircraft dropped two bombs close to the *Indefatigable*. A few others tried to approach the fleet, but were shot down by patrolling fighters. Apparently one of the planes which set out on these final suicide missions was flown by Admiral Ugaki, commander of the naval air fleet of which the Kamikazes formed a part.¹

On the 27th August, when Admiral Rawlings's flagship anchored at the entrance to Tokyo Bay the snow-capped cone of Fujiyama, the sacred mountain of Japan, stood out exceptionally clearly against the western sky; and, as evening drew on, the watchers on the quarter-deck of the *King George V* saw the red orb of the sun go down right into the middle of the volcano's crater. Rarely, if ever, can a heavenly body have appeared to act with such appropriate symbolism.

It now seems improbable that the dropping of the atomic bombs made any appreciable difference to the military prospects of the last enemy; and the tardy declaration of war by Russia certainly did not affect the issue.² Studies of Japan's condition carried out since the war, with assistance from our former enemies, have made it plain that by the end of July 1945 she had already suffered complete and absolute defeat—and she had suffered it at the hands of sea power, applied in its modern form.

Looking back today it seems that the two greatest errors committed by the Japanese, which sowed the seeds of their defeat, lay firstly in so greatly over-reaching their military and industrial strength at the time of their sweeping successes in 1941–1942³; and, secondly, in the excessive influence on politics and strategy of the Army hierarchy, which committed them so fatally to the campaigns on the mainland of Asia at the time when the sea communications, on which all their overseas forces depended, were far from adequately secure. But the Japanese Navy must carry the main responsibility for an error of scarcely lesser moment—namely the long failure to recognise the importance of merchant shipping, to organise its employment with the utmost economy, to protect it by sailing ships in escorted convoys, and to provide adequately for the repair of damaged ships and the replacement of losses by new construction. None of those cardinal points in the prosecution of maritime war was

¹ See p. 346, fn. 2.

² Russian bombers are believed to have sunk two Japanese merchant ships.

³ See Vol. II, p. 21.

understood, let alone admitted, in the Japanese High Command until it was too late to apply the remedies; and the basic reason for this fundamental error was that they obstinately continued to regard the efficient and economic employment of mercantile tonnage as part of a 'defensive' strategy with which they wished to have no truck. A corollary to this false reasoning was the comparatively small effort devoted to the improvement of anti-submarine and minesweeping techniques; but the impatience of the Japanese temperament was probably a contributory cause to the poor showing they made in those arts. Even when the Japanese had begun to convoy their shipping they never managed properly to integrate the various arms necessary for its defence; and it may reasonably be claimed that the opposition which their convoys had to face, at any rate in 1943 and 1944, was no greater than that which we ourselves had surmounted in fighting our convoys through to Malta and north Russia.

As long as Japan's main fleets held command of the sea in the Pacific her overseas operations prospered; and her mercantile tonnage, though wastefully employed and frequently squandered, could in general meet the nation's industrial and military needs. But in the Battle of the Coral Sea (7th-9th May 1942) the Japanese main fleet suffered its first check, and at Midway (4th June 1942) it was decisively defeated. That climacteric frustrated any further strategic offensive by the Japanese; and the severe attrition suffered in the long campaign in the Solomons (August 1942-December 1943) further reduced the possibility that they might regain the initiative. Meanwhile the rapid recovery of the American Navy from the effects of Pearl Harbour had enabled the first of the great combined operations in the Central Pacific to be launched against the Gilbert Islands in November 1943; and from that time onwards the power of the American offensive gained steadily in momentum. Exploiting their carrier air power to the limit, but actually assaulting only those islands which would enable them to gain the advanced bases needed for the next blow, the American amphibious forces leapt across vast distances in the twin offensives westwards across the Central Pacific and north-westwards from the Solomons. Little over two months after the Gilberts had been seized they gained the key islands of the Marshall group (31st January 1944); and in April of that same year General MacArthur established himself firmly in Humboldt Bay on the north coast of New Guinea. On the 15th of June 1944 Nimitz assaulted the Marianas, and then came the first attempt by the Japanese Navy since Midway to intervene in strength in the Central Pacific. The Battle of the Philippine Sea (19th-21st June 1944), however, merely increased the disparity between the two contestants, and did not impose the slightest change of plan, nor any delay on the Americans; for on the 15th of September they seized the

Palau Islands. The stage was now set for the two great offensives to join hands in the recapture of the Philippines, and on the 20th of October American forces landed in Leyte Gulf. Then, in the four days of widespread sea and air fighting collectively called the Battle of Leyte Gulf (23rd–26th October 1944), the U.S. Navy inflicted such losses as reduced the Japanese Navy to virtual impotence. Finally the assaults on Iwo Jima and Okinawa (9th February and 1st April 1945) removed the last two blocks from the sea road leading to the Japanese homeland. It will thus be seen that it was the succession of defeats suffered by Japan's main fleets which made possible the great American offensive campaigns of 1943–1944; and the chief instruments which inflicted those defeats were the carrier-borne aircraft of the Third or Fifth Fleets.

In sum the concluding months of the war against Japan provide a fascinating study to the student of maritime war; for they show even more clearly than the struggle with Germany the fatal consequences of departure from well-established principles. For nearly six years Germany tried her utmost to bring Britain to her knees by blockade; and she failed. Yet in little more than half that time Japan was utterly defeated by the very same instruments—the submarine, the bomber and the mine—which Germany had deployed against us in vain. It was the sinking of her merchant ships which deprived Japan of oil, of food for her people, and of raw materials for her industries; and it was the loss of those ships which, for all the sacrifices made by her people, rendered further resistance impossible.

The formal surrender of Japan took place aboard the *Missouri*, in which Admiral Nimitz had temporarily hoisted his flag, in Tokyo Bay on Sunday the 2nd of September 1945. At precisely 9 a.m. the Japanese envoys arrived on board the battleship, and a few minutes later General MacArthur and Admiral Nimitz walked on to the quarterdeck, where large numbers of high-ranking officers of all the Allied services were assembled. After Mr Shigemitsu, the Japanese Foreign Minister, and General Umezu of the Imperial General Staff had signed the instrument of surrender, General MacArthur added his signature as Supreme Commander, Allied Powers. Then the representatives of each of the Allied nations signed in turn. Admiral Sir Bruce Fraser, who had come north from Australia in the *Duke of York*, signed for the United Kingdom. The ceremony lasted only twenty minutes, and at its conclusion 450 aircraft flown off from the Fast Carrier Task Force, which was at sea off the coast, roared overhead. It was highly appropriate that the instruments of maritime power which had contributed so much to the downfall of Japan should have been thus represented at the closing scene.

On the 15th of August, the day on which Admiral Mountbatten issued orders to suspend all land, sea and air operations within his command, he took over responsibility for the Netherlands East Indies and for all territories south of a line drawn from the coast of Indo-China in 16° North to the equator in Dutch New Guinea.¹ Because of the uncertainty whether the widely scattered but still very numerous Japanese forces within the vast area for which he was now responsible would obey the surrender order, Mountbatten considered it essential to have sufficient strength at hand. He therefore decided that the assault which he had intended to launch against the west coast of Malaya on the 9th of September should take place substantially as planned.² Indeed by the middle of August preparations were so far advanced that any major alterations to the plan would have been likely to cause confusion; and it was impossible to divert the expedition to Singapore until the approaches had been swept clear of mines. But the greatest difficulty in organising the rapid re-occupation of Malaya and other territories arose through the order issued by General MacArthur as Supreme Commander, Allied Powers, on the 19th August that no landings were to take place until after the instrument of surrender had been signed. On that date virtually the whole East Indies Fleet, with every available minesweeper, was steaming towards the Malayan peninsula, under the command of Vice-Admiral H. T. C. Walker, with the intention of occupying Penang, which was urgently needed as an advanced base for clearing the approaches to Singapore. The delay imposed by MacArthur dislocated all the planned arrangements in South-East Asia, and produced acute supply problems in the fleet; for the small vessels could not retrace their steps to Ceylon against the south-west monsoon, and it was plainly undesirable for the main body to return whence it had come with nothing accomplished. Admiral Walker finally took most of the fleet under the lee of the Nicobars, where there was enough shelter to refuel his larger ships from tankers, and he could provision the small vessels from the larger ones. This uncomfortable state of affairs lasted until the 28th, when the main body of the fleet arrived off Penang. The preliminary arrangements for the Japanese surrender were then put in hand, and the minesweepers started their clearance work. On the 2nd of September Admiral Walker accepted the surrender of the local Japanese commanders on board his flagship, the *Nelson*, and next day the Royal Marines of the fleet landed at Penang. At the same time the cruisers *London* and *Cumberland* put ashore their marine detachments at Sabang in Sumatra.

Meanwhile the naval Commander-in-Chief, Admiral Sir Arthur

¹ See *Report of Supreme Allied Commander, South-East Asia* (H.M.S.O., 1951), p. 181, and Map 36 of that document.

² See p. 320 and Report of S.A.C.S.E.A., p. 183.

Power, had gone ahead from Penang towards Singapore in the cruiser *Cleopatra*, following close in the wake of the minesweepers. On the 3rd of September the *Cleopatra* and the 6th Minesweeping Flotilla entered the great port and base from which we had been so ignominiously expelled in February 1942. Next day the cruiser *Sussex* arrived with a convoy in which the 5th Indian Division was embarked. The ships carrying the assault forces originally intended for the landings in western Malaya reached Port Swettenham and Port Dickson on the 9th, and within three days over 100,000 men had landed. There were no untoward incidents, and the Japanese observed the surrender terms punctiliously. Finally on the 12th of September Admiral Mountbatten, as Supreme Commander, Allied Powers South-East Asia, accepted the surrender of General Itagaki in the Singapore Municipal Buildings.

Shortly before the Japanese surrender the Chiefs of Staff in London, had, on the instructions of the Cabinet, considered the measures which should be taken for the reoccupation of Hong Kong, and on the 13th of August the Admiralty accordingly signalled their instructions to Admiral Fraser. However the susceptibilities of General Chiang Kai Shek, the difficulties produced by General MacArthur's order already referred to, and American reluctance to involve themselves in any way in the recovery of a British colonial territory necessitated a long interchange of messages before the matter was settled. Meanwhile Admiral Fraser had completed his plans to send in a squadron under Rear-Admiral C. H. J. Harcourt, who had recently arrived on the station in command of the light fleet carriers *Venerable*, *Vengeance*, *Colossus* and *Glory* (known as the 11th Aircraft Carrier Squadron). On the 27th of August Admiral Harcourt left Subic Bay in the Philippines in the *Indomitable*, and three days later, having shifted his flag to the cruiser *Swiftsure* in order to reduce the risk from mines, he entered Hong Kong harbour with the *Euryalus*, *Prince Robert* (R.C.N.) and several smaller ships. When a concentration of suicide boats of uncertain intentions was observed lying off a nearby island, it was considered wise to destroy them by bombing; but the re-entry of British forces was not marked by any incidents. The surrender ceremony took place on the 16th of September, with Admiral Harcourt, who had been appointed Commander-in-Chief, Hong Kong, and Head of Military Administration, signing for the British and Chinese Governments.

Lastly arrangements had been made for the surrender of some 140,000 Japanese who had held out to the end in the Bismarck Archipelago, the Solomon Islands, and New Guinea—the garrisons which had been by-passed in the earlier offensive drives by the South and South-West Pacific commands. The Australians having asked Admiral Fraser to make a suitable ship available, the light fleet

carrier *Glory* and two sloops arrived off Rabaul on the 6th of September, and the surrender was signed on board her by General B. A. H. Sturdee of the Australian Army. On the 15th of September the cruiser *Cumberland*, accompanied by two frigates and some minesweepers, entered Batavia, and merchantmen with food for the population soon followed; but the re-entry of Allied forces into the Dutch East Indies produced the most distressing difficulties, for they soon became involved in what amounted to civil war on a considerable scale. Early in October we re-occupied the Andaman and Nicobar Islands, and they were the last of the British possessions which had fallen into Japanese hands to be restored to their former allegiance.

With over half a million Japanese fighting men scattered over the territories for which Admiral Mountbatten was now responsible the first important issue was to make certain that his former enemies would obey his orders. On the 27th of August therefore the Supreme Commander called a conference at Rangoon at which the Japanese were represented by the senior officers most readily available. When it became plain from the deliberations at Rangoon that the Japanese would obey his orders Mountbatten decided that, until such time as we were ready and able to take over full control, his authority would be exercised and order would be maintained through the Japanese chain of command. With the big problems of control and order thus disposed of more easily than at one time seemed likely, the British authorities were able to turn their full attention to the urgent matter of transporting food to the starving populations of the various territories, and of evacuating the large numbers of Allied prisoners-of-war and internees, of whom there were some 127,000 scattered in 250 camps throughout the enlarged South-East Asia Command. By the end of November the vast majority of these unfortunate people, most of whom had been languishing in terrible conditions for over three years, had been safely moved to Singapore or Rangoon, whence they were carried to their homelands as quickly as possible. The problem of feeding the civil populations of the territories, however, proved much more intractable; for not only was it impossible to procure quickly the huge quantities of food needed, but there was an acute shortage of merchant ships to carry it to the ports of discharge. Although by the end of the year matters had greatly improved, it was a very long time before the life of the civil communities began to return to normal.

It thus came to pass that, although the acts of submission by the Japanese in Tokyo Bay, Singapore, Hong Kong and Rabaul marked the final setting of the Rising Sun—the emblem of Imperial Japan—to the ships of the British Pacific and East Indies Fleets those events brought no period of rest. They were required to clear the mines and

obstructions from the recently recovered harbours and inshore waters, to collect and transport the released prisoners-of-war, to carry in urgently needed medical supplies, to land and support our forces engaged on maintaining public order all over the theatre, and to perform any or all of the multifarious tasks which always fall to warship crews. In the closing scenes of the long drama of the Indian Ocean and Pacific the carriers and cruisers, the supply ships of the Fleet Train, and many smaller vessels were thus continuously employed on urgent humanitarian tasks; and the men who had so lately been striking at the enemy with all their might set their hands to the gentler duties of restoring the shattered physique of their less fortunate comrades and relieving the acute distress which prevailed on shore throughout the entire theatre.

CHAPTER XXIX

CONCLUSION AND INQUIRY

... ἱστορίας ἀπόδειξις ἦδε, ὡς μήτε τὰ γενόμενα
ἐξ ἀνθρώπων τῷ χρόνῳ ἐξίτηλα γένηται . . .
Here I set forth my inquiry, in order that
great deeds may not fade from memory . . .

Herodotus, I, 1.

'Principles are not less sacred because their
duration cannot be guaranteed.'

Sir Isaiah Berlin, *Two Concepts of Liberty*
(O.U.P., 1959).

T^O the ancient Greeks 'Historia' meant 'Inquiry', and was not necessarily limited to the past. Perhaps therefore the contemporary historian of the twentieth century may be allowed to follow the earlier precedent, and to suggest the conclusions which may be drawn from his study of the greatest maritime war in which the British Empire has ever been involved. Such a purpose is made much easier by the fact that the path has already been well signposted by a small but distinguished band of historians who, in comparatively recent times, have given us the results of their studies of earlier struggles; and the debt which the present writer owes to Rear-Admiral A. T. Mahan, U.S.N., Sir Julian Corbett, and Admiral Sir Herbert Richmond will easily be recognised by the reader who is familiar with their works. If it was Mahan who first analysed the nature of sea power, and identified it as the foundation on which British wealth, strength and prosperity had been built¹, it was Corbett who propounded the principles governing maritime war, and stated the fundamental requirements for the successful prosecution of a maritime strategy²; and in quite recent years Richmond constantly endeavoured to place maritime needs and purposes in the foreground of the thought of his country's statesmen and politicians.³ Before, however, we consider how far the prognoses of the earlier writers were shown to be applicable to the recent struggle it may be justifiable to ponder the question of how it came to pass that, whereas the 1914-1918 war was chiefly fought on the basis of a continental strategy, in that of 1939-1945 we reverted to the earlier concept of using maritime power to create the conditions necessary to bring

¹ See *The Influence of Sea Power on History* (Sampson Low, Marston and Co., 1892).

² See *Some Principles of Maritime Strategy* (Longmans, Green and Co., 1911).

³ See *Statesmen and Sea Power* (Oxford University Press, 1946).

about the downfall of our enemies. It is something of a paradox that the first, and perhaps the most important step in that direction was the total expulsion of our armies from the continent in 1940; for until that happened we were deeply committed to supporting a continental campaign, which we seem to have expected to conform to the pattern of 1914-1918. After the German victories on land had brought down in ruins the whole structure of Allied strategy as first conceived, it was plain that only by rebuilding it on a different foundation could we hope to continue the struggle, let alone gain the final victory. The re-orientation of our strategy on a maritime basis did not, however, come about immediately; and many setbacks, some of which now appear to have been attributable to the misuse of the none too lavish maritime forces available to us, and others to the heavy pressure which Mr Churchill exerted on the Chiefs of Staff in favour of premature offensives, were to be suffered before we came to exploit its benefits fully. Soon after Mr Churchill had come to power at the nadir of his country's fortunes in May 1940, it became all too plain that the first and most immediate need would be to use our maritime power to rescue our army from the continent; and that survival would then depend on our ability to defeat another of the recurrent threats to invade these islands, with which the history of Britain is so liberally punctuated. In fact the danger of invasion, which was undoubtedly real during the weeks following the return of the army from France, when comparatively small forces might have sufficed to overwhelm the ill-equipped defenders of these islands, thereafter receded rapidly; yet, even after Germany had launched her attack on Russia, we continued to devote considerable effort and resources to countering such a purpose. The reason why, after the summer of 1940, the invasion of Britain was, as most German authorities realised, not a practical operation of war, was that control of the sea was an absolute pre-requisite to the launching of a great overseas expedition. Such control would plainly have to be fought for—in the air as well as on the sea; and the victory of Fighter Command not only destroyed the possibility of the Germans gaining mastery of the air over the Channel, but brought them face to face with the fact that their Navy was totally inadequate to the task of gaining a sufficient measure of maritime control to enable the expedition to sail with any prospect of success.¹ Had it ever done so it seems as certain as anything can be in war that a British victory comparable to La Hogue or Quiberon Bay would have resulted.

It thus happened that the first two requirements for the shift of British strategy from a continental to a maritime basis—namely the

¹ For a full analysis of German intentions in the summer of 1940 see Ronald Wheatley *Operation Sealion* (Oxford University Press, 1958).

rescue of the British Army and the defeat of the enemy's invasion plans—were successfully met. The result was that the German military machine found itself in the paradoxical state of having been left by its victories with no enemy to fight, what time Britain still stood unsubdued and defiant across twenty miles of salt water. Though it is of course impossible to be sure whether Hitler would in any case have attacked Russia, there is no doubt that the summer of 1940 produced the first climacteric, which not only set the stage for the new British strategy but caused the German armies to march east, leaving an undefeated enemy in their rear. Moreover the start of the campaign in the east opened up boundless horizons for Britain, since not only was the Wehrmacht fully engaged in campaigns of titanic proportions, but the Germans thereby created for themselves the very situation which, ever since the previous struggle, their ablest strategists had sought to avoid—namely a war on two fronts.

Though we had to relearn the hard way many old lessons, such as the economy and effectiveness of convoy compared with hunting for enemies at sea, and also adapt new weapons and techniques to meet ancient requirements, our broad purposes thereafter never altered. They were, firstly, to defeat the enemy's varied assaults on our merchant shipping, thus enabling our people to be fed and our war production to expand; and, secondly, to rebuild our military strength and reinforce our armies and air forces at home and overseas until they were capable of striking offensive blows *in theatres of our own choice*. If many setbacks, some of them unquestionably avoidable, had still to be encountered and many disappointments endured, by the end of 1941, when America entered the war, the road to victory had at least been clearly sign-posted.

Such, in briefest outline, appears to be the chain of cause and effect which led the British Commonwealth, first alone and then hand in hand with its American and other Allies, to seek victory through exploiting maritime power; and we may be thankful that among the weaknesses in the enemy's camp which the progress of the war revealed ever more clearly was his inability to grasp the nature of such a strategy. Moreover even at the present comparatively short distance of time, and in spite of the vast destruction which the war wrought to all that man had laboriously created down the centuries, it seems clear that the new strategy brought the western Allies victory at a far smaller cost in human life than was incurred in the 'carnage incomparable and human squander' of Verdun, the Somme, Ypres and Passchendaele in the 1914-1918 war.

At the beginning of this work the writer suggested that a maritime war would probably pass through three phases, which he called the

Defensive, the Period of Balance, and the Offensive. The initial defensive was, he suggested, almost inevitable to a democratically governed country, because at the outset the initiative would certainly rest with the authoritarian governments of its adversaries. During the defensive phase the cardinal needs were to secure the home base and also the vital overseas territories against invasion, and to hold, if not defeat, the enemy's first onslaught on our shipping. In addition it was essential that, even though our strategy was defensive, no opportunity of assuming the local and tactical offensive should be lost; for failure to seize such chances would leave the initiative wholly in the enemy's hands, and might lead to a decline of morale and of the will to fight in our own forces. In fact the manner in which every offensive opportunity was seized between 1939 and 1942, in the River Plate battle, at Taranto, off Spartivento, Calabria and Matakpan, in the pursuit of the *Bismarck* and in countless convoy actions, is one of the most outstanding features of the recent struggle at sea. But, as so often in earlier wars, we did not always sufficiently distinguish between the possibility, nay desirability, of vigorous offensive action by local commanders during the defensive phase and centrally directed offensive measures which were bound to result in the dissipation of precious resources. It may reasonably be argued that, in the circumstances prevailing at the time, an expedition had to be sent to support Norway in 1940; but the diversity of aims stated by the government led to more landings being made than we could possibly support. It may also be held that by stripping the Army of the Nile, even at a moment when its astonishing successes cried out for vigorous exploitation, and sending its best formations to Greece in 1941, we not only fulfilled a moral obligation to a gallant Ally but contributed to delaying Hitler's onslaught on Russia¹; but in this case it is at least arguable whether by establishing a firm grip on Crete, and later conducting a powerful sea and air offensive from that excellently placed island base we might not have gained equivalent advantages at far less cost. Although therefore opinion regarding the strategic wisdom of the expeditions to Norway and Greece may well continue to differ, it does seem that one result was that they delayed and impeded the transition from the defensive to the strategic offensive. Furthermore the losses suffered during those campaigns deprived us of the centrally placed strategic reserve of maritime strength which was to be so grievously needed when, at the end of 1941, Japan joined our enemies.

Whatever the ultimate conclusion of history may be regarding the

¹ I. S. O. Playfair in *The Mediterranean and Middle East*, Vol. I, pp. 348-349 (H.M.S.O., 1954), argues convincingly that it was the Yugoslav *coup d'état* of 27th March 1941 rather than the despatch of British troops to Greece that delayed by four weeks Hitler's attack on Russia, with serious consequences for the Germans.

decision to send support to Norway and Greece in 1940 and 1941—and in the latter case, although it may have been politically justifiable, in terms of strategy it will surely be judged unsound—we may at least be thankful that the expedition to the Baltic (operation ‘Catherine’) which Mr Churchill so strenuously urged in 1939–1940 was overtaken by events¹; and that other premature offensives, such as the proposed attack on Pantelleria and the Dodecanese in 1940², never took place. In the case of Dakar in September 1940 a considerable expedition did, however, sail; and the assault was easily repulsed. For no result whatsoever considerable resources were then dissipated. Opinions may also vary regarding the expedition to Madagascar in May 1942; but to this historian it seems that as a precautionary step it was justified.³ At the time when the plans were made (in February and March) we could not have foreseen that a great part of the Japanese fleet would be destroyed in the Battle of Midway at almost the exact moment that the assault forces landed. Moreover the Japanese incursions into the Bay of Bengal in the previous April had shown that a lunge at our very vulnerable Middle East convoy routes was by no means out of the question. The fact that no serious threat ever again developed in that direction does not reduce the justification of the steps taken to forestall it.⁴

From the instances of untimely offensive moves cited, and parallel events in earlier maritime wars, it seems likely that pressure will always be exerted to send combined expeditions overseas prematurely, and for insufficiently important purposes. British history is, indeed, replete with examples of such attempts leading to costly failures.⁵ And when the nation is led by a statesman of great vigour, imbued with the offensive spirit and inspired by a vivid historical imagination, the pressure is likely to be even greater. But in terms of strategy they are fraught with peril, since every expedition absorbs greater resources than its protagonists anticipated; and the diversion of resources to them is likely not only to weaken the nation’s maritime power but delay the assembly and training of forces for the combined offensive in a really vital theatre.

Although the years of the strategic defensive from 1939 until the middle of 1942 were by no means free from unwise diversions, and many more were discussed and planned than were actually launched, we did none the less, though at great strain, meet all the chief

¹ See Churchill, Vol. I, pp. 364–365 and 434–435 (Cassell, 1948).

² Operation ‘Workshop’. See Vol. I, p. 304.

³ See Vol. II, pp. 185–192.

⁴ Compare S. E. Morison, *American Contributions to the Strategy of World War II* (Oxford University Press, 1958), pp. 15–16.

⁵ The expedition to La Rochelle in 1627 and that sent against Cadiz in 1702 may be compared to the attempt made against Dakar in 1940.

strategic requirements of that period—with the important exception of the Far East. It was this accomplishment, though its progress and success attracted little public attention, which brought about the gradual shifting of the balance in favour of the maritime nations until, with the launching of the expedition to North Africa in November 1942, we turned to the combined strategic offensive by all arms, whose purpose it was to inflict the final defeat on the enemy's armed forces. In the Pacific theatre the broad strategic pattern was the same; but the newly aroused resolution of the United States and her vast industrial capacity, aided by serious mistakes on the part of the Japanese, shortened the defensive phase to an extent which, in the early days of 1942, could hardly have been anticipated. The defensive phase in that theatre lasted only some nine months, and after the battles of Coral Sea and Midway in May and June 1942 and the successful landing in the Solomon Islands in August of the same year, the balance began to shift, at first slowly, in the Allied favour. By the middle of 1943 the highly imaginative strategy which our American Allies had conceived was being prosecuted with ever-rising vigour and with the clear assurance that it would bring victory.

To return to first principles, the reader will recall that in our first volume certain requirements were postulated as essential, if a war was to be successfully fought on the basis of a maritime strategy.¹ These were described as the Security Element, the Strength Element and the Transport Element; and it may be worth considering briefly how far they were successfully provided between 1939 and 1945, and what the consequences were when any one of them was lacking.

The Security Element was the term used to define the need to defend our bases against all forms of attack, in order that they might play their full part in enabling our maritime forces to carry out their functions. It is probably true to say that in 1939 no British base was adequately defended—certainly not against the various forms of underwater and air attack which modern technical developments had made practicable. The price paid for the failure to make Scapa Flow and Loch Ewe, Malta and Alexandria, Colombo and Singapore reasonably secure has occupied no small space in our story, and need not be recapitulated here; but one very interesting development demands fuller attention. This was the provision of temporary, mobile bases for use by the fleets in forward areas where permanent bases were lacking; and although the existence of a Mobile Naval Base organisation in the Royal Navy in 1939 indicates that the Naval Staff had long been conscious that such a need might arise, it was the Americans who developed the technique of rapidly creating such bases, and fully exploited the benefits so gained. By 1944 a very large

¹ See Vol. I, Chapter I.

proportion of the supply and repair organisations for the Allied fleets in the Pacific was afloat. Though the need for permanent rearward bases, often far distant from the scenes of the fighting, had certainly not been entirely eliminated, the temporary advanced bases were able to meet all demands except those involving major refits or repairs; and it was their rapid construction and efficient organisation which made possible the tremendous increase in the sea-keeping capacity of the fleets. This far-reaching development in the Security Element of maritime power was forced on us by the hard fact that no permanent bases existed within thousands of miles of the waters where the fleets were needed; but it also owed a good deal to the realisation that modern developments—and especially airborne weapons—had greatly increased the vulnerability of permanent bases. A German submarine's penetration into Scapa Flow, the British carrier-borne air attack on the Italian fleet in Taranto, the impotence to which the Luftwaffe at one time reduced Malta, and the devastation caused by Japanese naval aircraft at Pearl Harbour all pointed in the same direction; and although it is hard to see how permanent bases can ever be totally eliminated, it seems certain that the need to make fleets increasingly self-supporting and independent of them will continue and increase. This appears to be the most important extension of the Security Element of maritime power suggested by the events of the recent struggle; but the principle regarding the vital importance of adequately defending whatever bases the fleets may be using—be they temporary or permanent—remains unaltered.

To turn to the Strength Element, it is interesting to recall that the three historians mentioned earlier all recognised, and indeed emphasised, the need to adjust and adapt the methods of waging maritime war to changes in weapons and technique. In fact Mahan upbraided his fellow officers for the manner in which 'the inertia of a conservative class' prevented the necessary changes in tactics following hard upon the heels of the inevitable technical developments.¹ None of the three historians regarded changes in the instruments by which maritime power is sustained and employed in war as other than the natural result of the insatiable human urge to discovery; but they all believed that certain broad principles governed its successful application in any struggle between nations. Thus Corbett in his study of the 1914-1918 war, and even earlier, recognised the tremendous influence which airborne and underwater weapons would have on maritime war; Richmond lived long enough to analyse their impact on the second struggle, and concluded that the form taken by the

¹ See *The Influence of Sea Power on History* (Sampson Low, Marston & Co., 1890), pp. 9-10.

instruments of maritime power was immaterial to the accomplishment of their purposes¹; and if Mahan's analytical powers were available to us today it is difficult to believe that he would draw any different conclusions from those which he deduced with unanswerable logic fifty and more years ago.

By far the greatest new influence on sea warfare in the recent struggle was, of course, the rapid development of airborne weapons; but there had in fact been clear signs that this would be the case long before Germany's rulers were committed to challenging Britain's position in the world for the second time. The enormous potential influence of the aeroplane was indeed recognised by a small band of British naval pioneers during the 1914-1918 war; and it may be that too few of those responsible for British naval policy were then, and for many years later, prepared to admit the revolutionary influence on sea warfare of man's conquest of the air.² Thus Mahan's dictum regarding the time lag between changes of weapons and consequential changes in tactics received new confirmation. None the less, and in spite of the apparent nonchalance with which the Royal Navy allowed itself to be deprived of control over the development and employment of maritime aircraft in 1918³, the vision and enthusiasm of a small but increasing minority among its officers gradually brought about a change in the attitude of those in high places, until full control of the Fleet Air Arm was regained in 1937. But the sands of peace were then running out, and little time remained to make the new arm into the spearhead of the fleet's offensive power, let alone to arrive at a firm and satisfactory understanding with the Royal Air Force regarding the control and operation of shore-based maritime aircraft. It is an ironical fact that the Japanese Navy, whose training in its early years owed so much to British officers, seems to have realised far more clearly than its one-time mentors not only the great potentialities of carrier-borne aircraft but also the vital importance of combined operations in the waging of a maritime war. We will return to the latter subject later.

The fleet with which Britain had provided herself in 1939 was certainly adequate to meet a challenge from Germany alone, and was also capable, in alliance with the French Navy, of dealing with Italy and Germany together. It was never deemed strong enough to withstand the combined power of Germany, Italy and Japan—certainly

¹ Lecture *The Modern Conception of Sea Power* delivered at the Royal Institute of International Affairs on 26th November 1942, from which the heading to Chapter XXVII is taken.

² Admiral of the Fleet Lord Fisher, who returned to the Admiralty as First Sea Lord in October 1914, certainly recognised the potential influence of the aeroplane. For example, in May 1915 he wrote to A. J. Balfour, 'Submarines and aviation govern the future'. See *Fear God and Dread Nought*, ed. A. J. Marder. Vol. III, p. 33 (Cape, 1959).

³ See Vol. I, p. 29.

not without French help; yet that was the situation which, at the crisis of December 1941, we had to face. Although it was mainly the tremendous strains of the first two years of the war, and the heavy losses then suffered by the Royal Navy, which destroyed the possibility of building up in the east a balanced fleet capable of fighting the Japanese Navy on something like equal terms, it seems that other factors, some of which may be deemed avoidable, contributed to the heavy defeats suffered at the hands of the new enemy. But in assessing the causes which contributed to those disasters we should remember that the Naval Staff of the years immediately preceding the outbreak of war laboured under quite extraordinary difficulties.

In the first place it was not until 1937 that, after nearly two decades of very rigorous financial stringency, the purse-strings of the nation were sufficiently loosened to enable a substantial naval construction programme to be started; and, as the younger Pitt observed during the Napoleonic War, 'it is bad economy to tempt attack, and thus by a miserable saving to incur the hazard of a great expense'.¹ Secondly, because the political alignment of some nations which might be involved in a new struggle was still far from clear, the Cabinet was never able to give the service staffs firm directions regarding with what country or countries, apart from Germany and Italy, we were likely to find ourselves at war. The uncertainty surrounding the attitude of Russia and Japan made the preparation of all war plans, and the assessment of the priority to be given to all the many pressing needs of the naval service, tasks in which a great amount of guesswork was involved. If therefore it now seems that certain mistakes were made, and that a greater awareness of earlier experiences enshrined in history might have avoided some of them, we should not only bear in mind the background against which the Naval Staff of those years worked, but should also recognise that, in spite of the magnitude and urgency of the problems to be faced, a very great deal was planned with outstanding skill and foresight.

It is too often forgotten that naval construction is such a long and costly process that it is extremely hard to rectify any deficiencies in the composition of the fleet once war has broken out. Throughout the first months, even years, the Service is almost certain to have to make do with the ships and equipment available at the outset. The American Navy was, however, exceptionally fortunate in this respect. For more than two years its representatives were able to reap the benefits of British experience and to observe at first hand what were the main lessons of the war. Although, for reasons which still seem very hard to

¹ Quoted Richmond, *Statesmen and Seapower*, p. 293 (O.U.P., 1946). This remark closely echoes that of Master Sutcliffe in the sixteenth century that 'nothing is more hurtful to the proceedings of warres than miserable niggardise'. See Hargreaves, *The Narrow Seas*, p. 238 (Sidgwick and Jackson, 1959).

understand, this enormous and unusual advantage did not lead to the Americans being in any proper degree prepared to meet the onslaught by the U-boats on their coastal traffic in the early months of 1942¹, it did undoubtedly enable them to mitigate, or even escape, many of the consequences of their own unpreparedness. But it would be rash to assume that such good fortune will recur in any future struggle.

It now seems plain that between the wars too great a proportion of the available men and money was devoted to manning and maintaining the Royal Navy's battleships, and too little to its aircraft carriers and sea-borne aircraft; and that the balance was tilted too far in favour of the heavy gun and against the weapons which, to the less conservative minds, already seemed capable of carrying out many of its functions more effectively.² Moreover to a powerful school of naval opinion the next war seems to have been visualised as an extension of the last, with big-gun ships manœuvring in close formation and cannonading each other across many miles of sea, as happened in the Battle of Jutland. A backward glance at the exercises carried out by the Royal Navy between the wars shows how far this concept still held sway in British naval circles. This is not, of course, intended to suggest that in 1939 some big-gun ships were not needed. Experience was indeed soon to show that in certain circumstances they were still essential. Furthermore it is certainly the case that, long after the carrier-borne aircraft had displaced the big gun as the chief instrument of maritime power, a new and important rôle for the battleship arose through the need for heavy naval guns to support assaults from the sea. None the less it seems true to say that in 1939 we had not achieved a proper balance between the big-gun ship and the carrier-borne aircraft; nor had we realised sufficiently clearly that it was the latter which possessed the benefit of a prodigious increase in the range to which missiles could be discharged from ships, as well as great potential advantages in achieving surprise. It is, for example, difficult to justify keeping the five slow and unmodernised R-Class battleships in service, even after the limitations imposed by the Washington Treaty of 1922 had expired in 1936: for by that time the carrier-borne aircraft's great future as the main offensive weapon had been recognised—at any rate by the more far-sighted officers. To have scrapped the elderly battleships in return for building two or three more aircraft carriers would surely have brought great benefits. Furthermore the failure to appreciate that carrier aircraft would play a vital rôle in convoy work, enabling the merchantmen to carry

¹ See Vol. II, pp. 91-104.

² See Vol. I, pp. 31, 47-50 and Appendix D regarding the numbers of capital ships and aircraft carriers in service and under construction in 1939.

their own fighter and anti-submarine protection along with them, was one of the more serious errors in our pre-war plans. Then, when war had broken out we sometimes used our few and precious fleet carriers in a very unwise manner, exposing them to quite unjustifiable risks. In some cases this was, perhaps, unavoidable. For example our inability to establish land-based aircraft in Norway in April–May 1940 forced us to use carrier-borne planes for purposes for which they had not been designed; but the employment of fleet carriers on submarine hunting, which led directly to the loss of the *Courageous*¹, must surely be classed as an error. It seems to have arisen through the widely-held but fallacious belief that so-called ‘offensive’ measures against the U-boats could provide an effective alternative to convoy. More will be said on that score shortly.

In 1939 the development of carrier-borne aircraft for the Navy still suffered from the system of divided control which had been in force from 1924 to 1937²; and this complicated and handicapped the rapid expansion which became essential after the outbreak of war. Some of the new types introduced were makeshift adaptations from land planes, which had to be used afloat because aircraft specially designed for carrier work did not exist; others were markedly inferior in performance to those produced for the American and Japanese navies. With British industry strained to the limit to meet firstly the needs for shore-based fighters, and later for heavy bombers, we could not give a high priority to the requirements of the fleet. It thus came to pass that for the greater part of the war the Fleet Air Arm was largely dependent on the United States to meet its needs.³ Coastal Command of the Royal Air Force suffered from similar deficiencies. Because our air strategy was concentrated mainly on the bombing of Germany, the allocation of long-range aircraft to the maritime war lagged sadly. It was not until American types, such as the Catalina, Fortress and Liberator, became available to Coastal Command in numbers that our shore-based aircraft began to exert a decisive influence at sea. Taking account of the impossibility of giving all demands for aircraft equal priority, this was perhaps unavoidable; but in the employment of such aircraft as were available we seem to have been slow to realise that to escort and support our convoys was a far more effective strategy than to send out patrols to seek the enemy. This lesson is, indeed, complementary to the use of surface ships to escort rather than to hunt, already mentioned. It is a striking fact that except for one short period, when the enemy’s error played into the hands of our air patrols, even the Bay of Biscay ‘offensive’, to

¹ See Vol. I, pp. 105–106.

² See Vol. I, p. 29.

³ See Vol. II, Appendix D, regarding the types of aircraft with which the Fleet Air Arm was equipped.

which Coastal Command devoted such a great effort, produced far less effective results than the air escorts of the convoys.¹

In the matter of the control of shore-based aircraft the British system, which was in fact a compromise between the requirements and views of the two services concerned, stood the rigorous test of the Atlantic battle very well. Indeed the sympathetic understanding finally achieved between the Naval and R.A.F. commands concerned, and between the surface escort groups and the aircrews who worked with them, is a remarkable feature of the struggle. But the system was always somewhat complicated, demanding frequent consultations between different authorities; and it may have been this which on more than one occasion caused it to break down when an unforeseen or sudden emergency arose. Thus the lack of any single authority controlling all the ships and aircraft concerned probably contributed a good deal to the escape of the German Brest squadron in February 1942 and to the safe passage of the *Lützow* from north Norway to Germany in September of the following year.² It seems undeniable that, even though shared control worked well under normal conditions, special circumstances demanded a higher degree of unification between the two arms than was achieved during the recent war.

Since the early years of the present century the principal weapons employed in sea warfare could be divided into two broad classes—those fired from a gun or dropped from an aircraft and designed to penetrate inside an enemy ship before exploding, and those fired or laid underwater and designed to rupture the enemy ships' hulls. The fact that underwater damage by torpedo or mine could be extremely serious had certainly been recognised long before 1939; and the torpedo threat had indeed been a big factor in deciding battle tactics during the 1914–1918 war.³ But between the wars we seem none the less to have concentrated excessively on the gun, and at the expense of the under-water weapons. In this connection it is interesting to recall that Britain and Germany both developed magnetic mines during the 1914–1918 war; but whereas the Germans thereafter steadily continued their experiments, we ourselves did not do so. It thus came to pass that, with their magnetic mine, the Germans gained a long start over us in the campaign of minelaying against minesweeping, and it was many months before we overtook them. Similarly the shortage of torpedoes in the Royal Navy soon became acute, and long remained so; and throughout the whole war it was enemy torpedoes and mines which caused by far the greatest pro-

¹ See Part I of this volume, pp. 262–265.

² See Vol. II, pp. 149–158, and Part I of this volume, pp. 69–72, respectively.

³ See *Grand Fleet Battle Orders* of September 1914.



Victory and Aftermath

Victory celebrations in the East Indies Fleet at Trincomalee,
15th August, 1945.

The aftermath. Escort vessels and minesweepers reduced to reserve in
Portsmouth harbour. 'Moored bow and stern they could not even swing
to the tides they had known so well' (see p. 413)





Lieutenant (E) C. T. ...



Mr. Williams, Boatswain, R.N. "Bo"



Quartermaster Lawford, "Piping"



Boy Tolchard, Messenger

The Victors. Officers and men of the Royal Navy, 1939-45.

(By Barnett Freedman, National Maritime Museum)

portion of casualties suffered by Allied warships and merchantmen. Indeed the underwater weapons, whether fired or released by ships, submarines or aircraft, proved the most influential and dangerous of all weapons in the maritime war. In short it seems true to say that, whereas by 1939 the Germans had thoroughly digested the lesson that the torpedo and mine were the best weapons with which to attack Britain, we ourselves—despite the enormous losses we had suffered during the earlier struggle—were far from prepared to meet the danger. It is, moreover, a curious fact that, by its strong preference for the bomb over the torpedo in attacks on shipping, the Royal Air Force committed an error similar to the Navy's excessive emphasis on the gun. Furthermore the potential accuracy of high-level air attack was assessed far too optimistically by the Royal Air Force before the war¹; and that error, combined with the almost total lack of dive-bombers in the British Services, long prevented our strike aircraft from accomplishing results comparable to those achieved by our enemies.²

Parallel with the rapid development of airborne weapons in the 1930s the Royal Navy was devoting considerable attention to the problem of anti-aircraft defence; but just as the accuracy of high-level bombing was much over-estimated by the Air Staff, so was the effectiveness of long-range anti-aircraft fire assessed far too optimistically by the Navy. This latter error led to the vital importance of defending fleets and convoys with shore-based and carrier-borne fighters being insufficiently recognised. Moreover, although in the instrumental control of surface guns the Royal Navy's equipment was unsurpassed, we never succeeded in producing anti-aircraft fire control systems comparable to those fitted in German and American ships. The need for warships to be given powerful gun defences against low-flying aircraft was certainly recognised well before the war; but the weapons fitted in our larger ships were soon shown to be inferior to those in other navies, and we almost totally lacked the light weapons, large numbers of which were quickly shown to be essential. It is a fact that the most effective close range weapons available in 1939 (the Swedish Bofors gun and the Swiss Oerlikon) were greatly superior to any British weapons, and remained so throughout the war.

If in certain types of weapon and equipment other countries held

¹ See Webster and Frankland, *The Strategic Air Offensive* (in the press), for a full discussion of this matter.

² The Fleet Air Arm actually dropped high-level in favour of dive-bombing before the war, and had the Skua fighter/dive-bomber designed for the latter function; but only a handful of them were in service in 1939. Though German experience with the Ju.87 demonstrated the vulnerability of dive-bombers to modern fighters and concentrated close-range A-A gunfire very early in the war, the American Navy (e.g. at Coral Sea, Midway and in many other Pacific battles) quickly proved that dive-bombers were still extremely potent weapons—provided that adequate fighter protection was given to them.

a lead over Britain, in the development and application of others, of which radar is perhaps the most outstanding example, we led the world until the United States' vast capacity for research and production was mobilised for war purposes. The benefits derived from the combined work of British and American scientists and technicians have already received due emphasis in these volumes, and we need not enlarge upon them here.

In the smaller units of the British fleet—the cruisers, destroyers, minesweepers and submarines—the balance was, perhaps, better in 1939 than in the case of the heavy ships. But the restrictions on naval building imposed by international treaties, and the parsimony of the years between the wars, had left us with a high proportion of over-age and obsolescent ships, and this produced serious difficulties in keeping them serviceable. Moreover the shortage of cruisers forced us to resort to the employment of converted liners as substitutes; and they quickly proved unsatisfactory. As in all previous wars we very soon experienced a critical shortage of all types of escort vessel; and the hastily built corvettes were, because of their slow speed, but poor substitutes for the specially designed anti-submarine escorts which we had failed to provide in anything like sufficient numbers. Nor, once war had broken out, could that deficiency be quickly rectified. It is an uncomfortable fact that throughout 1942 the Germans were completing several new submarines for every anti-submarine vessel that we were putting into the water; and it was the end of 1943 before, largely as a result of American production, our resources of escorts became adequate. Even when full account is taken of the international treaties regarding the use of submarines against merchant shipping, in which we misplaced so much faith, and of the national financial stringency of the 1930s, it is difficult to avoid the conclusion that we planned our fleet with too little emphasis on the escort-of-convoy function. On the other hand the fleet destroyer flotillas of 1939, though few in number, were composed of excellent ships—well-designed and splendidly manned. It is perhaps no exaggeration—and it is certainly not intended to cast any reflection on the crews of other classes of warship—to say that they were the cream of the Royal Navy. Yet at the beginning we seem sometimes to have employed those invaluable ships without a clear realisation of the priceless asset which they constituted. They were relentlessly overdriven—partly in pursuit of the premature 'offensive' purposes already criticised; and they suffered enormous losses, especially when working close inshore in support of the Army. It was the heavy toll taken off Norway, the Low Countries, Dunkirk, Greece and Crete which deprived us of the ships which were so desperately needed to counter and defeat the enemy's onslaught on our shipping. Throughout the whole Atlantic Battle the critical shortages were always of

destroyers and long-range aircraft; and the shortage of the former might, it now seems, have been mitigated had we been less prodigal of our destroyer strength during the early months.¹

To turn to the capacity of British warships to withstand damage in action, it happened several times that the sinking of a ship after receiving comparatively slight injuries caused the Admiralty to investigate whether there were grounds for believing that enemy ships were more stoutly constructed than our own. This matter had, indeed, raised its head in the 1914-1918 war, when several of our ships blew up after receiving shell hits; and such events as the loss of the *Ark Royal* to one torpedo hit a few months after the *Bismarck* had withstood tremendous punishment before sinking caused it to be raised again.² In fact the effects of action damage may be influenced by so many different causes that it is very hard to state firm conclusions. For example any serious failure of the damage control organisation may imperil a ship to a far greater degree than the original damage justified. Moreover old ships, of which the Royal Navy had a plethora in 1939, must always be less capable of withstanding damage than new ones, such as were all the larger ships of the German Navy. Another factor is that in British ships a high degree of habitability has commonly been aimed at, because they are required to remain at sea for extended periods; and this will always react unfavourably on internal water-tightness. Though it is certainly the case that some British ships sank easily and some enemy ships proved very difficult to sink, it is also true that others of ours survived widespread damage. Thus it may be unjustifiable, as indeed the Admiralty found during the war, to draw any firm conclusions regarding the superiority of the one or the other country's designs. What seems undeniable is that before the war we had devoted too little attention to the internal organisation of damage control, and in particular to dealing with the risk of serious outbreaks of fire following on bomb hits. Several valuable ships were lost after catching fire, and it was a long time before the fleet was stripped of all inflammable material and equipped with efficient fire fighting apparatus. Training in damage control was also shown to be a vital part of fighting efficiency, and so of maintaining the strength of the fleet.

The last of the three principal components of maritime power we called the Transport Element, and it is to the part that it played in the recent struggle that we must now turn. Of all the conclusions which may be drawn none is less disputable than the fact that throughout the whole of the first four years every strategic purpose

¹ See Appendix T for a full statement of the Royal Navy's losses. In 1940 and 1941 the losses of destroyers totalled 37 and 23 respectively, and a great many more suffered serious damage.

² See Vol. I, pp. 533 and 401-418 respectively.

conceived by the Allies, and every operation which they planned and executed was conditioned and controlled—and too often restricted—by the difficulty of providing the necessary shipping; and even after the production of the American shipyards had overtaken our losses of merchantmen, it was largely the provision of the specialised craft needed for combined operations which decided the scope and scale of our offensive strategy. No other lesson is as clear as the importance to a maritime power of a large and modern Merchant Navy; and it must have behind it adequate industrial capacity and skilled labour to build new ships, and to repair those that have suffered damage. Nor is the existence of reserves of trained seamen to man the merchantmen any less important than the provision of the ships themselves; for in all maritime wars casualties among merchant seamen have been extremely heavy. In peace time, when the economics of seaborne trade are the deciding influence on the design and production of merchant ships, this is too often forgotten; but as soon as a war breaks out the old truth once again becomes forcibly clear. This makes it seem all the more surprising that, even though it was well known that only the belated introduction of convoy in 1917 had saved us from imminent disaster, there should have been prolonged discussion and much hesitation regarding the adoption of the same strategy when war was plainly approaching once again in 1937–1938; and even when the decision to convoy was finally taken in March 1938 it was made conditional upon the enemy waging unrestricted submarine warfare. In part these vacillations arose from the claim that airborne weapons would be more lethal to convoys than to single ships—a claim which was rapidly proved erroneous; but it is at least doubtful whether tactical and technical developments should have been allowed to dictate on a matter of historic and well-proven principle. If the pre-war Air Staff reasoned wrongly on the protection of shipping against air attacks, the Naval Staff was very soon shown to have been far too optimistic in its belief that such attacks could be countered by weapons mounted in the ships themselves. These misjudgments undoubtedly delayed the creation of a fully integrated joint organisation to deal with the enemy's offensive, and in particular with his bombing attacks in the narrow seas. The pre-war decision to adopt convoy was, moreover, very soon weakened by pressure to employ a proportion of our slender resources on hunting for the enemy, instead of waiting for him in the vicinity of the targets which he sought to attack; and it has already been told how this policy was both unsuccessful and costly.¹ Though the pressure to adopt the fallacious 'offensive' measures was partly political, it was unquestionably also favoured by some naval authori-

¹ See Vol. I, pp. 10, 134–135, 357, 481.

ties; and the Naval Staff of those days does not seem to have made a determined endeavour to expose the wasteful ineffectiveness of what was being done.

There is another aspect of the defence of merchant shipping whose virtually complete neglect in peace time now seems very hard to understand—namely the failure to give our aircrews, both naval and R.A.F., any training in the technique and tactics of attacking submarines. Had a carefully organised system of training existed during the years of peace, the uselessness of the anti-submarine armaments provided for our aircraft would surely have been found out long before the war¹, the tactics of the approach to and attack on a submarine would have been studied and developed, and our aircrews would have possessed some knowledge of the habits of their underwater adversaries. The 1939 Sunderland flying boats, the Fleet Air Arm's strike aircraft such as the Swordfish, and the Hudson land planes of the early days could all have been effective U-boat killers against the type of targets they often encountered in 1939 and 1940—had their crews been trained for the purpose, and had they possessed an effective weapon. The plainly vital importance to Britain of dealing quickly and effectively with the underwater menace to her merchant shipping, regarding which we had gained such costly experience in the 1914–1918 war, makes it seem astonishing that practically no attention was given to these matters until the same lesson was thrust upon us once more.

Before leaving the defence of merchant shipping one other lesson demands comment. With such a length and continuity of experience behind us it is surely surprising that no standardised instructions for the defence of mercantile convoys should have existed in 1939. While there were voluminous orders concerned with the screening and protection of a battle fleet, it was left to senior officers of escort groups to work out for themselves the best method of doing the same for mercantile convoys. Lacking any common doctrine, or any authoritative guidance on the subject, each group commander set about producing his own special orders on the subject. This might not have mattered very much had the groups always remained the same, and always worked by themselves; but when ships transferred from one group to another, or two groups joined together during a convoy operation, the need for standardised instructions at once became apparent—for it was no uncommon occurrence for different groups to use different signals to signify the same intention. Furthermore, there was, at the beginning, no means of pooling recently gained knowledge for the common good, as is shown by the fact that

¹ See Vol. I, pp. 135–136, regarding the ineffectiveness of the pre-war anti-submarine bomb, and the slowness of the development of the aircraft depth charge.

as late as 1941 some escort groups were using screening diagrams and procedures which certainly did not conform to the most up-to-date experience. Not until the middle of that year was the first attempt made to standardise convoy tactics with the issue of 'Western Approaches Convoy Instructions'; and it was 1944 before they were replaced by the wholly authoritative 'Admiralty Convoy Instructions to Escorts'. It would certainly seem that one of the most important aspects of peace time naval training is to exercise escort vessels in standard procedures, and to ensure that a common doctrine exists throughout the service.

In one other important aspect of the Transport Element of maritime power our pre-war planning seems to have taken remarkably little account of historical experience and tradition. In 1939 we possessed hardly any specialised craft designed for landing soldiers on a hostile coast; and the creation of a body of officers and men properly trained in the technique of such operations was only in its infancy. It seems probable that, had the Japanese not revealed the extent to which they had developed the science and practice of combined operations during their war against China in the 1930s, we should have been yet more backward in 1939. When one takes account of the frequency with which, in earlier wars, the Royal Navy has been required to launch and support such expeditions, the neglect is the more surprising. Moreover in the Royal Marines we possessed a corps with a centuries-old tradition for amphibious warfare; yet in 1939 we were employing them almost exclusively to man a proportion of the armaments of our big ships. Many factors appear to have contributed to this state of affairs. Thus the failure at Gallipoli, in spite of the successful seaborne landings, had made a profound impression in British military circles—until it came to be re-studied and re-assessed in the light of more complete knowledge than we possessed in the 1920s; and the more extreme protagonists of air power had declared that to land an army on a hostile coast would be even more hazardous than in the 1914-1918 war. The re-orientation of British thought towards exploiting our maritime power by sending military expeditions overseas undoubtedly owed a great deal to the Combined Operations organisation created by Mr Churchill; but the long neglect of that vital aspect of the Transport Element may well continue to puzzle posterity. None the less, and in spite of the self-imposed handicaps from which we suffered, by the middle of 1942 we had made up the leeway; and the creation of the inter-service command organisation needed to plan and execute such ventures, and the full integration of all the arms of all services needed to carry them out was, perhaps, the outstanding achievement of the recent struggle. Of all the lessons of history none was more strikingly reaffirmed than the value of amphibious power, and its far-spread

influence as a factor in both major and minor strategy. Whether to gain new bases for our own use, or to deprive the enemy of his bases (as in many Pacific operations), or to expel an enemy from a particular territory (as in the North African landings), or to cause the enemy to divert a proportion of his strength (as in the many coastal raids carried out as part of our deceptive strategy), or to accomplish a combination of such purposes, amphibious power was shown to have lost none of its benefits. Rather indeed have modern techniques and equipment increased them; and we and our American Allies both finally exploited our capacity to strike overseas where and when we wished to a far greater extent than in any previous war.

It remains to discuss briefly the question of the control of maritime forces in war—a subject made the more interesting by the differences between British and American practice. During the 1914–1918 war developments in the intelligence field led to the adoption of centralised control by the Admiralty, which has since remained an operational as well as an administrative headquarters, with over-riding powers regarding the day-to-day employment of all maritime forces. On the other hand the American Navy Department, though latterly equipped to receive, digest and disseminate intelligence of identical form to that collected in the Admiralty, has neither possessed, nor apparently desired to possess, comparable operational authority. In the last war the American staff allocated the forces to each theatre in accordance with the decisions of the government, and gave broad directions regarding the strategic purposes towards which they were to be employed; but control of the fleets and squadrons was left entirely in the hands of the Commanders-in-Chief, most of whom had their headquarters ashore. This system seems to have been based, possibly unconsciously, on the principles systematised by Moltke and other military thinkers who had studied the Napoleonic war very thoroughly. In the light of the experience of both world wars of this century, and the examples they provide of the unhappy consequences of interventions by a centralised shore organisation¹, there certainly seem to be strong arguments in favour of the American system. Furthermore in modern conditions, with naval movements ranging over vast distances, and forces changing their positions at speeds which a few decades ago would have seemed inconceivable, decentralisation of control would appear to have enhanced merits. Nor can the present writer see any reason why a centralised organisation for

¹ For instance the orders and instructions sent from London with regard to the need to safeguard the French troopship traffic in the western Mediterranean undoubtedly contributed to the escape of the *Goeben* and *Breslau* to Turkey just after the outbreak of the 1914–1918 war. (See Corbett, *Naval Operations*, Vol. I, pp. 61–71.) In the second war the best example is the consequence of the order signalled to convoy PQ.17 to scatter in July 1942. (See Vol. II of this series, pp. 135–146.)

the collection and dissemination of intelligence should be incompatible with decentralised operational control.

Second in importance only to the soundness of the system under which control of maritime forces is exercised may be placed the principles on which senior officers carry out their function of tactical command. In the Royal Navy for the greater part of the last four centuries this has been governed by 'Fighting Instructions'; but it is noteworthy that during two very important periods, when the genius of Drake and of Nelson was available to Britain, they were interpreted very liberally, or even ignored by our fleet commanders. The first known Fighting Instructions were issued in 1545; but it was James, Duke of York who, in 1673, first issued a full code intended to cover the tactics of all likely circumstances of battle at sea.¹ Since that day there have been many instructions designed for the same purpose, and those under which the recent war was fought were signed by Admirals Sir Dudley Pound and Sir Charles Forbes, then Commanders-in-Chief, Mediterranean and Home Fleets respectively, in March 1939. In modern times the instructions have consisted more of a summary of recommended tactical principles than of mandatory orders; and the 1939 edition's preamble contained a qualifying remark to that effect. None the less a certain rigidity of tactical outlook is apparent, notably in the sections dealing with the handling of a battle fleet in contact with the enemy. 'Prior to the deployment', the 1939 Instructions stated, 'the Admiral will control the movements of the battle fleet as a whole. He will dispose the guides of divisions on a line of bearing at right angles to the bearing of the enemy battle fleet. . . .' The reader will note the mandatory wording, and will probably remark that execution of such tactics must depend on the enemy conforming to our own intentions—an unlikely eventuality in war. The existence of such instructions at the outbreak of the last war suggests that we may have forgotten past failures when a strict line of battle was enforced, and that Drake at Gravelines in 1588 and Nelson at Trafalgar both planned their attacks on quite different principles. As Sir Julian Corbett has remarked, 'In the zenith of their careers Nelson and Drake came very near joining hands', and the former's famous Trafalgar Memorandum contained 'a clear note of discrimination against the long-established fallacy of the old order of battle in single line'.² Furthermore, and in spite of the wording of the preamble to the 1939 instructions, the mere existence of such a code with high authority behind it may act as a drag on the initiative of commanders and tend to force their actions into a stereotyped mould. There is also at least a possibility that,

¹ See *Fighting Instructions 1530-1816*, ed. Julian S. Corbett (Navy Records Society, 1905),

² *Op. cit.*, p. 283.

when things have gone wrong, the instructions might be quoted against a commander who has disregarded them. Not the least interesting result of study of the tactics used during the many sea fights of the last war is that it reveals how often our commanders acted in disregard, and even in flagrant contradiction, of the instructions. Notable examples were Admiral Harwood's handling of his cruisers at the River Plate battle, and Admiral Tovey's control of the battle squadron during the final action with the *Bismarck*¹; but the same can be said of many lesser actions in which senior officers, having made their broad intentions clear, left the detailed execution to the initiative of their juniors. In those instances the senior officers appear to have relied mainly on the common training undergone by their individual ships, flotillas and squadrons, on the traditions which lay behind that training, and on the mutual confidence which existed between them and their subordinate commanders. The degree to which the senior officers' intentions were understood is clearly revealed by the paucity and brevity of the signals sent while such actions were in progress. On the other hand there were occasions when a senior officer maintained a far tighter control over his ships, manœuvring them in close formation and denying any appreciable freedom to the juniors. Such appears to have been Admiral Holland's system in the first action with the *Bismarck*²; and similar tendencies may be remarked in several phases of both the cruiser and main fleet actions with the *Scharnhorst*.³ Under this system a great deal of signalling was necessary and, as is always likely to happen when some ships are not in close touch with the Admiral, not only was initiative cramped but serious misunderstandings sometimes arose.

To particularise further on the dangers of more detailed instructions, the 1939 orders laid down that if a convoy was attacked by a superior force 'the ships in convoy should be ordered to scatter and the escorts to concentrate'. Very early in the war it became apparent that, although occasions might arise when a convoy should be ordered to scatter, in most circumstances it was far better to keep it together; and that the decision should in any case be left to the man on the spot. The 1939 instruction was accordingly cancelled in 1941, and a far less rigid principle established. The revised instruction stated that 'the action of the escort must depend upon circumstances . . .', and then outlined what they might be, including 'that the safety of the convoy may be furthered by ordering it to scatter'. Such a principle, if it was scarcely necessary to state it in print, may be regarded as quite unexceptionable. In fact the only really

¹ See Vol. I, pp. 118-121 and 410-417 respectively.

² See Vol. I, pp. 398-406.

³ See Part I of this volume, pp. 80-89.

necessary and fundamental instruction to escort commanders was stated in the same order under 'General Remarks'. 'The safe and timely arrival of the convoy at its destination is the primary object, and nothing relieves the escort commander of his responsibility in this respect'; and that sentence epitomises the conduct of innumerable actions fought in defence of convoys during the recent war.¹ Whether the issue of a Fighting Instruction was necessary in order to establish such a principle is another matter. Study of all the actions fought by the Royal Navy during the war suggests therefore that, in a service where the officers are masters of their profession and are imbued with traditions of the highest value, and where complete confidence exists between them, a code such as the Fighting Instructions may become dangerous if it goes beyond a statement of broad principles and the establishment of a common doctrine.

Such appear to be the main historical lessons to be drawn from the maritime war of 1939-1945. But before the final victory was gained the use by the Allies of weapons of mass destruction posed the question whether all previous concepts of war, and all the lessons which may be deduced from history, had been rendered obsolete. Nor have more recent developments made it any easier to answer such a question. In the first place it has become all too plain that the full impact of such weapons could destroy civilisation as we have understood it; and (although the possibility cannot be ruled out) it appears optimistic to hope that scientific and technical developments will discover means to intercept and destroy long range nuclear missiles before they reach their targets, and so enable the defence to catch up in the age-old race with developments in offensive weapons. None the less the passage of the uneasy post-war years has increasingly shown that to base strategy chiefly on what has been called 'massive deterrence' may be an illusion—if only because it is surely inconceivable that a democratically governed country should in the future consent to the initial use of such weapons. Thus the addition of a British 'deterrent' to that already possessed by our principal Ally may be merely adding, and at great cost, to the form of power in which the western nations are already best provided—what time our weakness in the more flexible weapons needed to support a vigorous national policy has become as plain as its consequences have proved regrettable. Nor does the attempted distinction between tactical and strategic nuclear weapons appear any more attractive than entire reliance on 'massive deterrence'; for recent history is replete with examples of the futility of such theoretical conventions. But however greatly the views of individuals, and of governments, regarding the

¹ See for example the defence of QP.11 (Vol. II, pp. 128-129) and of JW.51B (Vol. II, pp. 291-298).

relative merits of 'deterrent' and 'conventional' weapons may differ, it is surely becoming ever plainer that the abandonment of the sources from which this country has for so many centuries drawn its strength would certainly be premature, and possibly fatal. As long as by far the greatest proportion of the fuel and raw materials needed by modern industry is carried by sea, and the passenger traffic of the world passes mainly over the same element, it is surely inconceivable that control of the sea should cease to be a cardinal requirement for a nation whose existence depends on ship-borne cargoes being brought to and unloaded in its seaports in safety. If that be accepted, then the need to provide against a renewal of the challenge which has so often arisen in the past, and has twice endangered our survival during the present century, remains unaltered. The instruments which can secure us against such a challenge have, during a few decades, changed out of all recognition; and they will doubtless change yet further. But while sea transport continues to provide the life blood of a maritime nation's body the security of the means of transport can only be neglected at the nation's peril.

EPILOGUE

'Facts are the mere dross of history. It is from the abstract truth which inter-penetrates them, and lies latent among them like gold in the ore, that the mass derives its value'.

Lord Macaulay *Critical and Historical Essays*.

AND so, not long after the last U-boat had raised its evil, dripping hull to the surface and hoisted the black flag of surrender, and the last Japanese warship had been pounded into unrecognisable disintegration, quiet descended once more upon the seas and oceans. For nearly six years they had been torn by plunging shells and bombs, sundered by rending mines and charges in their depths, and furrowed by the tearing tracks of deadly torpedoes. The sea had mercifully engulfed the wrecks of hundreds of shattered and burning ships; it had covered and concealed the last agonies of thousands upon thousands of seamen of many races and nations; and, in the end, it had provided the road on which the Allied armies had been carried to their final victories.

Now the mines were swept and the channel marks replaced, the lighthouses blinked again into the darkness to guide the home-bound ship; wireless signals and radar beams flashed to the assistance of seamen of all nations; and they travelled through the days and nights of their passages without the anxious uncertainty, so long experienced as to have become instinctive, whether there would be another sunrise for them, or another dusk.

What of the merchant ships themselves? They—liners and coasters, tankers and dry cargo ships, tugs and fishing vessels—were soon in dockyard berths gladly stripping off their nondescript wartime grey, and decking themselves out again in the proud colours of their companies. House flags, forbidden emblems for so long, were re-hoisted, and distinctive funnel markings, familiar only to the older hands, began to reappear. Deadlights over the portholes were hooked back or permanently unshipped, black-out screens to the bridge and engine-room ladders were torn down and thankfully burnt. The liners cleared themselves of the tiered steel bunks of their troopship days and restored their luxurious cabin and saloon furnishings; the fishing craft got rid of their minesweeping tackle, and replaced it with the more welcome trawls and drift nets; guns and ammunition were landed wherever and whenever they could be got rid of, and

the encircling girdles of the degaussing cables quickly followed. Before many months had passed the ships were all once more ploughing the seas 'on their lawful occasions', navigation lights now burning brightly, portholes blazing and music often sounding across the water. Their wireless sets are no longer clamped down against all tell-tale transmissions, and listening only for the remote voice of warning or the sudden call of another ship's distress; but instead freely send and receive weather signals, cargo instructions, or merely the interchanged greetings of happy mortals; the quartermaster steers easily by the light of a full bright binnacle, after so many months and years of eye strain over a dimmed compass card; and the look-out, though still at his post, no longer watches for enemies lying in ambush. Down in the engine and boiler rooms the great machines throb and hum, while the engineers go about their work, no longer conscious that the fifty foot vertical steel ladder above them is their only means of escape when the water rushes in; and the watches change with the knowledge that during their eight hours off duty there will be no sudden calls to man the guns or to rescue another ship's survivors.

At first it all seemed strange, and men even looked to the habitual stowages for their lifebelts when they awoke; but soon older customs reasserted themselves and more recent urgencies were forgotten. Most of the ships proudly preserved some token of their wartime service by way of battle honours. Passenger liners left untouched a small section of the teak guardrails on which soldiers had carved their names, their home towns, or a message to a distant sweetheart. On the main stairway of a cross-Channel steamer one may see a lettered plaque baldly stating 'Dunkirk 1940; Normandy 1944'; while a great liner may unemotionally record that she was at the fall of Singapore, the seizure of Madagascar and the landings at Algiers; that she sailed in so many WS convoys, and in all carried so many tens of thousands of soldiers to such and such distant theatres of war. But probably few of the passengers even notice those modest emblems, and fewer still realise anything of the romance and endurance which lie behind the simple statements. When the ships themselves disappear so will the plaques, and then their stories will live only in old mens' memories—and in books.

And the warships? A few, and the newer ones, were soon beginning to recommission with Royal Navy crews in place of the wartime mixture of long-service men, reservists and 'hostilities only' ratings; and before long their clean White Ensigns, burnished brass-work and white-scrubbed ladders were to be seen once more on their accustomed foreign stations. Some were given or lent to the Commonwealth countries, who realised that now they must bear an adult's share of the burden so long borne by their exhausted mother country;

others were transferred to Allied nations whose navies had almost ceased to exist during the years of enemy occupation; yet others were very gradually taken in hand in British yards for conversion and modernisation; and a few were sold to small nations on the look out for armament bargains in the great demobilisation reduction sales. But many, very many were considered too old or too worn out for further service. For them there could only be the undeserved indignity of the ship-breakers' yards—a process made all the more welcome to a harassed and empty Treasury by the prevailing high price of scrap metals. Truly we are an unsentimental, commercially-minded race. Not one of those thousands of ships which kept the life-line open has been preserved to posterity's wonder and instruction, and to the education of the youth of Britain.

Yet by no means all found comparatively quick and merciful oblivion in the breakers' yards. A watchful and experienced Admiralty knew that those that were not too worn-out or too old might yet be needed again, in a sudden emergency which gave no time to build. And so, before many months had passed the creeks and estuaries of Britain's rivers began to receive groups of salt-rimed, rust-stained little ships—corvettes and destroyers, sloops, mine-sweepers and frigates. Their fragile and valuable equipment removed or protected by sealed 'cocoon', funnel covers laced on, and gun tampions driven hard home. Moored bow and stern they could not even swing to the tides they had known so well, but as the ripples ebbed and flowed could only gently nudge each other, and pass through the group the mumbling mutters of their memories. This one, the leader, had carried a famous Escort Group Commander, and with him on the bridge had fought through convoy after convoy; her depth charge racks and throwers had loosed death on many a lurking U-boat, detected by the relentless probing of the asdic in her bottom; her sisters had screened the battleships in the chase of the *Bismarck*, the sinking of the *Scharnhorst*, and at Matapan; they had returned from Dunkirk's beaches and Grecian harbours loaded down with exhausted soldiers; they had escorted the troopships and covered the landing craft in many combined operations. That one, a mine-sweeper, had swept the great ships of the main fleet in and out of harbour countless times; the sloop next door had run the straggling east coast convoys up and down the narrow channels from Thames to Forth for six long years, protecting them all the time from mines, bombs and torpedoes. The flat-bottomed craft across the bay had seen the first landings in Africa, then Sicilian beaches and Salerno's struggle; and finally the great Normandy invasion. That group of motor launches was for sale and will soon be tied up as houseboats in rivers, far upstream from the harbours they had patrolled and defended. Few passers-by or seaside holiday-makers who saw the

ships could guess their memories. To them they were only a bunch of useless encumbrances on the tideway.

But what of the warship crews who had manned and fought them? These can still be found or identified, though the seeker has got to know the touch and the look of what he seeks, or he will seek in vain. Ask the liner quartermaster, as he spins the ship's wheel, in which of them he served; walk aft and watch the A.B. setting out the passengers' chairs. The way he wears his cap betrays him, and in the little 'caboosh' where he keeps the tools of his new trade there are some tell-tale tokens of a former one. The railway porter who seized a civilian's suitcase, took one glance at its owner and said 'We served together in *Ramillies*'; the young veterinary surgeon who tied a cow's halter with a bowline, and so marked himself for the Volunteer Reservist he had been; the lighthouse keeper, polishing his powerful lenses; the grey-haired pensioner tending the flowers of his village garden near the sea, the stocky figure sauntering along a seaport street in a rather too well-worn blue jacket; the Coastguard, telescope in hand; and often the small shop or innkeeper too. All are identifiable—if you know the type; and they are the men who knew intimately the rusting hulks in the river creeks, and who served those relentless grey mistresses, grumbling as lovers do, yet always returning to them. They are the men whose loyalty, endurance and patience did most to bring the cargo ships home and take the troopships out; whose ribald humour could never be suppressed by danger or discomfort or the worst that fate, the weather or the enemy could do to them. Now they are scattered far and wide; but they have not forgotten. Occasionally they still gather for an evening's talk in White Ensign clubs, or visit ships in Navy Week, to see what sort of a job the youngsters are making of it. One who had served for nearly forty years recently said he 'would go back on one meal a day'. Another, who had been Chief Gunner's Mate of the famous *Warspite*, watched the knackers tearing at her hulk on the rock-bound Cornish coast, and told his old Commander what he felt. Others, from distant Dominions as well as the near-by fields and valleys of England, like still to keep in touch with 'old ships'. There is an antipodean ship's company which has its own club, and on each anniversary of an action in which their ship was damaged remembers their English one-time Captain. The sense of comradeship, hardened in the furnace of war, has not left them. But they are a tiny minority, and have lived on into an age when numbers and votes, pressure-groups and self-seekers, sensation and scandal drown the small voice of those who served selflessly and faithfully. True one does not see in the streets the mutilated seamen whose condition aroused an earlier generation's shocked compassion and led to the foundation of Greenwich Hospital. A more highly developed social conscience



*Some types of the British
Maritime Services, 1939-45*
(1) R.N.V.R. Submarine
Captain.

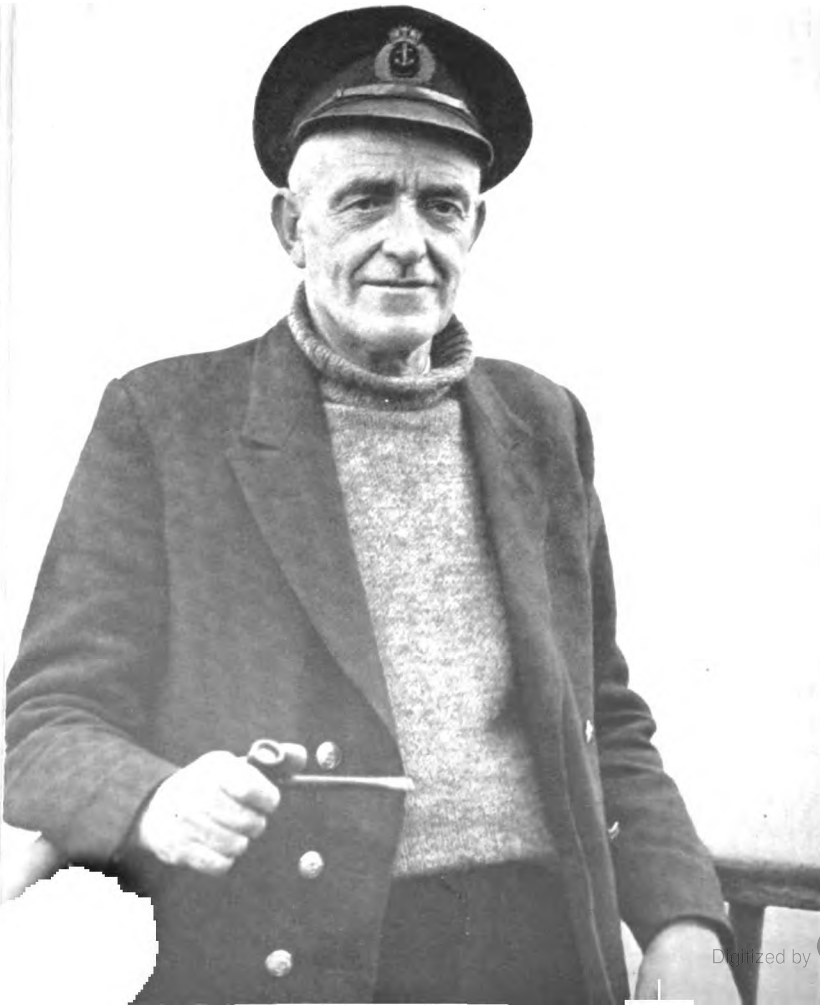


Fleet Air Arm Pilot and
Observer.

(Photographs Admiralty)



*Some types of the British
Maritime Services, 1939-45
(II) Landing Craft
Coxswains.*



Tug Skipper.

(Photographs Admiralty)

now provides pensions and medical care for the maimed. Yet it may be that those who fought on, above and beneath the sea, yet feel arise in their minds the old questioning doubts which have so long troubled men of understanding in maritime affairs. Will the new generation of their countrymen be ready to pay the certain price of true security for Britain?

On the 1st of March 1942, when our maritime condition was at its nadir, a scholar and sailor of outstanding ability in his generation, who had spent his life in studying and teaching the purpose and meaning of sea power to Britain, wrote these words of doubt, even agony of mind, on the typescript of an unpublished book:—

‘Now everything is in the melting pot, and whether after this war there will again be a Navy, or whether the country will interest itself and take steps to ensure that its people are made aware of the importance of sea power, and taught, not only by our terrible experience of tampering with the Navy in those fatal years since 1918, but also by the long experience of the past, I cannot tell. I greatly fear that what has happened before will repeat itself . . .’¹ He then echoed Edmund Burke’s earlier warning that ‘of all the public services, that of the Navy is the one in which tampering may be of the greatest danger, which can be worst supplied in an emergency, and of which any failure draws after it the largest and heaviest train of consequences’. Just after the end of the First World War the man who, two decades later, was to do most to save Britain from the consequences of her own folly said: ‘Nothing, nothing in the world, nothing that you may think of, or dream of, or anyone else may tell you; no arguments however seductive, must lead you to abandon that naval supremacy on which the life of our country depends’.²

Again and again in Britain’s history have warnings such as these been given; and as often have they been ignored. Have the policies and actions of the years since 1945 been such as to give those who fought the last war at sea confidence that, should another need arise, there will be enough and modern enough ships, aircraft, and weapons, and trained and devoted men, to defeat a renewed challenge at sea? Or must the same inadequacies again be redeemed at the same price in lives? There lies the first doubt which assails the pensioners of the last war. The second is as great, or even greater. Though failure to build, to equip and to maintain forces fit for their responsibilities would be serious enough in all conscience, there could yet be committed a crime whose consequences would far surpass anything that would stem from that omission. Where ships and weapons have been inadequate or obsolete, British seamen have

¹ Note by Admiral Sir Herbert Richmond, Master of Downing College, Cambridge, written on typescript of *The Navy as an Instrument of Policy 1588 to 1727*.

² Right Hon. W. S. Churchill. From a speech, 26th November 1918.

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again and again shown that tradition and training can hold the line till better weapons and more ships are forthcoming; and the first two years of the recent war at sea once more proved that to be abundantly true. If a people or its government, albeit unwittingly (for neither can really understand what it has not experienced), should by neglect, or by misplaced enthusiasm for change for change's sake, strike at the roots of such traditions or make impossible the necessary training, then it is indeed likely that the deficiencies in material would prove fatal. It is on those two questions, and particularly the second, that the men whose story is recorded in these volumes would seek assurances for the future; and it is to those who have read the story here recorded that they look to provide those assurances.

'And now the old ships and their men are gone; the new ships and the new men, many of them bearing the old, auspicious names, have taken up their watch on the stern and impartial sea, which offers no opportunities but to those who know how to grasp them with a ready hand and undaunted heart.'

Joseph Conrad, *The Mirror of the Sea*
(Dent, Collected Edition, p. 192).

Appendices

APPENDIX L

The Board of Admiralty

June 1944–August 1945

	<i>Date of appointment</i>
First Lord: Rt. Hon. Albert V. Alexander	12.5.40
Rt. Hon. Brendan Bracken	29.5.45
Rt. Hon. Albert V. Alexander	4.8.45
First Sea Lord and Chief of Naval Staff; Admiral of the Fleet Sir Andrew B. Cunningham	15.10.43
Deputy First Sea Lord: Admiral Sir Charles E. Kennedy-Purvis	29.7.42
Second Sea Lord and Chief of Naval Personnel: Vice-Admiral Sir Algernon U. Willis	8.3.44
Third Sea Lord and Controller: Vice-Admiral Sir W. Frederick Wake-Walker	22.5.42
Fourth Sea Lord and Chief of Supplies and Transport: Vice-Admiral Sir Arthur F. E. Palliser	20.3.44
Fifth Sea Lord and Chief of Naval Air Equipment: Vice-Admiral Sir Denis W. Boyd (Title changed to Fifth Sea Lord (Air) 1.5.45)	14.1.43
Fifth Sea Lord (Air): Rear-Admiral T. H. Troubridge	1.5.45
Vice-Chief of Naval Staff: Vice-Admiral Sir E. Neville Syfret	7.6.43
Assistant Chief of Naval Staff (U-boat Warfare & Trade): Rear-Admiral J. H. Edelsten (Membership of the Board ceased when appointment was relinquished 30.10.44)	7.12.42
Assistant Chief of Naval Staff (Weapons): Rear-Admiral W. R. Patterson (Membership of the Board ceased when appointed was relinquished -.2.45)	8.3.43
Parliamentary Secretary: Lord Bruntisfield (appointment merged with Financial Secretary 4.8.45)	4.4.40

Financial Secretary:		
	J. P. L. Thomas Esquire (appointment merged with Parliamentary Secretary 4.8.45)	28.9.43
Parliamentary and Financial Secretary:		
	J. Dugdale, Esquire	4.8.45
Civil Lord:		
	Captain R. A. Pilkington	5.3.42
	W. J. Edwards, Esquire	4.8.45
Controller of Merchant Shipbuilding and Repairs:		
	Sir James Lithgow	1.2.40
Permanent Secretary:		
	Sir Henry V. Markham	5.12.40
<i>Assistant Chiefs of Naval Staff, not members of the Board:</i>		
Weapons:		
	Rear-Admiral R. D. Oliver	-2.45
U-boat Warfare and Trade:		
	Rear-Admiral J. G. L. Dundas	30.10.44
	Rear-Admiral J. M. Mansfield	24.3.45
Foreign:		
	Rear-Admiral R. M. Servaes	22.2.43
	Rear-Admiral E. G. H. Bellars	1.3.45
Home:		
	Rear-Admiral E. J. P. Brind	28.5.42
	Rear-Admiral E. D. B. McCarthy	22.8.44
Air:		
	Rear-Admiral R. H. Portal	1.1.43
	Rear-Admiral L. D. Mackintosh	16.11.44

APPENDIX M

The Organisation of the Mediterranean Fleet

1st June, 1944

The Mediterranean Fleet was commanded by Admiral Sir John H. D. Cunningham whose flag was ashore at Algiers. The principal sub-commands were:

Flag Officer Gibraltar and Mediterranean Approaches
Flag Officer Western Mediterranean
Vice-Admiral Malta and Flag Officer Central Mediterranean
Flag Officer Levant and Eastern Mediterranean

2. In addition, the following Allied Naval Commanders were directly responsible to the Commander-in-Chief.

(a) U.S. Commander Naval Forces North West Africa (COMNAVNAW) Flag at Oran. The U.S. Commander of the Moroccan Sea Frontier (COMMORSEAFRON), whose flag was at Casablanca was responsible to COMNAVNAW.

(b) Naval France. Headquarters at Algiers.

(c) Commander-in-Chief Italian Naval Forces. Flag at Taranto.

(d) Commander-in-Chief Greek Navy. Flag at Alexandria.

(e) Commander-in-Chief Yugo-Slav Navy. Flag at Alexandria.

3. *Flag Officer Gibraltar and Mediterranean Approaches* (FOGMA)
Vice-Admiral Sir Harold M. Burrough. Flag at Gibraltar.

4. *Flag Officer Western Mediterranean.* (FOWM)

This appointment was not filled until 15 July 44 when the Commander-in-Chief had transferred his headquarters to Naples. Vice-Admiral G. J. A. Miles was then appointed and flew his flag at Algiers. Under F.O.W. Med. were Commodore-in-Charge Algiers and Naval Officers in Charge, Bougie, Mers-el-Kebir, Bone and Philippeville.

5. *Vice-Admiral Malta and Flag Officer Central Mediterranean*

Vice-Admiral Sir Louis H. K. Hamilton whose flag was at Malta. Under him were:

(a) F.O.I.C. Tunisia with N.O.I.Cs at Tunis, Sousse and Sfax.

(b) Senior Naval Officer, East Sicily, at Augusta with N.O.I.C.s at Catania, Messina, Syracuse.

(c) Flag Officer Western Italy (FOWIT) at Naples with the Senior Officer Inshore Squadron at Bastia and N.O.I.Cs at Maddalena, Salerno and Naples.

(d) Flag Officer Taranto and Adriatic (FOTALI) at Taranto with N.O.I.Cs at Bari, Brindisi, Barletta and Taranto.

6. *Flag Officer Levant and Eastern Mediterranean (FOLEM)*

Vice-Admiral Sir H. Bernard Rawlings whose flag was at Alexandria.

Under him were:

- (a) Senior Naval Officer Red Sea and Canal Area
- (b) Senior Naval Officer Levant Area
- (c) Senior Naval Officer Cyrenaica
- (d) N.O.I.Cs Beirut, Benghazi, Cypriot ports, Port Said, Suez, Syrian ports, Tripoli (Syria).

APPENDIX N

The Organisation of the Mediterranean Allied Air Forces

1st June, 1944

1. The Mediterranean Allied Air Forces, whose headquarters were at Caserta were commanded by Lieutenant-General Ira C. Eaker, U.S.A.A.F. His deputy was Air Marshal Sir John Slessor. They consisted of the following main units:

Mediterranean Allied Strategic Air Force
Mediterranean Allied Tactical Air Force
Mediterranean Allied Coastal Air Force
H.Q. R.A.F. Middle East
Photographic Reconnaissance Wing
Ferry and Transport Group
Special Duty Squadrons
The Italian Air Force

2. *The Mediterranean Allied Strategic Air Force*

Commanded by Lieutenant-General Nathan Twining, U.S.A.A.F., it was based on the Foggia airfields in Southern Italy. It was composed of U.S. heavy bombers and long range fighters, and No. 205 R.A.F. Group of night bombers. Its targets were linked with the Combined Bomber Offensive, but it supported the land battle in Italy in emergencies, and attacked ports when priorities allowed.

3. *The Mediterranean Allied Tactical Air Force*

Commanded by Lieutenant-General John Cannon, U.S.A.A.F., it was based in southern Italy, and its main task was to support the land campaign. It was composed of

(a) The XIIth Tactical Air Command, consisting mainly of United States, British and Commonwealth medium and light bombers and fighters supporting the Fifth Army; and

(b) The Desert Air Force, consisting mainly of British, Commonwealth and Allied (other than U.S.) medium and light bombers and fighters supporting the Eighth Army.

4. *The Mediterranean Allied Coastal Air Force*

Commanded by Air Vice-Marshal Sir Hugh Lloyd. Its headquarters were at Algiers, and its 49 squadrons consisted of 26 R.A.F. and Commonwealth, 13 U.S.A.A.F., and 10 French Air Force. It was responsible for convoy and port protection in the Western and Central Mediterranean, and provided aircraft for anti-shipping and anti-submarine operations.

It was also participating increasingly in the support of land operations. It was composed of:

- (a) 62nd Fighter Wing, predominantly U.S., based on Naples.
- (b) 63rd Fighter Wing, predominantly U.S., based on Corsica.
- (c) Four R.A.F. Wings and the R.A.F. Sector Bone based on North West African airfields.
- (d) A.H.Q. Malta.
- (e) No. 242 R.A.F. Group based on airfields on the 'heel' of Italy.

5. *H.Q. R.A.F. Middle East*

Commanded by Air Vice-Marshal Sir Keith R. Park whose headquarters were at Alexandria. It was formed of all types of British, Commonwealth and Allied (other than U.S.) aircraft. Its operations within the Mediterranean were controlled by the Mediterranean Allied Air Force. It was composed of:

- (a) A.H.Q. Eastern Mediterranean at Alexandria
- (b) A.H.Q. Levant, Aden, East Africa, and Iraq and Persia.

6. The total number of squadrons in the Mediterranean Allied Air Force at this time was 318½, of which 172 were United States, 109 British and Commonwealth, 15 French, 3 Greek, 1½ Polish, 1 Yugoslav, 17 Italian. The average number of aircraft per squadron was about 15, though the strength varied according to nationality and type of aircraft.

APPENDIX O

Enemy Merchant Shipping Sunk, Captured or Scuttled inside the Mediterranean, June, 1940–April, 1945

(Number—Tonnage)

Year	By Allied Warships	By Mines	By Allied Aircraft	Shared by Warships and Aircraft	Captured or Surrendered	Scuttled or Sabotaged	Other known causes	Unknown Causes	Yearly Totals
1940	27- 70,085	21- 46,326	18- 52,410	—	20- 44,968	5- 20,625	7- 3,080	6- 15,958	104- 253,452
1941	125- 379,340	27- 52,982	70- 166,879	5-27,703	8- 19,215	26- 2,546	28- 19,078	24- 23,915	313- 691,658
1942	108- 254,763	15- 27,989	88- 195,464	10-39,256	—	15- 27,924	27- 14,324	25- 16,984	288- 576,704
1943	214- 391,815	30- 36,928	340- 474,477	4-18,011	129-210,463	230-158,277	88-126,872	188- 49,768	1,223-1,466,611
1944	64- 82,793	10- 9,971	225- 321,589	—	9- 17,735	202-473,855	40- 7,575	92- 17,367	642- 930,885
1945	2- 611	3- 106	12- 20,993	—	13- 5,347	50- 40,136	7- 6,910	17- 6,827	104- 80,930
Date not known	2- 91	5- 174	16- 2,385	—	39- 2,785	49- 28,888	3- 123	294-112,837	408- 147,283
TOTALS	542-1,179,498	111-174,476	769-1,234,197	19-84,970*	218-300,513	577-753,251	200-177,962	646-243,656	3,082-4,147,523

* 1 ship (1,778 tons) was shared by aircraft and mine.

NOTE: In this table are included all vessels of no matter what nationality which were employed in the Mediterranean in service of the Axis powers up to the Italian surrender (9th Sept. 1943) and thereafter all those in German service. Many of them were extremely small (e.g. ex-Greek caiques), and the average size of all the ships sunk was only 1,346 tons. This table having been constructed on a different basis from those giving Italian and German Merchant Shipping Losses for each phase of the war (e.g. Tables 13, 20, 28 and 33 in this volume, and similar tables in earlier volumes), the two sets of statistics cannot be compared.

APPENDIX P

The History of the Royal Navy's Fleet Train

It was chiefly the increased likelihood of bombing attacks on fixed bases which turned the Admiralty's attention to the provision of floating and mobile support for the fleet in 1936. There were at that time a considerable number of Royal Fleet Auxiliaries, chiefly tankers and store ships, in service; and they were regularly used to transport fuel and stores between supply ports or home bases and the overseas bases used by the fleets. There were also a number of naval repair and depot ships; but the R.F.As and the existing floating repair facilities were plainly quite inadequate to meet the needs which would arise in the event of war. The Admiralty therefore set up a Committee 'to consider the numbers and types of auxiliary vessels . . . required for maintaining supplies to the fleet in certain emergencies . . . taking into consideration the possibility of certain bases not being available and others having to be improvised'. This committee presented its report in the spring of 1938, and in it the estimated requirements were set out in the event of war in Europe and also in the Far East. One of the hypothetical emergencies visualized was the loss of Singapore; but the Admiralty ruled that it should be regarded as always available. In all other respects the committee's estimates were accepted, and in the summer of 1939 the Admiralty took steps to implement its recommendations with regard to the measures to be taken if war broke out in Europe. These decisions gradually bore fruit in the floating support provided to the Mediterranean Fleet at Alexandria and other ports in the Levant. But by the time that Japan attacked Britain and the United States in December 1941 our losses of both warships and merchantmen had been so heavy that neither a properly balanced fleet nor the mobile support needed for it could be produced for the new theatre, and it was at once plain that the Royal Navy would have to operate in waters where base facilities, both fixed and floating, would be totally inadequate.

In March 1943 the Commander-in-Chief, Eastern Fleet, put forward proposals for the establishment of bases at certain places in the Indian Ocean, and when these were considered in the Admiralty the Naval Staff strongly represented that, even though the strategy which the reconstituted Eastern Fleet would apply was not yet clear, it was certain that its support would have to be mainly afloat and mobile. In July of that year the Admiralty accordingly issued a memorandum stating that as our forces advanced eastwards the fleet's supply organisation would have to be prepared to move rapidly forward with it. Two Mobile Fleet Base Organisations (M.F.B.Os) were to be provided, one in the Indian Ocean and the other in the Pacific; and each was to be capable of maintaining a fleet of four battleships, four fleet aircraft carriers, fifteen escort carriers, fifteen

cruisers, fifty destroyers and a like number of escort vessels, twenty submarines, fifty Combined Operations ships, and a large force of landing craft and minesweepers. It might be necessary, said the Admiralty, for the fighting ships to rely on the mobile maintenance and supply organisation for periods as long as six months; and in an amplifying memorandum the Naval Staff defined the function of the M.F.B.Os as 'the rapid provision of the facilities necessary for the sustained operation of the fleet in an area far removed from established bases.'

By September 1943 it appeared unlikely that a large British fleet would be sent to the Pacific; and if only a few ships joined the American forces, we presumed that they would be able to rely on the latter for the greater part of their material needs—as indeed had the Australian and New Zealand warships which had been operating under American command since early in 1942. None the less an estimate of the auxiliary vessels needed to support a large fleet was framed and submitted to the Chiefs of Staff, who referred it to the Ministry of War Transport through the Defence Committee. Three months later, however, as a result of the Cairo conference decision of November 1943, the prospect of a major fleet going to the Pacific had increased, and in January 1944 the Admiralty therefore sent a mission to the United States to discuss the composition of the Fleet Train and formulate proposals. This mission resulted in an agreement with the Americans that the British Fleet 'should have its own supply arrangements, and be self-sustaining except that the United States would:

- (1) Share its excess facilities afloat and ashore in forward areas.
- (2) Maintain harbour defences and minimum port facilities.
- (3) Render emergency and temporary battle damage aid to British units on the same basis as U.S. units.
- (4) Make available such airfields as may be under its control adjacent to the fleet anchorage for British carrier aircraft, but would not be prepared to support such aircraft for maintenance'.

As in British eyes the scale of American logistic planning always appeared somewhat lavish, the belief that 'excess facilities' would be available received some encouragement in London; but the Americans always made it clear that the British fleet would have to be completely self-supporting in naval, armament, victualling and aircraft stores.

On 8th February 1944 the First Lord tabled a memorandum to the Defence Committee, setting out in full the reasons why a large Fleet Train was necessary, explaining why sufficient men and material could never be made available to provide a succession of fixed advanced bases for the fleet, and tabulating the shipping needed to meet the requirements recently agreed with the Americans. These latter amounted to no less than 134 merchantmen totalling about $1\frac{1}{2}$ million tons, two-thirds of which (91 ships) were required for the Pacific and the remainder for the Indian Ocean. Ten days later the Minister of War Transport pointed out the serious effect which these large demands would have on other commitments, and especially on the import programme. He suggested that the Admiralty should draw heavily on the $2\frac{1}{2}$ million tons (560 ships) which the department already had at its disposal; but in fact very few of these could be spared,

nor were they suitable unless extensively modified. By the end of March 1944 the Admiralty had increased its demand to 158 ships, on the grounds that, as the fighting moved closer to Japan, the distance from the main base in Australia at which the fleet would be required to operate must steadily increase. It was now plain that the conflict between the need to build up the Fleet Train as quickly as possible and the need to meet the nation's other world-wide shipping commitments could only be reconciled on the highest level, and the issue was therefore placed before the Prime Minister. On 9th April 1944 Mr. Churchill informed the Admiralty of his decision. 'The Fleet Train' he wrote 'is limited by the need of getting an absolute irreducible minimum of 24 million tons of imports this year and next. All naval and military requirements must be subordinated to this decisive rule, without which the life and war effort of Britain cannot be maintained. In working out your Fleet Train you must observe these requirements.

'The Fleet which you could operate in the Indian Ocean or in the South-West Pacific . . . must be limited by the Fleet Train. . . . The priorities are as follows:

- (a) 24 million tons of imports this year and next.
- (b) The Fleet Train permissible on this basis.
- (c) The fighting fleet that can be carried by the said Fleet Train.

It follows from the above that the great concession made to the Navy in allowing them to have the 230,000 tons of brand new merchant shipping available in about a year must be made good by ton for ton replacements in ocean-going tonnage to the Ministry of War Transport, which in principle must be simultaneous. . . . Please take this as a decision. . . .'

The Admiralty was now placed in a difficult dilemma; for while neither Allied strategy to bring about the defeat of Japan nor the rôle in which the British fleet would be employed were yet clear, the need to press ahead with plans for its support and supply remained as urgent as ever. All that could be done was to press ahead with preparing the rearward bases in Australia, and start converting such ships as could be spared from its own resources or obtained from the Ministry of War Transport. Not until the second Quebec conference in September 1944 had decided that the fleet would definitely go to the Pacific could detailed logistic planning be undertaken, and even then the needs for merchant shipping remained very high; for the Admiralty naturally wished to send out a first class fighting fleet, and such a force could not give of its best if its supply system was inadequate. Faced with such an intractable problem the Admiralty seems to have relied a good deal on the not very well founded hope that, once the warships were on the station the necessary support for it would somehow be forthcoming. Such, in brief, was the situation when, in December 1944, Admiral Fraser reviewed the problems and expressed to the Admiralty his grave concern over the supply situation of his fleet.¹

Meanwhile the Admiralty and Ministry of War Transport had been engaged on further protracted discussions, but without resolving their

¹ See pp. 331-332.

differences. At the end of January 1945 the War Cabinet decided that, in view of the continuing and acute shortage of merchant shipping, the provision of the tonnage required for the Fleet Train should be postponed for two months. It now appeared as though the mobile support would be so drastically reduced that the fleet would need a far more elaborate 'intermediate base' than had been envisaged; and the manpower and material needed to create such a base could obviously not be produced for a very long time. In fact, however, such a measure was overtaken by events, and the support and maintenance ships which the Admiralty had gradually been collecting, converting and despatching to the theatre since late in 1944 proved adequate—with substantial American help—to enable Admiral Fraser's fleet to meet the demands laid upon it.

While the protracted discussions outlined above were in progress the Admiralty was also considering the parallel problem of providing base facilities for the Fleet Air Arm squadrons earmarked for the Pacific, and by January 1945 five Mobile Operating Naval Air Bases (M.O.N.A.Bs) had been formed. Their object was to enable captured or reconditioned airfields to be rapidly manned and equipped for use by naval aircraft temporarily disembarked for training or maintenance, and to receive and despatch the large numbers of reserve aircraft which would be needed by the fleet. As, however, the M.O.N.A.Bs did not include personnel or machinery for constructional purposes, they had to depend on existing airfields being turned over to them. In practice it proved very difficult to meet that need. The first M.O.N.A.B. was installed near Sydney in January 1945, and the other four were by that time on their way out from Britain, where other units were still being formed. The requirements for the Fleet Train as planned in 1944, and the numbers and types of ships actually available on the station in the spring and summer of 1945 are shown in the table overleaf.

The Fleet Train in the Pacific, 1945

	Estimate of strength required to support B.P.F. (December 1944)	Ships on station March-May 45	Ships on station July-Aug. 45
Repair ships	7	2	3
Hull repair ships	1	0	0
Escort maintenance ships	3	0	2
Destroyer Depot ships	2	2	2
Submarine depot ships	2	0	1
Aircraft maintenance ships	3	0	1
Aircraft component repair ships	3	2	2
Aircraft engine repair ships	3		
Motor Craft maintenance ships	1	0	0
Minesweeper maintenance ships	1	0	1
Mine issue ships	2	0	0
Accommodation ships	6	4	6
Armament maintenance ships	2	0	0
Naval store issuing ships	6	2	2
Naval store carriers	8	5	5
Victualling store issuing ships	10	7	7
Air store issuing ships	3	1	2
Armament store issuing ships	13	13	13
Armament store carriers	6		
Hospital ships	2	3	5
Tankers (fast)	5	10	14
Distilling ships	2	1	1
Netlayers	No estimate given	1	1
Bar vessel	"	0	1
'Deperming' (i.e. demagnetising) ship	"	1	1
Tankers (small)	"	0	3
Salvage ship	"	0	2
Water tankers	"	1	4
Colliers	"	1	2
Floating docks	"	0	3
Tugs	"	2	5
Radio maintenance ship	"	0	1
Harbour craft carrier and depot ships	"	0	2

NOTES

1. Estimated requirements excluded ferry and replenishment aircraft carriers, because escort carriers were to serve as such. The first three of them arrived on station in February 1945, and by August there were eight.
2. The estimate for fast tankers had to be increased to eighteen early in 1945. Of the fourteen that had arrived by August, four were capable of 15 knots, the remainder having a maximum speed of only 11 knots.
3. In September 1944, the Admiralty had stated a requirement for two 'Amenity ships' to provide amenities for the B.P.F. and East Indies Fleet in the forward areas. Two ex-Blue Funnel liners were taken in hand for conversion in Canada in January 1945, but neither had arrived on station by the time the war ended.
4. The Floating docks were of destroyer size. Two of them arrived on station in June and July 1945 after being towed out from Iceland and Oran. Until their arrival reliance had to be placed on American facilities. The large dock which had been intended to serve the B.P.F. was seriously damaged at Trincomalee in August 1944 when it collapsed with the battleship *Valiant* inside it. (See p. 201.)

APPENDIX Q

North Atlantic Troopship Movements (‘Operational Convoys’) *January, 1944–May, 1945*

Month	Outward		Homeward	
	Number of convoys in which troopships sailed	Allied fighting men carried (all services)	Number of convoys in which troopships sailed	Allied fighting men carried (all services)
January 1944	6	10,396	10	172,020
February 1944	9	13,022	14	147,760
March 1944	10	10,713	16	83,632
April 1944	11	9,641	17	176,490
May 1944	10	11,309	9	130,155
June 1944	10	16,635	14	126,734
July 1944	14	49,514	19	171,715
August 1944	12	42,700	15	169,321
September 1944	13	47,248	17	99,090
October 1944	18	63,947	15	173,543
November 1944	12	25,559	13	176,890
December 1944	18	51,465	18	150,037
TOTALS 1944	143	352,149	177	1,777,387

Month	Outward		Homeward	
	Number of convoys in which troopships sailed	Allied fighting men carried (all services)	Number of convoys in which troopships sailed	Allied fighting men carried (all services)
January 1945	19	45,513	10	96,108
February 1945	20	46,253	13	79,597
March 1945	22	71,382	14	94,365
April 1945	19	60,173	8	28,882
May 1945	21	99,849	6	17,452
TOTALS to May 1945	101	323,170	51	316,404

NOTE:

In this period many troopships sailed in ordinary homeward convoys (such as HX and CU) as well as in ‘Operational Convoys’ (AT). Thus the figures given above are not directly comparable to those given in Volume II Appendix E for the period June–December 1943, when nearly all troop movements were made in ‘Operational Convoys’, consisting of the monster liners. These latter normally sailed singly, and carried a very large proportion of the total troops transported. They consisted of the *Queen Elizabeth*, *Queen Mary*, *Aquitania*, *Mauretania*, *Pasteur* (French), *Ile de France* (French), *Nieuw Amsterdam* (Dutch) and *Andes*.

APPENDIX R

Statistics of Arctic Convoys 1941-1945

Table A: Eastbound

Convoy	Port and Date of sailing	Number of ships sailed	Number of ships returned to harbour	Number of ships lost and cause of loss	Number of ships arrived	Port and Date of arrival	Remarks
'Dervish'	Hvalfiord 21.8.41	7	—	—	7	Archangel 31.8.41	
PQ.1	Hvalfiord 29.9.41	10	—	—	10	Archangel 11.10.41	
PQ.2	Scapa 17.10.41	6	—	—	6	Archangel 30.10.41	
PQ.3	Hvalfiord 9.11.41	8	1	—	7	Archangel 28.11.41	
PQ.4	Hvalfiord 17.11.41	8	—	—	8	Archangel 28.11.41	
PQ.5	Hvalfiord 27.11.41	7	—	—	7	Archangel 12.12.41	
PQ.6	Hvalfiord 8.12.41	7	—	—	7	Murmansk 20.12.41	
PQ.7	Hvalfiord 26.12.41	2	—	1—by U-boat	1	Murmansk 12.1.42	
PQ.7B	Hvalfiord 31.12.41	9	—	—	9	Murmansk 11.1.42	
PQ.8	Hvalfiord 8.1.42	8	—	—	8	Murmansk 17.1.42	1 torpedoed and towed in. Matabelle sunk by U-boat.
PQ.9	Hvalfiord 1.2.42	7	—	—	7	Murmansk 10.2.42	} Sailed in company.
PQ.10	Hvalfiord 1.2.42	3	—	—	3	Murmansk 10.2.42	
PQ.11	Loch Ewe 6.2.42	13	—	—	13	Murmansk 23.2.42	Shera capsized.
PQ.12	Reykjavik 1.3.42	16	—	—	16	Murmansk 12.3.42	Trinidad torpedoed. German
PQ.13	Reykjavik 20.3.42	19	—	2—by U-boat 2—by aircraft 1—by surface ship	14	Murmansk 31.3.42	destroyer Z.26 sunk.
PQ.14	Reykjavik 8.4.42	24	16 (weather and ice)	1—by U-boat	7	Murmansk 19.4.42	
PQ.15	Reykjavik 26.4.42	25	—	3—by aircraft	22	Murmansk 5.5.42	Punjab sunk in collision. Polish S/M P.551 accidentally sunk by the escort.
PQ.16	Reykjavik 21.5.42	35	1	6—by aircraft 1—by U-boat	27	Murmansk 30.5.42	

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PQ.17	Reykjavik	27.6.42	36	2	13—by aircraft 10—by U-boat	11	Archangel 11—25.7.42 17.9.42	One of three rescue ships also sunk.
PQ.18	Loch Ewe	2.9.42	40	—	10—by aircraft 3—by U-boat	27	Archangel	
JW.51A	Loch Ewe	15.12.42	16	—	—	16	Kola Inlet	25.12.42
JW.51B	Loch Ewe	22.12.42	14	—	—	14	Kola Inlet	3.1.43
JW.52	Loch Ewe	17.1.43	14	1	—	13	Kola Inlet	17.1.43
JW.53	Loch Ewe	15.2.43	28	6 (weather)	—	22	Kola Inlet	17.2.43
JW.54A	Loch Ewe	15.11.43	18	—	—	18	Kola Inlet	24.11.43
JW.54B	Loch Ewe	22.11.43	14	—	—	14	Kola Inlet	2.12.43
JW.55A	Loch Ewe	12.12.43	19	—	—	19	Kola Inlet	20.12.43
JW.55B	Loch Ewe	20.12.43	19	—	—	19	Kola Inlet	29.12.43
JW.56A	Loch Ewe	12.1.44	20	5 (weather)	3—by U-boat	12	Kola Inlet	28.1.44
JW.56B	Loch Ewe	22.1.44	16	—	—	16	Kola Inlet	1.2.44
JW.57	Loch Ewe	20.2.44	42	—	—	42	Kola Inlet	28.2.44
JW.58	Loch Ewe	27.3.44	49	1 (ice)	—	48	Kola Inlet	5.4.44
JW.59	Loch Ewe	15.8.44	33	—	—	33	Kola Inlet	25.8.44
JW.60	Loch Ewe	15.9.44	30	—	—	30	Kola Inlet	23.9.44
JW.61	Loch Ewe	20.10.44	29	—	—	29	Kola Inlet	28.10.44
JW.61A	Liverpool	31.10.44	2	—	—	2	Kola Inlet	6.11.44
JW.62	Loch Ewe	29.11.44	30	—	—	30	Kola Inlet	7.12.44
JW.63	Loch Ewe	30.12.44	35	—	—	35	Kola Inlet	8.1.45
JW.64	Clyde	3.2.45	26	—	—	26	Kola Inlet	13.2.45
JW.65	Clyde	11.3.45	24	—	2—by U-boat	22	Kola Inlet	21.3.45
JW.66	Clyde	16.4.45	22	—	—	22	Kola Inlet	25.4.45
JW.67	Clyde	12.5.45	23	—	—	23	Kola Inlet	20.5.45

NOTE

1. Many ships of convoys bound for Kola Inlet proceeded straight on to White Sea ports, where they arrived two days later.
2. In addition, five ships and the minesweeper *Gosamer* were sunk in Russian ports by aircraft or mines after arrival.
3. Between 29.10.42 and 2.11.42 thirteen ships sailed independently for North Russia, four were sunk by U-boats, one was wrecked, three turned back and five arrived safely.

APPENDIX R

Table B: Westbound

Convoy	Port and Date of sailing	Number of ships sailed	Number of ships returned to harbour	Number of ships lost and cause of loss	Number of ships arrived	Port and Date of arrival	Remarks
QP.1	Archangel 28.9.41	14	—	—	14	Scapa	9.10.41
QP.2	Archangel 2.11.41	12	—	—	12	Kirkwall	17.11.41
QP.3	Archangel 27.11.41	10	2 (weather)	—	8	Seidisfjord	7.12.41
QP.4	Archangel 20.12.41	13	2	—	11	Seidisfjord	16.1.42
QP.5	Murmansk 13.1.42	4	—	—	4	Reykjavik	26.1.42
QP.6	Murmansk 24.1.42	6	—	—	6	U.K.	2.2.42
QP.7	Murmansk 12.2.42	8	—	—	8	Seidisfjord	22.2.42
QP.8	Murmansk 1.3.42	15	—	1—by surface craft (straggler)	14	Reykjavik	11.3.42
QP.9	Murmansk 21.3.42	19	—	—	19	Reykjavik	3.4.42
QP.10	Murmansk 10.4.42	16	1	2—by U-boat 2—by aircraft	11	Reykjavik	21.4.42
QP.11	Murmansk 28.4.42	13	—	1—by surface craft (straggler)	12	Reykjavik	7.5.42
QP.12	Murmansk 21.5.42	15	1	—	14	Reykjavik	29.5.42
QP.13	Murmansk 27.6.42	35	—	5—in British minefield (straggler)	30	Reykjavik and Loch Ewe	7.7.42
QP.14	Archangel 13.9.42	15	—	3—by U-boat	12	Loch Ewe	26.9.42
QP.15	Archangel 17.11.42	28	—	2—by U-boat	26	Loch Ewe	30.11.42
RA.51	Kola Inlet 30.12.42	14	—	—	14	Loch Ewe	11.1.43
RA.52	Kola Inlet 29.1.43	11	—	1—by U-boat	10	Loch Ewe	8.2.43
RA.53	Kola Inlet 1.3.43	30	—	3—by U-boat 1—foundered	26	Loch Ewe	14.3.43

Edinburgh sunk. German destroyer *Schoemann* sunk.

Niger sunk in British minefield.

Somali, *Leda* and R.F.A. *Greg Ranger* sunk by U-boats.

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RA.54A	Archangel	1.11.43	13	—	—	13	Loch Ewe	14.11.43
RA.54B	Archangel	26.11.43	9	—	—	9	Loch Ewe	9.12.43
RA.55A	Kola Inlet	23.12.43	22	1	—	21	Loch Ewe	1.1.44
RA.55B	Kola Inlet	31.12.45	8	—	—	8	Loch Ewe	8.1.44
RA.56	Kola Inlet	3.2.44	37	—	—	37	Loch Ewe	11.2.44
RA.57	Kola Inlet	2.3.44	31	—	1—by U-boat	30	Loch Ewe	10.3.44
RA.58	Kola Inlet	7.4.44	36	—	—	36	Loch Ewe	14.4.44
RA.59	Kola Inlet	28.4.44	45	—	1—by U-boat	44	Loch Ewe	6.5.44
RA.59A	Kola Inlet	28.8.44	9	—	—	9	Loch Ewe	6.9.44
RA.60	Kola Inlet	28.9.44	30	—	2—by U-boat	28	Loch Ewe	5.10.44
RA.61	Kola Inlet	2.11.44	33	—	—	33	Loch Ewe	9.11.44
RA.61A	Kola Inlet	10.11.44	2	—	—	2	Clyde	16.11.44
RA.62	Kola Inlet	10.12.44	28	—	—	28	Loch Ewe	19.12.44
RA.63	Kola Inlet	11.1.45	30	—	—	30	Loch Ewe	21.1.45
RA.64	Kola Inlet	17.2.45	34	1	1—by U-boat 1—by aircraft	31	Loch Ewe	28.2.45
RA.65	Kola Inlet	23.3.45	25	—	—	25	Kirkwall	31.3.45
RA.66	Kola Inlet	29.4.45	24	—	—	24	Clyde	8.5.45
RA.67	Kola Inlet	23.5.45	23	—	—	23	Clyde	31.5.45

2 more ships were sunk by U-boat before joining convoy.
Bluebell sunk by U-boat.

Goodall sunk.

NOTE

Between 29.10.42 and 24.1.43 28 ships sailed independently from North Russia, one was sunk by surface ship, but all the remainder arrived safely.

APPENDIX S

Strength of the Navies of the British Commonwealth on the 8th of May, 1945

(including vessels on loan to Allied Navies)

<i>Type</i>	<i>Number</i>	<i>Remarks</i>
Battleships	14	5 in commission, 1 on loan to U.S.S.R., 1 refitting, remainder used as base accommodation and training ships or reducing to or in reserve.
Battlecruiser	1	Repairing.
Fleet carriers	7	6 in commission, 1 in reserve.
Light fleet carriers	4	All in commission.
Escort carriers	41	6 on loan to U.S. 2 (damaged) in reserve. 1 used as accommodation ship, a few employed on trials, training and ferry duties.
Cruisers	62	19 old ships in reserve or used as base accommodation ships or for training. Most of the remainder in commission.
Auxiliary cruiser	1	
Monitors	3	1 in care and maintenance.
Fighter direction ships	3	All in commission.
Fleet destroyers	108	Nearly all in commission.
Escort destroyers	83	All pre-war construction or ex-American 'Town-class'. 22 in reserve, 6 lent to U.S.S.R., many used as target and trials vessels or employed on non-operational duties.
<i>Hunt</i> class destroyers	66	Nearly all in commission.
Submarines	131	About 8 in reserve awaiting scrapping. A large number employed on training and trials.
Sloops	50	About 10 in reserve or used on non-operational duties.
Frigates	235	About 7 in reserve or awaiting scrapping nearly all of the remainder in commission.
	436	

<i>Type</i>	<i>Number</i>	<i>Remarks</i>
Corvettes	257	A few in reserve or employed on non-operational duties, the remainder in commission.
Cutters	7	All in commission.
Aircraft transports	2	Both in reserve.
Aircraft repair ship	1	
Aircraft maintenance ship	1	
Large minelayer	1	
Fast minelayers	3	
A/S vessels ('Kil' Class)	27	All in commission.
Surveying ships	5	
Fleet minesweepers	274	About 30 in reserve or awaiting scrapping, several employed on non-operational duties.
Trawlers (All types)	350	
Motor minesweepers	307	
British 'yard minesweepers'	136	
Boom defence vessels	106	
Barrage vessels	6	
Motor torpedo-boats	374	About 80 in reserve.
Motor gunboats	48	About 22 in reserve.
Steam gunboats	6	
Motor A/S boats	15	All in reserve.
Patrol boats	6	
Motor launches	940	
Netlayers	3	
Auxiliary A-A ships	7	
River gunboats	6	2 in commission
Destroyer depot and repair ships	8	
Submarine depot and repair ships	15	
Maintenance ships	4	
Base mining ships	3	
Fleet tugs	86	
Salvage vessels	23	
Gunboats	4	
Oil tankers	63	
Auxiliary tankers	2	
Spirit carriers	3	
Water carriers	15	
Store and supply ships	7	Excluding all Red Ensign vessels in the Fleet Train.
Hospital ships	6	
Cable ships	37	
Landing Ships Headquarters (Large and small)	9	
Landing Ship Carrier	1	

<i>Type</i>	<i>Number</i>	<i>Remarks</i>
Landing Ships Dock	4	
Landing Ships Emergency Repair	6	
Landing Ships Gantry	3	
Landing Ships Infantry (All types)	30	
Landing Ship Stern Chute	1	
Landing Ships Tank, Types 1, 2 and 3	115	
Major landing craft	1,265	
Minor landing craft	3,777	
Landing Barges	276	

APPENDIX T

*Table I. Nominal List of British Commonwealth Major
Warship Losses
3rd September, 1939—15th August, 1945*

(This table includes British ships on loan to and manned by Allied Navies)

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
BATTLESHIPS			
14.10.39	<i>Royal Oak</i>	U.47	Scapa Flow
25.11.41	<i>Barham</i>	U.331	off Egyptian Coast
10.12.41	<i>Prince of Wales</i>	Japanese aircraft	east of Malaya
BATTLE CRUISERS			
24.5.41	<i>Hood</i>	<i>Bismarck</i>	Denmark Strait
10.12.41	<i>Repulse</i>	Japanese aircraft	east of Malaya
AIRCRAFT CARRIERS			
17.9.39	<i>Courageous</i>	U.29	s.w. of Ireland
8.6.40	<i>Glorious</i>	<i>Scharnhorst</i> and <i>Gneisenau</i>	west of Lofoten Is.
13.11.41	<i>Ark Royal</i>	U.81	east of Gibraltar
9.4.42	<i>Hermes</i>	Japanese aircraft	east of Ceylon
11.8.42	<i>Eagle</i>	U.73	south of the Balearic Islands
AUXILIARY AIRCRAFT AND ESCORT CARRIERS			
21.12.41	<i>Audacity</i>	U.751	North Atlantic
15.11.42	<i>Avenger</i>	U.155	west of Gibraltar
27.3.43	<i>Dasher</i>	explosion	Firth of Clyde
AUXILIARY FIGHTER CATAPULT SHIPS			
27.4.41	<i>Patia</i>	German aircraft	Tyne
27.9.41	<i>Springbank</i>	U.201	North Atlantic
CRUISERS			
17.5.40	<i>Effingham</i>	wrecked	northern Norway
26.5.40	<i>Curlew</i>	German aircraft	off northern Norway
12.6.40	<i>Calypso</i>	It. S/M <i>Bagnolini</i>	south of Crete
11.1.41	<i>Southampton</i>	German aircraft	central Mediterranean
26.3.41	<i>York</i>	It. E-boats	Crete
31.3.41	<i>Bonaventure</i>	It. S/M <i>Ambra</i>	south of Crete
22.5.41	<i>Fiji</i>	German aircraft	off Crete
22.5.41	<i>Gloucester</i>	German aircraft	off Crete
1.6.41	<i>Calcutta</i>	German aircraft	off Egyptian coast
19.11.41	<i>Sydney</i> (R.A.N.)	German raider <i>Kormoran</i>	west of Australia
24.11.41	<i>Dunedin</i>	U.124	Central Atlantic
14.12.41	<i>Galatea</i>	U.557	off Alexandria
19.12.41	<i>Neptune</i>	mine	off Tripoli
28.2.42	<i>Perth</i> (R.A.N.)	Japanese warships	Java Sea
1.3.42	<i>Exeter</i>	Japanese warships	Java Sea
11.3.42	<i>Naiad</i>	U.565	off Egyptian coast
5.4.42	<i>Dorsetshire</i>	Japanese aircraft	S.W. of Ceylon
5.4.42	<i>Cornwall</i>	Japanese aircraft	S.W. of Ceylon
2.5.42	<i>Edinburgh</i>	surface action	Barents Sea
15.5.42	<i>Trinidad</i>	German aircraft	Barents Sea
16.6.42	<i>Hermions</i>	U.205	south of Crete
9.8.42	<i>Canberra</i> (R.A.N.)	surface action	off Guadalcanal
12.8.42	<i>Cairo</i>	It. S/M <i>Axum</i>	off C. Bon
13.8.42	<i>Manchester</i>	It. E-boats	off C. Bon

Date	Name	Cause	Area
CRUISERS			
<i>(Contd.)</i>			
14.9.42	<i>Coventry</i>	German aircraft	eastern Mediterranean
2.10.42	<i>Curacoa</i>	collision	North Atlantic
9.10.43	<i>Carlisle</i>	German aircraft	Aegean
23.10.43	<i>Charvbidis</i>	German destroyers T.23 and T.27	off French coast
29.1.44	<i>Spartan</i>	German aircraft	off Anzio
18.2.44	<i>Penelope</i>	U.410	N.W. of Naples
9.6.44	<i>Durban</i>	Used as blockship	Normandy beaches
8.7.44	<i>Dragon</i> (Polish)	German small battle unit (Marder)	Seine Bay
DESTROYERS			
13.11.39	<i>Blanche</i>	mine	Thames estuary
21.11.39	<i>Gipsy</i>	mine	Harwich
12.12.39	<i>Duchess</i>	collision	off Mull of Kintyre
19.1.40	<i>Grenville</i>	mine	east of Thames estuary
21.1.40	<i>Exmouth</i>	U.22	east of Wick
18.2.40	<i>Daring</i>	U.23	east of Pentland Firth
8.4.40	<i>Glowworm</i>	<i>Admiral Hipper</i>	west of Trondheim
9.4.40	<i>Gurkha</i>	German aircraft	west of Bergen
10.4.40	<i>Hardy</i>	surface action	Narvik
10.4.40	<i>Hunter</i>	surface action	Narvik
3.5.40	<i>Afridi</i>	German aircraft	N.W. of Trondheim
15.5.40	<i>Valentine</i>	German aircraft	off Belgian coast
19.5.40	<i>Whitley</i>	German aircraft	off Belgian coast
24.5.40	<i>Wessex</i>	German aircraft	off Calais
29.5.40	<i>Grafton</i>	U.62	west of Dunkirk
29.5.40	<i>Grenade</i>	German aircraft	Dunkirk
29.5.40	<i>Wakeful</i>	German E-boat	west of Dunkirk
1.6.40	<i>Basilisk</i>	German aircraft	west of Dunkirk
1.6.40	<i>Havant</i>	German aircraft	Dunkirk
1.6.40	<i>Keith</i>	German aircraft	off Dunkirk
8.6.40	<i>Acasta</i>	<i>Scharnhorst</i> and <i>Gneisenau</i>	west of Lofoten Is.
8.6.40	<i>Ardent</i>	<i>Scharnhorst</i> and <i>Gneisenau</i>	west of Lofoten Is.
23.6.40	<i>Khartoum</i>	explosion	Perim, Red Sea
25.6.40	<i>Fraser</i> (R.C.N.)	collision	Bordeaux
5.7.40	<i>Whirlwind</i>	U.34	west of Land's End
11.7.40	<i>Escort</i>	It. S/M <i>Marconi</i>	east of Gibraltar
16.7.40	<i>Imogen</i>	collision	off Pentland Firth
20.7.40	<i>Brazen</i>	German aircraft	off Dover
27.7.40	<i>Codrington</i>	German aircraft	Dover
27.7.40	<i>Wren</i>	German aircraft	off Suffolk coast
29.7.40	<i>Delight</i>	German aircraft	Portland
23.8.40	<i>Hostile</i>	mine	off C. Bon
31.8.40	<i>Esk</i>	mine	off Dutch coast
1.9.40	<i>Ivanhoe</i>	mine	off Dutch coast
19.10.40	<i>Venetia</i>	mine	Thames estuary
22.10.40	<i>Margaree</i> (R.C.N.) (<i>ex Diana</i>)	collision	North Atlantic
30.10.40	<i>Sturdy</i>	wrecked	west coast of Scotland
5.12.40	<i>Cameron</i>	German aircraft	Portsmouth
17.12.40	<i>Acheron</i>	mine	off Isle of Wight
22.12.40	<i>Hyperion</i>	mine	off C. Bon
10.1.41	<i>Gallant</i>	mine	off Pantelleria
24.2.41	<i>Dainty</i>	German aircraft	Tobruk
25.2.41	<i>Exmoor</i>	German E-boat	off Lowestoft
16.4.41	<i>Mohawk</i>	It. dest: <i>Tarigo</i>	off Sfax
27.4.41	<i>Diamond</i>	German aircraft	off Greece
27.4.41	<i>Wryneck</i>	German aircraft	off Greece
2.5.41	<i>Jersey</i>	mine	off Malta
21.5.41	<i>Juno</i>	German aircraft	off Crete
22.5.41	<i>Greyhound</i>	German aircraft	off Crete

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
DESTROYERS			
<i>(Contd.)</i>			
23.5.41	<i>Kashmir</i>	German aircraft	off Crete
23.5.41	<i>Kelly</i>	German aircraft	off Crete
28.5.41	<i>Mashona</i>	German aircraft	west of Ireland
29.5.41	<i>Imperial</i>	German aircraft	off Crete
29.5.41	<i>Hereward</i>	German aircraft	off Crete
29.6.41	<i>Waterhen</i> (R.A.N.)	German aircraft	off Tobruk
11.7.41	<i>Defender</i>	Italian aircraft	off Bardia
23.7.41	<i>Fearless</i>	Italian aircraft	north of Bone
19.8.41	<i>Bath</i> (R.Nor. N)	U.201	North Atlantic
18.10.41	<i>Broadwater</i>	U.101	North Atlantic
23.10.41	<i>Cossack</i>	U.563 (?)	west of Gibraltar
16.12.41	<i>Thracian</i>	beached and captured	Hong Kong
19.12.41	<i>Kandahar</i>	mine	north of Tripoli
19.12.41	<i>Stanley</i>	U.574	east of Azores
9.1.42	<i>Vimiera</i>	mine	Thames estuary
17.1.42	<i>Gurkha</i> (second of the name)	U.133	north of Sidi Barrani
17.1.42	<i>Matabele</i>	U.454	Barents Sea
27.1.42	<i>Thanet</i>	Japanese warships	off Malaya
31.1.42	<i>Belmont</i>	U.82	S.E. of Nova Scotia
12.2.42	<i>Maori</i>	German or Italian aircraft	Malta
27.2.42	<i>Electra</i>	Japanese warships	Java Sea
27.2.42	<i>Jupiter</i>	mine (?)	Java Sea
1.3.42	<i>Encounter</i>	Japanese warships	Java Sea
4.3.42	<i>Stronghold</i>	Japanese warships	south of Java
15.3.42	<i>Vortigern</i>	German E-boat	off Suffolk coast
20.3.42	<i>Heythrop</i>	U.652	north of Bardia
24.3.42	<i>Southwold</i>	mine	off Malta
26.3.42	<i>Jaguar</i>	U.652	north of Sidi Barrani
26.3.42	<i>Legion</i>	German aircraft	Malta
28.3.42	<i>Campbelltown</i>	blockship	St. Nazaire
5.4.42	<i>Tenedos</i>	Japanese aircraft	Colombo
6.4.42	<i>Havock</i>	wrecked	C. Bon
9.4.42	<i>Vampire</i> (R.A.N.)	Japanese aircraft	off Ceylon
9.4.42	<i>Lance</i>	German or Italian aircraft (subsequently towed to U.K. but scrapped)	Malta
11.4.42	<i>Kingston</i>	German or Italian aircraft	Malta
1.5.42	<i>Punjabi</i>	collision	east of Iceland
11.5.42	<i>Kipling</i>	German aircraft	south of Crete
11.5.42	<i>Lively</i>	German aircraft	south of Crete
11.5.42	<i>Jackal</i>	German aircraft	south of Crete
12.6.42	<i>Grove</i>	U.77	north of Sidi Barrani
15.6.42	<i>Airedale</i>	German aircraft	south of Crete
15.6.42	<i>Bedouin</i>	Italian warships and aircraft	south of Pantelleria
15.6.42	<i>Hasty</i>	German E-boat	north of Derna
15.6.42	<i>Nestor</i> (R.A.N.)	German aircraft	N.W. of Derna
16.6.42	<i>Kujawiak</i> (Polish) (ex <i>Oakley</i>)	mine	off Malta
17.6.42	<i>Wild Swan</i>	German aircraft	south of Ireland
12.8.42	<i>Foresight</i>	Italian aircraft	north of Bizerta
19.8.42	<i>Berkeley</i>	German aircraft	off Dieppe
14.9.42	<i>Sikh</i>	shore gunfire	off Tobruk
14.9.42	<i>Zulu</i>	German aircraft	N.W. of Alexandria
14.9.42	<i>Ottawa</i> (R.C.N.)	U.91	North Atlantic
20.9.42	<i>Somali</i>	U.703	Arctic
23.9.42	<i>Voyager</i> (R.A.N.)	wrecked	off Timor
26.9.42	<i>Veteran</i>	U.404	North Atlantic
8.11.42	<i>Broke</i>	shore battery	off Algiers
10.11.42	<i>Martin</i>	U.431	N.E. of Algiers
2.12.42	<i>Quentin</i>	Italian aircraft	off Galita Island
3.12.42	<i>Penylan</i>	German E-boat	off Start Point

Date	Name	Cause	Area
DESTROYERS			
<i>(Contd.)</i>			
9.12.42	<i>Porcupine</i>	U.602 (towed to harbour but subsequently scrapped)	N.E. of Oran
11.12.42	<i>Blean</i>	U.443	west of Oran.
16.12.42	<i>Firedrake</i>	U.211	North Atlantic
18.12.42	<i>Partridge</i>	U.565	west of Oran.
31.12.42	<i>Achates</i>	German destroyers	Arctic
11.3.43	<i>Harvester</i>	U.432	North Atlantic
12.3.43	<i>Lightning</i>	German E-boat	north of Bizerta
11.4.43	<i>Beverley</i>	U.84 (?)	North Atlantic
14.4.43	<i>Eskdale</i> (R. Nor. N)	German E-boat	off Lizard
16.4.43	<i>Pakenham</i>	It. T/B <i>Cassiopea</i> and M/S <i>Cigno</i>	north of Pantelleria
6.9.43	<i>Puckeridge</i>	U.617	off Gibraltar
20.9.43	<i>St. Croix</i> (R.C.N.)	U.305	North Atlantic
26.9.43	<i>Intrepid</i>	German aircraft	Leros
8.10.43	<i>Orkan</i> (Polish) (<i>ex Myrmidon</i>)	U.610	North Atlantic
9.10.43	<i>Panther</i>	German aircraft	Aegean
22.10.43	<i>Huruworth</i>	mine	off Cos
23.10.43	<i>Limbourne</i>	German T/Bs T.22 and T.24	off Brittany coast
24.10.43	<i>Eclipse</i>	mine	Aegean
13.11.43	<i>Dulberton</i>	German aircraft	Aegean
12.12.43	<i>Tynedale</i>	U.593	N.E. of Bougie
12.12.43	<i>Holcombe</i>	U.593	N.E. of Bougie
24.12.43	<i>Hurricane</i>	U.415	North Atlantic
23.1.44	<i>Janus</i>	German aircraft	off Anzio
30.1.44	<i>Hardy</i> (second of the name)	U.278	Arctic
20.2.44	<i>Warwick</i>	U.413	off Cornish coast
25.2.44	<i>Mahratta</i>	U.956	Arctic
25.2.44	<i>Inglefield</i>	German aircraft	off Anzio
30.3.44	<i>Laforey</i>	U.223	north of Sicily
29.4.44	<i>Athabaskan</i> (R.C.N.)	German destroyer	N.E. of Ushant
6.6.44	<i>Svenner</i> (R. Nor. N) (<i>ex Shark</i>)	German T/B	Seine Bay
6.6.44	<i>Wrestler</i>	mine	off Normandy
13.6.44	<i>Boadicea</i>	German aircraft	off Portland Bill
18.6.44	<i>Quail</i>	damaged by mine	Gulf of Taranto
21.6.44	<i>Fury</i>	mine	15.11.43 sank in tow
24.6.44	<i>Swift</i>	mine	Seine Bay
20.7.44	<i>Isis</i>	mine	Seine Bay
3.8.44	<i>Quorn</i>	German small battle unit (<i>Marder</i>)	Seine Bay
27.9.44	<i>Rockingham</i>	mine	off Aberdeen
25.10.44	<i>Skeena</i> (R.C.N.)	wrecked	coast of Iceland
14.12.44	<i>Aldenharn</i>	mine	off Pola
16.1.45	<i>Deiatelnyi</i> (U.S.S.R.) (<i>ex Churchill</i>)	U-boat	Arctic
23.2.45	<i>La Combattante</i> (Free French) (<i>ex Haldon</i>)	mine	off the Wash
SUBMARINES			
10.9.39	<i>Oxley</i>	accidentally by Brit. s/m <i>Triton</i>	S.W. of Stavanger
7.1.40	<i>Undine</i>	German minesweepers	Heligoland Bight
7.1.40	<i>Seahorse</i>	German minesweepers	Heligoland Bight
9.1.40	<i>Starfish</i>	German trawler	Heligoland Bight
10.4.40	<i>Thistle</i>	U.4	N.W. of Stavanger
14.4.40	<i>Tarpon</i>	German trawlers	off southern Norway
? 16.4.40	<i>Sterlet</i>	German A/S craft	off southern Norway

Date	Name	Cause	Area
SUBMARINES			
<i>(Contd.)</i>			
29.4.40	<i>Unity</i>	collision	off Northumbrian coast
5.5.40	<i>Seal</i> (captured)	damaged by mine	Skagerrak
13.6.40	<i>Odin</i>	It: dest: <i>Strale</i>	Gulf of Taranto
16.6.40	<i>Grampus</i>	It: T/Bs <i>Circe, Clio, Polluce</i> and <i>Calliope</i>	off Syracuse
19.6.40	<i>Orpheus</i>	It: dest: <i>Turbine</i>	off Tobruk
6.7.40	<i>Shark</i>	German aircraft and minesweepers (scuttled to avoid capture)	off Stavanger
9.7.40	<i>Salmon</i>	presumed mine	S.W. of Stavanger
16.7.40	<i>Phoenix</i>	It: T/B <i>Albatros</i>	off Augusta
23.7.40	<i>Thames</i>	presumed mine	S.W. of Stavanger
30.7.40	<i>Narwhal</i>	possibly aircraft	off southern Norway
1.8.40	<i>Oswald</i>	It: dest: <i>Vivaldi</i>	east of Sicily
1.8.40	<i>Spearfish</i>	U.34	North Sea
15.10.40	<i>Rainbow</i>	It. S/M <i>Toti</i>	off Calabria
18.10.40	<i>H.49</i>	German A/S craft	off Dutch coast
? .10.40	<i>Triad</i>	unknown	off Libyan coast
? .11.40	<i>Swordfish</i>	unknown	off Ushant
? 6.12.40	<i>Regulus</i>	presumed mine	Otranto Strait
? 18.12.40	<i>Triton</i>	presumed mine	southern Adriatic
12.2.41	<i>Snapper</i>	unknown	Bay of Biscay
? 28.4.41	<i>Usk</i>	presumed mine	off C. Bon
? 13.5.41	<i>Undaunted</i>	presumed mine	off Tripoli
19.7.41	<i>Umpire</i>	collision	off the Wash
20.7.41	<i>Union</i>	It. T/B <i>Circe</i>	off Pantelleria
30.7.41	<i>Cachalot</i>	It. T/B <i>Papa</i>	N.W. of Benghazi
18.8.41	<i>P.32</i>	mine	off Tripoli
23.8.41	<i>P.33</i>	presumed mine	off Tripoli
? .10.41	<i>Tetrach</i>	presumed mine	Sicilian channel
6.12.41	<i>Perseus</i>	mine	off Zante
24.12.41	<i>H.31</i>	unknown	Bay of Biscay
14.1.42	<i>Triumph</i>	presumed mine	Gulf of Athens
13.2.42	<i>Tempest</i>	It. T/B <i>Circe</i>	Gulf of Taranto
23.2.42	<i>P.38</i>	It. T/B <i>Circe</i>	off Tripoli
26.3.42	<i>P.39</i>	German aircraft	Malta
1.4.42	<i>P.36</i>	German or Italian aircraft	Malta
1.4.42	<i>Pandora</i>	German or Italian aircraft	Malta
14.4.42	<i>Upholder</i>	probably It. T/B <i>Pegaso</i>	S.E. of Malta
28.4.42	<i>Urge</i>	mine	off Malta
2.5.42	<i>Jastrzab</i> (Polish) (ex P.551)	accidentally by <i>Seagull</i> and <i>St. Albans</i> (R. Nor. N)	Arctic
8.5.42	<i>Olympus</i>	mine	off Malta
21.6.42	<i>P.514</i>	collision	North Atlantic
6.8.42	<i>Thorn</i>	mine	off coast of Cyrenaica
16.9.42	<i>Talisman</i>	presumed mine	Sicilian channel
23.10.42	<i>Unique</i>	unknown	west of Gibraltar
11.11.42	<i>Unbeaten</i>	accidentally by British aircraft	Bay of Biscay
24.11.42	<i>Utmost</i>	It. T/B <i>Groppa</i>	west of Sicily
8.12.42	<i>Traveller</i>	presumed mine	Gulf of Taranto
12.12.42	<i>P.222</i>	It. T/B <i>Fortunale</i>	Gulf of Naples
25.12.42	<i>P.48</i>	It. T/B <i>Ardente</i>	Gulf of Tunis
31.12.42	<i>P.311</i>	presumed mine	off Maddalena
24.2.43	<i>Vandal</i>	unknown, whilst exercising	Firth of Clyde
? 24.2.43	<i>Urredd</i> (R.Nor.N.) (ex P.41)	presumed mine	off Bodo
10.3.43	<i>Tigris</i>	presumed mine	Gulf of Tunis
14.3.43	<i>Turbulent</i>	presumed mine	off Maddalena
14.3.43	<i>Thunderbolt</i>	It. corv. <i>Cicogna</i>	off Messina Strait
18.4.43	<i>P.615</i>	U.123	off Freetown
18.4.43	<i>Regent</i>	presumed mine	southern Adriatic

Date	Name	Cause	Area
SUBMARINES			
(Contd.)			
21.4.43	<i>Splendid</i>	German dest. <i>Hermes</i>	off Capri
24.4.43	<i>Sahib</i>	It. corvs. <i>Gabbiano</i> and <i>Euterpe</i> and t.b. <i>Climene</i>	off Messina Strait
10.8.43	<i>Parthian</i>	presumed mine	off Brindisi
14.8.43	<i>Saracen</i>	It. corvs. <i>Minerva</i> and <i>Euterpe</i>	off Bastia
3.10.43	<i>Usurper</i>	Ger. A/S vessel UJ.2208	Gulf of Genoa
? 10.10.43	<i>Trooper</i>	presumed mine	Aegean
? 15.11.43	<i>Simoon</i>	presumed mine	off Dardanelles
20.3.44	<i>Graph</i>	wrecked	west coast of Scotland
20.3.44	<i>Stonehenge</i>	unknown	Malacca Strait
28.3.44	<i>Syrtis</i>	mine	off Bodo
? 14.6.44	<i>Sickle</i>	presumed mine	Aegean
27.7.44	B.1 (U.S.S.R.) (ex <i>Sunfish</i>)	accidentally by Br. aircraft	north of Shetlands
22.11.44	<i>Stratagem</i>	Japanese destroyer	Malacca Strait
16.1.45	<i>Porpoise</i>	Japanese aircraft	Malacca Strait
SLOOPS			
30.4.40	<i>Bittern</i>	German aircraft	Namsos, Norway
24.8.40	<i>Penzance</i>	U.37	North Atlantic
15.9.40	<i>Dundee</i>	U.48	North Atlantic
25.5.41	<i>Grimsby</i>	Italian or German aircraft	north of Tobruk
24.6.41	<i>Auckland</i>	German aircraft	off Tobruk
27.11.41	<i>Parramatta</i> (R.A.N.)	U.559	off Tobruk
4.3.42	<i>Yarra</i> (R.A.N.)	Japanese surface vessel	south of Java
6.4.42	<i>Indus</i> (R.I.N.)	Japanese aircraft	off coast of Burma
10.11.42	<i>Ibis</i>	Italian or German aircraft	north of Algiers
27.8.43	<i>Egret</i>	German aircraft	off coast of Portugal
20.2.44	<i>Woodpecker</i>	U.764	North Atlantic
21.8.44	<i>Kite</i>	U.344	Arctic
20.3.45	<i>Lapwing</i>	U.716	off Kola Inlet
CUTTERS			
31.1.42	<i>Culver</i>	U.105	North Atlantic
8.11.42	<i>Hariland</i>	shore battery	Oran
8.11.42	<i>Walney</i>	shore battery	Oran
FRIGATES			
22.9.43	<i>Ithen</i>	U.952 or U.260	North Atlantic
7.1.44	<i>Tweed</i>	U.305	North Atlantic
1.3.44	<i>Gould</i>	U.358	North Atlantic
7.5.44	<i>Valleyfield</i> (R.C.N.)	U.548	North Atlantic
8.6.44	<i>Lawford</i>	German aircraft	Seine Bay
15.6.44	<i>Mourne</i>	U.767	off Lizard
15.6.44	<i>Blackwood</i>	U.764	off Portland
22.8.44	<i>Bickerton</i>	U.354	N.W. of North Cape
6.12.44	<i>Bullen</i>	U.775	off N.W. Scotland
26.12.44	<i>Capel</i>	U.486	off Cherbourg
29.4.45	<i>Goodall</i>	U.968 (?)	off Kola Inlet
CORVETTES			
23.6.40	<i>Pathan</i> (R.I.N.)	mine	off Bombay
6.9.40	<i>Godetia</i>	collision	off N. Ireland
10.6.41	<i>Pintail</i>	mine	off Humber
12.8.41	<i>Picoles</i>	U.568	North Atlantic
23.8.41	<i>Zinnia</i>	U.564 (?)	North Atlantic
19.9.41	<i>Levis</i> (R.C.N.)	U.74	North Atlantic
14.10.41	<i>Fleur de Lys</i>	U.206	west of Gibraltar
16.10.41	<i>Gladholus</i>	U.568 (?)	North Atlantic
7.12.41	<i>Windflower</i> (R.C.N.)	collision	North Atlantic
24.12.41	<i>Salvia</i>	U.568	N.E. of Mersa Matruh
5.2.42	<i>Arbutus</i>	U.136	North Atlantic
8.2.42	<i>Alysse</i> (Free French)	U.654	North Atlantic

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
CORVETTES			
<i>(Contd.)</i>			
11.2.42	<i>Spikenard</i> (R.C.N.)	U.136	North Atlantic
9.4.42	<i>Hollyhock</i>	Japanese aircraft	off Ceylon
5.5.42	<i>Auricula</i>	mine	off Madagascar
9.6.42	<i>Mimosa</i> (Free French)	U.124	North Atlantic
11.9.42	<i>Charlottetown</i> (R.C.N.)	U.517	St. Lawrence River
9.11.42	<i>Gardenia</i>	collision	west of Oran
18.11.42	<i>Montbretia</i> (R.Nor.N.)	U.624	North Atlantic
9.12.42	<i>Marigold</i>	German or Italian aircraft	west of Algiers
19.12.42	<i>Snapdragon</i>	German aircraft	off Benghazi
30.1.43	<i>Samphire</i>	It. S/M <i>Platino</i>	N.E. of Algiers
6.2.43	<i>Louisburg</i> (R.C.N.)	German aircraft	N.E. of Oran
9.2.43	<i>Erica</i>	mine (British)	off Benghazi
22.2.43	<i>Weyburn</i> (R.C.N.)	mine	Strait of Gibraltar
20.9.43	<i>Polyanthus</i>	U.952 or U.641	North Atlantic
9.3.44	<i>Asphodel</i>	U.575	North Atlantic
8.8.44	<i>Regina</i> (R.C.N.)	U.667	off Cornish coast
21.8.44	<i>Alberni</i> (R.C.N.)	mine	off Isle of Wight
21.8.44	<i>Orchis</i>	mine	off Normandy coast
1.9.44	<i>Hurst Castle</i>	U.482	off N. Ireland
26.10.44	<i>Rose</i> (R.Nor.N.)	collision	North Atlantic
25.11.44	<i>Shawinigan</i> (R.C.N.)	U.1228	off Newfoundland
12.12.44	<i>Tunsberg Castle</i> (R.Nor.N.) (ex <i>Shrewsbury</i> <i>Castle</i>)	mine	off N. Russia
13.2.45	<i>Denbigh Castle</i>	U.992	off Kola Inlet
17.2.45	<i>Bluebell</i>	U.711	N.E. of Kola Inlet
20.2.45	<i>Vervain</i>	U.1208	off Waterford, Eire
22.2.45	<i>Trentonian</i> (R.C.N.)	U.1004	off Falmouth
FLEET MINESWEEPERS			
3.2.40	<i>Sphinx</i>	German aircraft	off east coast of Scotland
30.4.40	<i>Dunoon</i>	mine	off Lowestoft
1.6.40	<i>Skipjack</i>	German aircraft	Dunkirk
16.10.40	<i>Dundalk</i>	mine	off Harwich
31.1.41	<i>Huntley</i>	Italian aircraft	off Mersa Matruh
3.5.41	<i>Fermoy</i>	German or Italian aircraft	Malta
7.5.41	<i>Stoke</i>	German or Italian aircraft	Tobruk
20.5.41	<i>Widnes</i>	German aircraft	Crete
5.4.42	<i>Abingdon</i>	German or Italian aircraft	Malta
27.5.42	<i>Fitzroy</i>	mine	off Yarmouth
24.6.42	<i>Gossamer</i>	German aircraft	Kola Inlet
5.7.42	<i>Niger</i>	mine (British)	off Iceland
20.9.42	<i>Leda</i>	U.435	Arctic
9.11.42	<i>Cromer</i>	mine	off Mersa Matruh
15.11.42	<i>Algerine</i>	It. S/M <i>Ascianghi</i>	off Bougie
1.12.42	<i>Armidale</i> (R.A.N.)	Japanese aircraft	off Timor
31.12.42	<i>Bramble</i>	German destroyer	Arctic
2.1.43	<i>Alarm</i>	Italian or German aircraft	Bone
20.6.43	<i>Wallaroo</i> (R.A.N.)	collision	west coast of Australia
11.10.43	<i>Hythe</i>	U.371	off Bougie
21.10.43	<i>Chedabucto</i> (R.C.N.)	collision	St. Lawrence River
23.10.43	<i>Cromarty</i>	mine	off Sardinia
22.11.43	<i>Hebe</i>	mine	Bari
18.12.43	<i>Felixstowe</i>	mine	off Sardinia
31.12.43	<i>Clacton</i>	mine	off Corsica
4.5.44	<i>Elgin</i>	mine	off Portland
6.7.44	<i>Magic</i>	German small battle unit (Marder)	Seine Bay
6.7.44	<i>Cato</i>	German small battle unit (Marder)	Seine Bay

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
FLEET MINESWEEPERS			
<i>(Contd.)</i>			
8.7.44	<i>Pylades</i>	German small battle unit (Marder)	Seine Bay
22.8.44	<i>Loyalty</i>	U.480	off Nab Tower
27.8.44	<i>Britomart</i>	accidentally by British aircraft	off Normandy coast
27.8.44	<i>Hussar</i>	accidentally by British aircraft	off Normandy coast
18.10.44	<i>Geelong</i> (R.A.N.)	collision	off New Guinea
24.12.44	<i>Clayoquot</i> (R.C.N.)	U.806	off Nova Scotia
12.1.45	<i>Regulus</i>	mine	off Corfu
17.3.45	<i>Guyborough</i> (R.C.N.)	U.878	Bay of Biscay
16.4.45	<i>Esquimalt</i> (R.C.N.)	U.190	off Nova Scotia
24.7.45	<i>Squirrel</i>	mine	off the Kra Isthmus
26.7.45	<i>Vestal</i>	Japanese aircraft	off the Kra Isthmus
MONITOR			
24.2.41	<i>Terror</i>	German aircraft	off Derna
MINELAYERS			
18.5.40	<i>Princess Victoria</i>	mine	off the Humber
27.11.40	<i>Port Napier</i>	burnt	Loch Alsh
25.10.41	<i>Latona</i>	German aircraft	off Bardia
19.12.41	<i>Redstart</i>	scuttled	Hong Kong
14.2.42	<i>Kung Wo</i>	Japanese aircraft	off Singapore
25.1.43	<i>Corncrake</i>	founded	N. Atlantic
1.2.43	<i>Welshman</i>	U.617	off Bardia
9.9.43	<i>Abdiel</i>	mine	Taranto
AUXILIARY ANTI-AIRCRAFT SHIPS			
29.5.40	<i>Crested Eagle</i>	German aircraft	off Dunkirk
4.7.40	<i>Foyle Bank</i>	German aircraft	Portland
20.3.41	<i>Helvellyn</i>	German aircraft	London
11.11.42	<i>Tynwald</i>	It. S/M <i>Argo</i> (or possibly mine)	Bougie
29.1.43	<i>Pozarica</i>	damaged by German air- craft (capsized in har- bour 13.2.43)	off Bougie
2.9.44	<i>Glen Avon</i>	founded	Seine Bay
ARMED MERCHANT CRUISERS			
23.11.39	<i>Rawalpindi</i>	<i>Scharnhorst</i>	S.E. of Iceland
6.6.40	<i>Carinthia</i>	U.46	N.W. of Ireland
13.6.40	<i>Scotsoun</i>	U.25	N.W. of Ireland
15.6.40	<i>Andania</i>	UA	S.E. of Iceland
10.8.40	<i>Transylvania</i>	U.56	off northern Ireland
27.8.40	<i>Dunvegan Castle</i>	U.46	off N.W. Ireland
3.11.40	<i>Laurentic</i>	U.99	west of Ireland
3.11.40	<i>Patroclus</i>	U.99	west of Ireland
5.11.40	<i>Jervis Bay</i>	<i>Admiral Scheer</i>	North Atlantic
2.12.40	<i>Forfar</i>	U.99	North Atlantic
4.4.41	<i>Voltaire</i>	German raider <i>Thor</i>	central Atlantic
6.4.41	<i>Comorin</i>	burnt	North Atlantic
13.4.41	<i>Rajputana</i>	U.108	Denmark Strait
13.5.41	<i>Salopian</i>	U.98	North Atlantic
5.4.42	<i>Hector</i>	Japanese aircraft	Colombo
SUBMARINE AND DESTROYER DEPOT SHIPS			
30.6.42	<i>Medway</i>	U.372	off Alexandria
11.11.42	<i>Hecla</i>	U.505	west of Gibraltar

Table II. Nominal List of Major Allied Warships Lost while Operating under British Control 3rd September 1939—15th August 1945

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
BATTLESHIP			
6.44	<i>Courbet</i> (French)	used as blockship	Normandy beaches
CRUISER			
6.44	<i>Sumatra</i> (Dutch)	used as blockship	Normandy beaches
DESTROYERS AND TORPEDO BOATS			
4.5.40	<i>Grom</i> (Polish)	German aircraft	off Narvik
14.12.40	<i>Branlebas</i> (French)	foundered	off the Lizard
13.11.42	<i>Isaac Sweers</i> (Dutch)	U.431	N.W. of Algiers
26.9.43	<i>Queen Olga</i> (Greek)	German aircraft	Leros
10.6.44	<i>Mistral</i> (French)	shore battery	off Normandy
MINELAYERS			
22.5.41	<i>Nautilus</i> (Dutch)	collision	off the Humber
4.6.41	<i>Van Meerland</i> (Dutch)	mine	Thames estuary
SUBMARINES			
14.5.40	<i>Doris</i> (French)	U.9	Dogger Bank
25.5.40	<i>Orzel</i> (Polish)	mine	off S.W. Norway
13.6.40	O.13 (Dutch)	mine	off S.W. Norway
21.11.40	O.22 (Dutch)	German A/S vessels UJ.177 and 1102	Skagerrak
29.12.40	<i>Proteus</i> (Greek)	It. T.B. <i>Antares</i>	southern Adriatic
7.1.41	<i>Narval</i> (Free French)	It. T.B. <i>Clio</i>	off Tobruk
19.2.42	<i>Surcouf</i> (Free French)	collision	Caribbean
4.4.42	<i>Glaucos</i> (Greek)	German or Italian aircraft	Malta
16.11.42	<i>Triton</i> (Greek)	German A/S vessel UJ.2102	Aegean
14.9.43	<i>Katsonis</i> (Greek)	German A/S vessel UJ.2101	Aegean
1.1.44	<i>Axum</i> (Italian)	wrecked	off Corinth
3.1.44	<i>Protée</i> (French)	unknown, possibly aircraft	south of Toulon
8.7.44	<i>Perle</i> (French)	accidentally by Br. aircraft	North Atlantic

Table III. Summary of British Commonwealth Major Warship Losses 3rd September 1939-2nd September 1945
 (including warships lent to and manned by Allied navies, and Allied warships operating under British control)

Analysis by Causes and Areas

Cause of loss	Area													TOTAL					
	Battleship	Battle-cruiser	Aircraft carrier	Auxiliary Aircraft carrier	Auxiliary fighter catapult ship	Cruiser	Destroyer	Submarine	Sloop	Cutter	Frigate	Corvette	Minesweeper		Monitor	Minelayer	Auxiliary anti-aircraft ship	Armed Merchant Cruiser	Destroyer and Submarine Depot ship
Surface vessel	—	1	1	—	—	5	15	30	1	—	—	—	1	—	—	—	2	—	56
Submarine	2	—	3	2	1	8	38	5	6	1	10	22	7	—	1	1	10	2	119
Aircraft	1	1	1	—	1	11	51	7	6	—	1	4	11	1	2	4	1	—	103
Mine	—	—	—	—	—	2	26	29	—	—	—	8	12	—	3	—	—	—	79
E-boat	—	—	—	—	—	1	7	—	—	—	—	—	—	—	—	—	—	—	9
Merchant raider	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	1	—	2
Small Battle Unit	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	2
Wreck and Blockship	1	—	—	—	—	3	7	2	—	—	—	4	3	—	2	1	—	—	5
Collision	—	—	—	—	—	1	5	4	—	—	—	—	3	—	1	—	—	—	16
Explosion and Burnt	—	—	—	1	—	1	1	—	—	—	—	—	2	—	1	—	—	—	18
Accidentally by own forces	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	4
Shore Battery	—	—	—	—	—	—	—	5	—	—	—	—	—	—	—	—	—	—	7
Unknown	—	—	—	—	—	—	3	8	—	—	—	—	—	—	—	—	—	—	5
TOTAL	4	2	5	3	2	33	154	90	13	3	11	38	39	1	10	6	15	2	431

Area	Area													TOTAL					
	North Atlantic	Arctic	Home Waters	South Atlantic	Mediterranean	Indian Ocean	Pacific	Other	Unknown	Other	Other	Other	Other						
North Atlantic	—	—	1	2	1	—	—	12	5	1	4	17	5	—	1	—	10	1	84
Arctic	—	—	—	—	—	—	1	1	2	—	2	3	3	—	—	—	—	—	24
Home Waters	2	—	1	1	—	—	22	5	—	—	5	8	12	—	4	4	4	—	119
South Atlantic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mediterranean	—	—	2	—	—	—	52	—	4	2	—	7	14	1	3	2	—	1	169
Indian Ocean	—	—	—	—	—	—	3	—	1	—	—	—	—	—	—	—	—	—	17
Pacific	—	—	—	—	—	—	3	—	1	—	—	—	—	—	—	—	—	—	18
TOTAL	4	2	5	3	2	33	154	90	13	3	11	38	39	1	10	6	15	2	431

Table IV. *British Auxiliary and Minor Warship Losses*

NOTE:

This table includes British vessels on loan to Dominion and Allied Navies but not those owned by those services. It excludes merchant vessels under charter to the Admiralty, which losses are included in the Appendices to these volumes giving the merchant ship losses, and also certain categories of small vessels such as harbour service craft.

<i>Type</i>	<i>Number lost</i>	<i>Remarks</i>
Ocean boarding vessels	5	<i>Camito, Crispin, Lady Somers, Malvernian, Manistee</i>
Armed boarding vessels	5	<i>Chakdina, Chantala, King Orry, Rosaura, Van Dyck</i>
Convoy service ships	2	<i>Chakla, Fiona</i>
'Freighters' (Q-ships)	2	<i>Cape Howe, Williamette Valley</i>
Rescue ship	1	<i>St Sunniva</i>
Auxiliary supply ship	1	<i>Breconshire</i>
Mine destructor ships	3	<i>Corburn, Corfield, Queenworth</i>
River gunboats	11	8 lost in the Far East
Netlayers	3	
'British Yard' and Motor minesweepers	24	
Auxiliary minesweepers	22	12 of these requisitioned and lost in the Far East
Auxiliary A/S and Patrol vessels	8	7 of these requisitioned and lost in the Far East
Trawlers	251	
Drifters	107	
Whalers	36	
Tugs	55	
Yachts and schooners	38	mostly of small tonnage
Motor fishing vessels	3	
Base and Guard ships	2	
Salvage vessel	1	
Coastal craft	226	Includes 115 M.T.Bs, 79 M.Ls, 28 M.G.Bs, 1 S.G.B.
Midget submarines	40	Includes 7 'X craft', 18 'Chariots', 5 'Welman' craft
ex-battleship	1	<i>Centurion</i> , sunk as blockship
Special service vessels	93	about 70 of these were sunk as blockships. Most of the remainder were of very small tonnage
Naval store ships and carriers	4	<i>Ulster Prince</i> and 3 of small tonnage
Colliers and coal hulks	6	
Naval armament vessels	2	of small tonnage
Degaussing ships	2	
Examination vessels	6	of small tonnage
Tankers and oilers	18	
Distillery ship	1	
Water boats and carriers	8	mostly of small tonnage
F.A.A. target ship	1	
Train Ferry	1	<i>Daffodil</i>
Transport and ferry service vessels	10	mostly of small tonnage
Armed Traders	5	all lost in the Far East
Boom Defence, Barrage and Gate vessels	23	
Balloon barrage vessels	6	
Mooring vessels	2	

Table V. *British Landing Ships and Landing Craft Losses*

NOTE:

This table includes British Landing Ships and Craft on loan to Dominion and Allied Navies, but not those owned by those services.

<i>Type</i>	<i>Number lost</i>	<i>Remarks</i>
Landing Ships Infantry (Large)	4	<i>Karanja, El Hind, Empire Broadsword Empire Javelin</i>
Landing Ships Infantry (small)	2	<i>Prince Philippe, Prince Leopold</i>
Landing Ships Tank (Mk II)	14	
Landing Craft Assault	371	
Landing Craft Emergency Repair	6	
Landing Craft Flak	4	
Landing Craft Gun	9	
Landing Craft Headquarters	1	
Landing Craft Infantry (Large)	9	
Landing Craft Infantry (Small)	8	
Landing Craft Mechanised	274	
Landing Craft Personnel (all types)	265	
Landing Craft Support (all types)	38	
Landing Craft Tank (all types)	134	
Landing Craft Vehicle (Personnel)	78	
Landing Barges (all types)	109	

APPENDIX U

Table I. Coastal Command of the Royal Air Force, Establishment and Expansion, 5th June, 1944-1st May, 1945

	5th June, 1944		1st January, 1945		1st May, 1945	
	Squadrons	aircraft	Squadrons	aircraft	Squadrons	aircraft
<i>Anti-U-boat</i>						
Very long range	3	45	2	30	—	—
Long range	11	166	11	163	15	225
Medium range	5½	81	6	95	8	125
Short range	4½	56	2½	30	2½	30
Flying boats	10½	127	10½	127	11	131
<i>Anti-Shipping</i>						
All types of aircraft, including long-range fighters and those armed with torpedo, rocket projectiles, and cannon	15	278	15½	290	14½	274
TOTAL	49½	753	47½	735	51	785

NOTE

- (1) The above table excludes those squadrons which were not operational through re-equipment or training, and it also excludes photo-reconnaissance, air-sea rescue and meteorological squadrons.
- (2) Coastal Command achieved its greatest expansion in February 1945 when its Battle Line consisted of 54 Squadrons of 818 aircraft.

Table II. Coastal Command of the Royal Air Force Functions of Squadrons on 1st May, 1945

	Anti-U-boat		Anti-shipping	
	Squadrons	aircraft	Squadrons	aircraft
No. 15 Group	7	100	—	—
No. 16 Group	2½	28	5	94
No. 18 Group	8	105	9½	180
No. 19 Group	13	183	—	—
Iceland	2	30	—	—
Gibraltar	2	35	—	—
Azores	2	30	—	—
TOTAL	36½	511	14½	274

NOTE

- (1) In addition, there were 16½ squadrons of 289 aircraft employed on photographic reconnaissance, meteorological and air-sea rescue duties.
- (2) Out of the total of 67½ squadrons in Coastal Command on 1st May 1945, there were 6½ U.S. squadrons, 4 R.C.A.F., 4 R.A.A.F., 3 Norwegian A.F., 2 F.A.A., 1 R.N.Z.A.F., 1 S.A.A.F., 1 Czech and 1 Polish Squadron.

APPENDIX V

Particulars of German Minor War Vessels

German Designation	British Designation	Function	Displacement,* Speed, Typical Armament, etc.
AF AFP A-MFP HS-Boot	Artillery ferry barge	Transport and landing of troops, escort duties. Could be fitted for minelaying	335-416 tons, 8-9½ knots, 1-3.7 cm. A-A., 2-2 cm. A-A. quadruples, 4 rocket dischargers
	Harbour defence vessel	Harbour defence	No standard type. Included yachts and many other small craft
	Infantry landing craft	Transport and landing of troops and equipment	18 tons, 11 knots, 1-2 cm. A-A., 1 MG., 1 rocket discharger
	Gunboat	Bombardment and escort duties	1,420-1,760 tons, 14½-16 knots, 2-10.5 cm. A-A., 4-3.7 cm. A-A., 3-2 cm. A-A., quadruple, 1-2 cm. A-A. twin
KFK	Armed fishing vessel	Patrol, escort and anti-submarine duties	112 tons, 8-9 knots, 1-3.7 cm., 1-2 cm. A-A. twin, 2 rocket dischargers
KT-Schiff	War freighter	Transport of men and stores, anti-submarine duties	1,200 tons, 14½ knots, 1-8.8 cm., 1-3.7 cm. A-A. twin, 1-2 cm. A-A. quadruple, 3-2 cm. A-A. single, depth-charge rails and throwers
M-Boot	Minesweeper	Minesweeping, escort, mine-laying and anti-submarine duties	722-888 tons, 17-18 knots, 2-10.5 cm., 1-3.7 cm. A-A., 1-2 cm. A-A. quadruple, 4-2 cm. A-A. twin, 4 rocket dischargers
MAL	Naval gun or flak barge	Transport and landing of troops and equipment, mine-laying and harbour defence	185 tons, 6½ knots, 2-10.5 cm., 2-3.7 cm. A-A., 1-2 cm. A-A. quadruple 4 rocket dischargers
MFK MFP	Motor fishing vessel Naval ferry barge	As for KFK above Transport and landing of troops and equipment, escort duties and minelaying	As for KFK above 150-250 tons, 10 knots, 1-8.8 cm., 1-3.7 cm. A-A., 1-2 cm. A-A. quadruple 1-2 cm. A-A. twin, 2 rocket dischargers

APPENDIX V

MNL	Naval supply lighter	Transport of troops and supplies in protected waters	117 tons, 9 knots 1-3.7 cm. A-A., 1-2 cm. A-A. quadruple, 2 rocket dischargers
R-Boot	Motor minesweeper	Minesweeping, minelaying, escort and anti-submarine duties	115-189 tons, 21-25 knots, 1-3.7 cm. A-A., 3-2 cm. A-A. twin
S-Boot	E-boat or motor torpedo-boat	The principal offensive German coastal craft. Attacks on convoys; minelaying	95-110 tons, 31 $\frac{1}{2}$ -41 $\frac{1}{2}$ knots, 2 bow torpedo tubes, 1-4 cm. A-A., 1-2 cm. A-A. twin, 1-2 cm. single, 9 machine-guns, 1 rocket discharger
SF	Sictel ferry	Transport and landing of troops and equipment; minelaying	137-170 tons, 7 $\frac{1}{2}$ knots,
T-Boot	Torpedo-boat	Offensive sweeps and patrols, escort duties and minelaying	1-4 cm. A-A., 1-2 cm. A-A. twin, 2 rocket dischargers 1,132-2,587 tons, 33-37 $\frac{1}{2}$ knots, 4-10.5 cm., 2-3.7 cm. twin, 1-2 cm. A-A. quadruple 2-2 cm. A-A. twin, 1-2 cm. A-A. single, 2 sets of triple torpedo tubes
TA-Boot	Ex-foreign torpedo-boat	As for T-Boot	542-2,580 tons, 25-39 knots, 2-10 cm. A-A., 4-3.7 cm. A-A., 2-2 cm. A-A. quadruple, 4-2 cm. A-A. single, 2 sets of triple tubes
UJ	Anti-submarine vessel	Anti-submarine escort	No standard type. Included trawlers, war freighters, whalers, armed fishing vessels, etc.
V-Boot	Patrol vessel	Escort and patrol duties	No standard type. Included trawlers and armed fishing vessels.

* = Displacement when complete with stores, fuel and ammunition.

NOTE: The German light naval craft were described in British contemporary reports only by a few designations, e.g. E-boat covered all offensive torpedo craft, R-boat all small minesweepers, etc. The contemporary British descriptions were, moreover, often incorrect.

APPENDIX W

Particulars of German 'Small Battle Units'

'MARDER' (Engl. Marten)

A one-man weapon consisting of an electrically propelled carrier body with an underslung explosive torpedo. It was steered by a pilot who sat in a plexi-glass covered cockpit on the carrier, the explosive torpedo being released at short range. The weight of the carrier with the explosive torpedo was 2·8 tons, the maximum speed 2·5 knots and the range 35 miles. It was originally designed for use from a beach against an enemy landing. A later model was fitted with a small diving tank which enabled it to submerge to a maximum depth of 30 metres.

'MOLCH' (Engl. Salamander)

An early type of one-man midget submarine intended for offensive operations near the coast. It was designed for submerged travel only, and was driven by batteries and a motor. Its displacement was 10·5 tons and length 35·4 feet, and it carried two underslung torpedoes. Endurance was 43 miles at 5 knots and diving depth 40 metres. Total number built was 390, but there is no record of them being used against the Allied invasion fleet off the coast of France. A large number were sent to Norway and Denmark for use against an invasion of those countries.

'BIBER' (Engl. Beaver)

A one-man midget submarine capable of both surface and submerged travel. Its displacement was 6 tons and length 28·5 feet. Propulsion on the surface was by petrol engine, and when submerged by batteries and a motor. Surface endurance was 13 hours at 7 knots, and submerged 1·5 hours at 6 knots. It could carry two torpedoes or two mines. It was first used against Allied shipping off the Normandy coast at the end of August 1944, but had little success. Subsequently it was used more successfully for minelaying in the Scheldt. A total of 324 were built.

'HECHT' (Engl. Pike)

A two-man midget submarine, also known as U-boat Type XXVII, originally intended for carrying limpet mines but subsequently redesigned as a torpedo carrier for use against shipping under way off the coast. It was capable of both surface and submerged travel, with displacement of 12 tons and length 46 feet. Propulsion, surfaced and submerged, was by electric motor, with a range of 60 miles at 4 knots or 42 miles at its maximum speed of 6 knots. Maximum diving depth was 50 metres, and it could carry one torpedo and one mine. A total of 53 were built, but there is no record of them ever being used operationally.

'SEEHUND' (Engl. Seal)

A two-man midget submarine also known as U-boat Type XXVIIB, capable of both surface and submerged travel, designed for operating at some distance from an advanced base. Propulsion, when surfaced, was by diesel engine, and when submerged by battery and motor. The battery could be recharged while at sea. Displacement was 12·3 tons surfaced 15 tons submerged, and length was 39 feet. Endurance when surfaced was 54 hours at 5 knots, and when submerged was 20 hours at 3 knots. Maximum speed surfaced was 8 knots for 15 hours, and when submerged was 5 knots for 4 hours. Maximum diving depth was 50 metres. It could carry two underslung electric torpedoes and attack either on the surface or when submerged. It was the latest type of midget submarine to become operational, and was first used against Allied traffic in the Scheldt on the 1st of January 1945. A total of about 250 Seehunde were built, but production was badly delayed by air raids and shortage of supplies. It was relatively immune to depth charge attack, being tossed aside by the explosion without damage.

'LINSE' (Engl. Lentil)

A radio-controlled motor boat which was a development from the Italian one-man assault boat. A 'Linse' unit comprised one control and two explosive motor boats, each of the latter carrying a 300 kilogram charge in the stern. Each explosive motor boat carried a pilot, who steered the boat to within striking distance of the target. The pilot then jumped overboard and his boat was directed by radio control to the target from the control boat, which also had the task of picking up the pilot. The displacement was 1·2 tons, and it was fitted with two petrol engines giving a maximum speed of 31 knots for 2 hours, or a cruising speed of 15 knots for 4·5 hours. 'Linsen' were first used in the Normandy invasion area in June 1944.

'DACKEL' (Dachshund)

A long-range pattern-running torpedo, of length 33 feet, speed 9 knots and running range 57,000 metres, the initial straight run being 27,000 metres. It was estimated that if fired from Havre it had sufficient range to reach the Allied disembarkation beaches off the Orne, and the naval bombarding ships off Courseulles, 18 and 24 miles distant respectively. First used in early August 1944.

APPENDIX X

German U-Boat Strength

July, 1944–April, 1945

Date	Operational	Training and trials	Total	New Boats commissioned in previous quarter
July 1944. .	188	246	434	53
October 1944 .	141	260	401	49
January 1945 .	144	281	425	65
+April 1945 .	166	263	429	Not known

+ Figures for 1945 are approximate only.

Principal Characteristics of German U-boats Type XXI and Type XXIII

<i>Type XXI</i>	<i>Type XXIII</i>
Atlantic U-boat of new design. A total of 123 were built by the end of the war.	Coastal U-boat of new design. A total of 59 were built by the end of the war.
Displacement:	
Surfaced 1621 tons	232 tons
Submerged 1819	256 tons
Maximum speeds:	
(laden)	
Surfaced 15½ knots	9½ knots
Submerged 17 knots (for one hour)	12½ knots (for one hour)
Endurance:	
Surfaced	
(cruising) 15,500 miles at 10 knots	4,300 miles at 6 knots
(cruising) 11,150 miles at 12 knots	2,800 miles at 8 knots
(maximum sustained) 5,100 miles at 15½ knots	1,350 miles at 9½ knots
Submerged { 365 miles at 5 knots	175 miles at 4 knots
(on electric { 285 miles at 6 knots	113 miles at 6 knots
motor) { 170 miles at 8 knots	70 miles at 8 knots
{ 110 miles at 10 knots	43 miles at 10 knots
Diving depth 376 feet	330 feet
Armament:	
torpedo tubes 6 bow	2 bow
outfit 20 torpedoes (maximum)	2 torpedoes
guns 1-37 mm A-A	none
1-29 mm A-A	
crew 57	14

APPENDIX XX

German Warship Losses, 1939–1945

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
BATTLESHIPS			
27.5.41	<i>Bismarck</i>	surface action with R.N. ships and F.A.A. aircraft	North Atlantic
12.11.44	<i>Tirpitz</i>	R.A.F. aircraft	Tromsø, Norway
BATTLE CRUISERS			
26.12.43	<i>Scharnhorst</i>	surface action with R.N. ships	Arctic
28.3.45	<i>Gneisenau</i>	badly damaged by R.A.F. aircraft at Kiel on 25.2.42. Moved to Gdynia and sunk as a blockship	Gdynia
POCKET BATTLESHIPS			
17.12.39	<i>Admiral Graf Spee</i>	scuttled after action with <i>Exeter</i> , <i>Ajax</i> and <i>Achilles</i> on 13.12.39	off the River Plate
9.4.45	<i>Admiral Scheer</i>	R.A.F. aircraft	Kiel
3.5.45	<i>Lützow</i>	beached after damage by R.A.F. aircraft 16.4.45 and subsequently scuttled	Swinemünde
OLD BATTLESHIPS			
18.12.44	<i>Schleswig Holstein</i>	R.A.F. aircraft	Gdynia
4.5.45	<i>Schlesien</i>	mine	Swinemünde
HEAVY CRUISERS			
9.4.40	<i>Blücher</i>	Norwegian gun and torpedo batteries	Oslo fiord
10.4.45	<i>Seydlitz</i> (never completed)	blown up by the Germans	Königsberg
3.5.45	<i>Admiral Hipper</i>	severely damaged by R.A.F. aircraft 9.4.45, and subsequently scuttled	Kiel
LIGHT CRUISERS			
10.4.40	<i>Karlsruhe</i>	badly damaged by S/M <i>Truant</i> 9.4.40. Sunk by Germans next day	off Kristiansand, Norway
10.4.40	<i>Königsberg</i>	F.A.A. aircraft	Bergen
21/22.12.43	<i>Niobe</i> (ex-Yugoslav <i>Dalmacija</i>)	British M.T.Bs	Adriatic
30.3.45	<i>Köln</i>	U.S. aircraft	Wilhelmshaven
3.5.45	<i>Emden</i>	severely damaged by R.A.F. aircraft 9 and 13.4.45 and subsequently scuttled	Kiel
AIRCRAFT CARRIER			
24.4.45	<i>Graf Zeppelin</i> (never completed)	scuttled	Stettin

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
DESTROYERS			
22.2.40	<i>Leberecht Maas</i> (Z.1)	accidentally bombed by German aircraft and probably mined in British minefield while taking avoiding action	North Sea
22.2.40	<i>Max Schultz</i> (Z.3)	ditto	North Sea
10.4.40	<i>Anton Schmidt</i> (Z.22)	surface action with R.N. ships in First Battle of Narvik	Narvik
10.4.40	<i>Wilhelm Heidkamp</i> (Z.21)	ditto	Narvik
13.4.40	<i>Bernd von Arnim</i> (Z.11)	damaged in First Battle of Narvik, sunk in Second Battle of Narvik	Narvik
13.4.40	<i>Dieter von Roeder</i> (Z.17)	ditto	Narvik
13.4.40	<i>Erich Koellner</i> (Z.13)	ditto	Narvik
13.4.40	<i>Georg Thiele</i> (Z.2)	ditto	Narvik
13.4.40	<i>Hans Lüdemann</i> (Z.18)	ditto	Narvik
13.4.40	<i>Hermann Kühne</i> (Z.19)	ditto	Narvik
13.4.40	<i>Erich Giese</i> (Z.12)	sunk in Second Battle of Narvik	Narvik
13.4.40	<i>Wolfgang Zenker</i> (Z.9)	ditto	Narvik
14.1.42	<i>Bruno Heinemann</i> (Z.8)	mine	off Ostend
29.3.42	Z.26	surface action with <i>Trinidad, Fury and Eclipse</i>	Arctic
2.5.42	<i>Herman Schoemann</i> (Z.7)	surface action with <i>Edinburgh</i>	Arctic
31.12.42	<i>Friedrich Eckholdt</i> (Z.16)	surface action with <i>Sheffield</i>	Arctic
7.5.43	<i>Hermes</i> (ZG.3) (ex-Greek <i>Basilieus Georgios I</i>)	R.A.F. aircraft	Eastern Mediterranean
28.12.43	T.25	<i>Glasgow</i> and <i>Enterprise</i>	Bay of Biscay
28.12.43	T.26	<i>Glasgow</i> and <i>Enterprise</i>	Bay of Biscay
28.12.43	Z.27	<i>Glasgow</i> and <i>Enterprise</i>	Bay of Biscay
8.3.44	TA.15 (ex-Italian <i>Crispi</i>)	R.A.F. aircraft	off Crete
26.4.44	T.29	<i>Haida</i> (R.C.N.)	English Channel
29.4.44	T.27	<i>Haida</i> (R.C.N.)	English Channel
9.6.44	ZH.1 (ex-Dutch <i>Gerard Callenburgh</i>)	destroyers of the 10th D.F.	off Ushant
9.6.44	Z.32	destroyers of the 10th D.F.	off Ushant
20.6.44	T.31	Russian M.T.B.	Gulf of Viborg
18.8.44	T.30	German mine	Gulf of Finland
18.8.44	T.32	German mine	Gulf of Finland
20.8.44	T.22	mine	Gulf of Finland
21.8.44	Z.23	R.A.F. aircraft	off La Pallice
24/25.8.44	T.24	R.A.F. aircraft	off Le Verdon
24/25.8.44	Z.24	R.A.F. aircraft	off Le Verdon
24.8.44	Z.37	scuttled	Bordeaux
4.9.44	TA.33 (never completed, ex-Italian <i>Corsaro, ex-Squadrista</i>)	U.S. aircraft	Genoa
15.9.44	TA.14 (ex-Italian <i>Turbine</i>)	U.S. aircraft	Salamis
20.11.44	T.34	probably Russian mine	Baltic
12.12.44	Z.35	German mine	off Reval
12.12.44	Z.36	German mine	off Reval
17.2.45	TA.44 (ex-Italian <i>Pigafetta</i>)	aircraft	Trieste
6.3.45	Z.28	R.A.F. aircraft	Sassnitz
25.4.45	TA.31 (ex-Italian <i>Dardo</i>)	scuttled	Genoa

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
DESTROYERS			
<i>(Contd.)</i>			
25.4.45	TA.32 (ex-Italian <i>Premuda</i> , ex-Yugoslav <i>Dubrovnik</i>)	scuttled	Genoa
3.5.45	Z.43	scuttled after being bombed and mined	Gelting Bay
1.5.45	TA.43 (ex-Italian <i>Sebenico</i> , ex-Yugoslav <i>Beograd</i>)	scuttled	Trieste
4.5.45	T.36	scuttled after being bombed and mined	Baltic
TORPEDO-BOATS			
10.4.40	<i>Albatros</i>	wrecked	Oslo fiord
30.4.40	<i>Leopard</i>	collision	Skagerrak
26.7.40	<i>Luchs</i>	unknown submarine	North Sea
19.9.40	T.3	R.A.F. aircraft. (Later salvaged. See subsequent entry for final sinking)	Le Havre
7.11.40	T.6	mine	North Sea
8.1.41	<i>Wolf</i>	mine	off Dunkirk
13/14.5.42	<i>Illis</i>	British M.T.B.	off Boulogne
13/14.5.42	<i>Seedler</i>	British M.T.B.	off Boulogne
10.9.43	TA.11 (ex-Italian FR.43, ex-French <i>L'Iphigénie</i>)	Italian tanks	Piombino
22.9.43	TA.12 (ex-Italian FR.44, ex-French <i>Baliste</i>)	beached after surface action 17.9.43 and then destroyed by aircraft	off Rhodes
13.12.43	T.15	U.S. aircraft	Kiel
17.1.44	TA.10 (ex-Italian FR.42, ex-French <i>La Pomone</i>)	beached after surface action, and blown up 23.1.44	off Rhodes
18.3.44	TA.36 (ex-Italian <i>Siella Polare</i>)	Italian mine	off the Istrian peninsula
25.4.44	TA.23 (ex-Italian <i>Impavido</i>)	mine	east of Corsica
24.5.44	<i>Greif</i>	R.A.F. aircraft	Seine Bay
2.6.44	TA.16 (ex-Italian <i>Castelfidardo</i>)	severely damaged by aircraft and sunk by explosion of an ammunition ship	Heraklion
9.6.44	TA.27 (ex-Italian <i>Auriga</i>)	U.S. aircraft	off Elba
14/15.6.44	<i>Jaguar</i>	R.A.F. aircraft	Le Havre
14/15.6.44	<i>Falke</i>	R.A.F. aircraft	Le Havre
14/15.6.44	<i>Möwe</i>	R.A.F. aircraft	Le Havre
14/15.6.44	TA.25 (ex-Italian <i>Intrepido</i>)	British M.T.B.	west of Spezia
15.6.44	TA.26 (ex-Italian <i>Ardito</i>)	severely damaged by coastal forces. Blown up in Rapallo by Italian partisans 6.7.44	off Spezia
15.6.44	TA.30 (ex-Italian <i>Dragone</i>)	British/U.S. coastal forces	off Spezia
15.6.44	<i>Kondor</i>	severely damaged by R.A.F. aircraft. Blown up when port was evacuated	Le Havre
25.6.44	TA.22 (ex-Italian <i>Missori</i>)	severely damaged in air attack. Finally scuttled 2.5.45	off Trieste
29.7.44	T.2	U.S. aircraft	Bremen
29.7.44	T.7	U.S. aircraft	Bremen

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
TORPEDO-BOATS			
<i>(Contd.)</i>			
9.8.44	TA.19 (ex-Italian <i>Calatafimi</i>)	Greek S/M <i>Pipinos</i>	Aegean
20.8.44	TA.35 (ex-Italian <i>Dezza</i>)	Axis mine. Salvaged and finally scuttled at Trieste	off Pola
23.8.44	TA.9 (ex-Italian FR.41, ex-French <i>Bombarde</i>)	U.S. Aircraft	Toulon
4.9.44	TA.28 (ex-Italian <i>Rigel</i>)	U.S. aircraft	Genoa
17.9.44	T.18	Russian aircraft	Gulf of Finland
18.9.44	TA.17 (ex-Italian <i>San Martino</i>)	damaged by R.A.F. aircraft and finally sunk as a blockship	Piraeus
7.10.44	TA.37 (ex-Italian <i>Gladio</i>)	<i>Termagant</i> and <i>Tuscan</i>	Aegean
13.10.44	TA.38 (ex-Italian <i>Spada</i>)	damaged by S.A.A.F. aircraft and sunk as a blockship	Volos
16.10.44	TA.39 (ex-Italian <i>Daga</i>)	mine	off Salonica
19.10.44	TA.18 (ex-Italian <i>Solferino</i>)	<i>Termagant</i> and <i>Tuscan</i>	Aegean
1.11.44	TA.20 (ex-Italian <i>Audace</i>)	<i>Wheatland</i> and <i>Avon Vale</i>	Adriatic
4.11.44	TA.49 (ex-Italian <i>Lira</i>)	aircraft	Spezia
5.11.44	TA.21 (ex-Italian <i>Insidioso</i>)	R.A.F. aircraft	Fiume
18.12.44	T.10	R.A.F. aircraft	Gdynia
20.2.45	TA.41 (ex-Italian <i>Lancia</i>)	severely damaged in air attack. Finally blown up 1.5.45	Trieste
20.2.45	TA.40 (ex-Italian <i>Pugnale</i>)	severely damaged in air attack. Finally blown up 1.5.45	Trieste
20.2.45	TA.46 (ex-Italian <i>Fionda</i>)	U.S. aircraft	Fiume
20.2.45	TA.47 (ex-Italian <i>Balestra</i>)	severely damaged by U.S. aircraft. Finally taken over by Yugoslavs	Fiume
20.2.45	TA.48 (ex-Italian T.3, ex-Yugoslav T.3)	U.S. aircraft	Fiume
14.3.45	T.3	mine	Danzig Bay
14.3.45	T.5	mine	Danzig Bay
18.3.45	TA.24 (ex-Italian <i>Arturo</i>)	<i>Meteor</i> and <i>Lookout</i>	Gulf of Genoa
18.3.45	TA.29 (ex-Italian <i>Eridano</i>)	<i>Meteor</i> and <i>Lookout</i>	Gulf of Genoa
21.3.45	TA.42 (ex-Italian <i>Alabarda</i>)	R.A.F. aircraft	Venice
10.4.45	T.1	R.A.F. aircraft	Kiel
10.4.45	T.13	R.A.F. aircraft	Kattegat
13.4.45	TA.45 (ex-Italian <i>Spica</i>)	British M.T.B.	Gulf of Fiume
3.5.45	T.8	scuttled	Kiel
3.5.45	T.9	scuttled	Kiel
ARMED MERCHANT RAIDERS			
8.5.41	<i>Penguin</i> (ship 33)	<i>Cornwall</i>	north of Seychelles
19.11.41	<i>Kormoran</i> (ship 41)	<i>Sydney</i> (R.A.N.)	off Western Australia
22.11.41	<i>Atlantis</i> (ship 16)	<i>Devonshire</i>	South Atlantic
27.9.42	<i>Stier</i> (ship 23)	<i>S.S. Stephen Hopkins</i> (U.S.)	South Atlantic

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
ARMED MERCHANT RAIDERS			
<i>(Contd.)</i>			
14.10.42	<i>Komet</i> (ship 45)	R.N. destroyers and M.T.Bs	off Cherbourg
30.11.42	<i>Thor</i> (ship 10)	Internal explosion	Yokohama
17.10.43	<i>Michel</i> (ship 28)	U.S. S/M <i>Tarpon</i>	off Yokohama
MINELAYERS			
9.7.41	<i>Hansestadt Danzig</i>	Swedish mine	Baltic
9.7.41	<i>Preussen</i>	Swedish mine	Baltic
9.7.41	<i>Tannenberg</i>	Swedish mine	Baltic
25.9.41	<i>Königin Luise</i>	Russian mine	South of Helsinki
25.8.42	<i>Ulm</i>	<i>Onslaught, Marne and Martin</i>	Arctic
27.8.42	<i>Cobra</i>	U.S. aircraft	Rotterdam
21.9.43	<i>Brandenburg</i> (ex-French <i>Kita</i>)	<i>Unseen</i>	North-east of Corsica
6.10.43	<i>Pommern</i> (ex-French <i>Bélain d'Esnambuc</i>)	mine	South of San Remo
8.10.43	<i>Bulgaria</i> (ex-Bulgarian ship)	<i>Unruly</i>	Aegean
22.12.43	<i>Drache</i> (ex-Yugoslav <i>Zmaj</i>)	R.A.F. aircraft	off Samos
20.1.44	<i>Skagerrak</i> (ex-Norwegian ship)	R.A.F. aircraft	off Egersund, Norway
15.2.44	<i>Niedersachsen</i> (ex-Italian <i>Acqui</i>)	<i>Upstart</i>	off Toulon
21.4.44	<i>Roland</i>	mine	Baltic
12.8.44	<i>Dietrich von Bern</i> (ex-Italian <i>Mazara</i>)	R.A.F. aircraft	Genoa
30.10.44	<i>Zeus</i> (ex-Italian <i>Morosini</i>)	R.A.F. aircraft	Aegean
5.11.44	<i>Kiebitz</i> (ex-Italian <i>Vittorio Locchi</i>)	R.A.F. aircraft (previously sunk by aircraft in Gulf of Venice on 2.5.44 but salvaged)	Fiume
5.11.44	<i>Kuckuck</i> (ex-Italian <i>Ramb III</i>)	R.A.F. aircraft (later raised but finally scuttled 1.5.45)	Fiume
3.1.45	<i>Elsass</i> (ex-French <i>Côte d'Azur</i>)	mine	Great Belt
4.4.45	<i>Brummer</i> (ex-Norwegian <i>Olav Tryggvason</i>)	U.S. aircraft (finally blown up on 3.5.45)	Kiel
19.4.45	<i>Westmark</i> (ex-Italian <i>Buffoluto</i> , ex-French <i>Djbel-Dira</i>)	scuttled	Spezia
21.4.45	<i>Ostmark</i> (ex-French <i>Côte d'Argent</i>)	R.A.F. aircraft	Danzig Bay
23.4.45	<i>Kehrwieder</i> (ex-Italian <i>Cotrone</i>)	U.S. aircraft	Spezia
24.4.45	<i>Oldenburg</i> (ex-Italian <i>Garigliano</i>)	scuttled	Genoa

SUBMARINES

1162 (785 sunk, 221 scuttled at the end of the war, 156 surrendered). Full details of sinkings are given in other Appendices to these volumes.

S-BOATS (M.T.Bs)

146 (Includes 17 captured or requisitioned Allied craft)

M-BOATS (Minesweepers)

119

R-BOATS (Motor minesweepers)

163 (Includes 28 captured or requisitioned Allied vessels)

<i>Date</i>	<i>Name</i>	<i>Cause</i>	<i>Area</i>
	ESCORT VESSELS (<i>Built as such</i>)		
	12 (Includes 8 captured or requisitioned Allied vessels)		
	CORVETTES <i>etc.</i> (<i>Used as A/S vessels</i>)		
	13 (All captured or requisitioned Allied vessels)		
	SPERRBRECHER (<i>Equivalent to British mine destructor ships</i>)		
	64		
	MISCELLANEOUS CONVERTED MERCHANT VESSELS		
	39		
	TRAWLERS, MOTOR FISHING VESSELS, ETC.		
	821		
	NAVAL FERRY BARGES (<i>Equivalent to British minor landing craft</i>)		
	Between 500 and 600		

APPENDIX Y

German and Japanese U-Boats Sunk

1st June, 1944—15th August, 1945

*Table I. German U-boats Sunk
(1st June, 1944—8th May, 1945)*

Number	Date	Name and Task of Killer	Area
U.477	3 June '44	Aircraft of 162 Squadron R.C.A.F.—Northern transit area patrol	Off S. Norway
U.505 (captured)	4 June '44	Aircraft from <i>U.S.S. Guadalcanal</i> and <i>U.S.Ss Chatelain, Jenks and Pillsbury</i> —	Off West Africa
U.955	7 June '44	Aircraft of 201 Squadron—air patrol	Bay of Biscay
U.970	7 June '44	Aircraft of 228 Squadron—air patrol	Bay of Biscay
U.629	8 June '44	Aircraft of 224 Squadron—air patrol	West Channel
U.373	8 June '44	Aircraft of 224 Squadron—air patrol	West Channel
U.740	9 June '44	Aircraft of 120 Squadron—air patrol	West Channel
U.821	10 June '44	Aircraft of 206 and 248 Squadrons—air patrol	West Channel
U.980	11 June '44	Aircraft of 162 Squadron R.C.A.F.—Northern transit area patrol	Off S.W. Norway
U.490	11 June '44	Aircraft from <i>U.S.S. Croatan</i> and <i>U.S.Ss Frost, Inch, and Huse</i> —carrier air/sea patrol	North Atlantic
U.715	13 June '44	Aircraft of 162 Squadron R.C.A.F.—Northern transit area patrol	East of Faeroes
U.860	15 June '44	Aircraft from <i>U.S.S. Solomons</i> —Carrier air patrol	South Atlantic
U.987	15 June '44	<i>Satyr</i> —S/M patrol	Arctic
U.998	16 June '44	Aircraft of Norwegian Squadron 333—Northern transit area patrol	Off S.W. Norway
U.423	17 June '44	Aircraft of Norwegian Squadron 333—Northern transit area patrol	Off S.W. Norway
U.767	18 June '44	<i>Fame, Inconstant, Havelock</i> —sea patrol	Channel
U.441	18 June '44	Aircraft of Polish Squadron 304—air patrol	West Channel
U.971	24 June '44	<i>Haida</i> (R.C.N.), <i>Eskimo</i> and aircraft of Czech Squadron 311—air/sea patrol	West Channel
U.1225	24 June '44	Aircraft of 162 Squadron R.C.A.F.—Northern transit area patrol	North of Shetland Isles
U.1191	25 June '44	<i>Affleck</i> and <i>Balfour</i> —sea escort	Channel
U.269	25 June '44	<i>Bickerton</i> —sea patrol	Channel
U.317	26 June '44	Aircraft of 86 Squadron—Northern transit area patrol	Off S.W. Norway
U.719	26 June '44	<i>Bulldog</i> —sea patrol	Off N.W. Ireland
U.988	29 June '44	<i>Essington, Duckworth, Domett, Cooke</i> and aircraft of 224 Squadron—air/sea patrol	West Channel
U.478	30 June '44	Aircraft of 86 Squadron and 162 Squadron R.C.A.F.—Northern transit area patrol	North of Shetlands
U.543	2 July '44	Aircraft from <i>U.S.S. Wake Island</i> —carrier air patrol	S.W. of Canary Islands
U.154	3 July '44	<i>U.S.Ss. Inch</i> and <i>Frost</i> —carrier sea patrol	W.N.W. of Madeira

Table I. German U-boats Sunk 1st June, 1944-8th May, 1945 (Contd.)

Number	Date	Name and Task of Killer	Area
U.233	5 July '44	<i>U.S.Ss Baker and Thomas</i> —carrier sea patrol	S.E. of Nova Scotia
U.390	5 July '44	<i>Wanderer and Tavy</i> —sea escort	Channel
U.586	5 July '44	U.S.A.A.F. air raid—bombing	Toulon
U.678	6 July '44	<i>Ottawa and Kootenay</i> (R.C.N.) and <i>Static</i> (R.N.)—sea escort	Channel
U.243	8 July '44	Aircraft of 10 Squadron, R.A.A.F.—Bay air patrol	Bay of Biscay
U.1222	11 July '44	Aircraft of 201 Squadron—Bay air patrol	Bay of Biscay
U.415	14 July '44	Mine	Off Brest
U.319	15 July '44	Aircraft of 206 Squadron—Northern transit area patrol	Off S.W. Norway
U.361	17 July '44	Aircraft of 86 Squadron—Northern transit area patrol	West of Narvik
U.347	17 July '44	Aircraft of 210 Squadron—Northern transit area patrol	West of Narvik
U.672	18 July '44	<i>Balfour</i> —sea patrol	Channel
U.742	18 July '44	Aircraft of 210 Squadron—Northern transit area patrol	West of Narvik
U.212	21 July '44	<i>Curzon and Ekias</i> —sea escort	Channel
U.239	23/24 July '44	R.A.F. air raid—bombing	Kiel
U.1164	23/24 July '44	R.A.F. air raid—bombing	Kiel
U.2323	23/24 July '44	R.A.F. air raid—bombing	Kiel
U.214	26 July '44	<i>Cooke</i> —sea patrol	Channel
U.872	29 July '44	U.S.A.A.F. air raid—bombing	Bremen
U.250	30 July '44	Russian forces	Gulf of Finland
U.333	31 July '44	<i>Starling and Loch Killin</i> —sea patrol	Channel
U.1166	- July '44	Accident—marine casualty	Baltic
U.671	4 Aug. '44	<i>Stayner and Wensleydale</i> —sea patrol	Channel
U.736	6 Aug. '44	<i>Loch Killin and Starling</i> —sea patrol	Bay of Biscay
U.642	6 Aug. '44	U.S.A.A.F. air raid—bombing	Toulon
U.952	6 Aug. '44	U.S.A.A.F. air raid—bombing	Toulon
U.471	6 Aug. '44	U.S.A.A.F. air raid—bombing	Toulon
U.969	6 Aug. '44	U.S.A.A.F. air raid—bombing	Toulon
U.608	10 Aug. '44	Aircraft of 53 Squadron and <i>Wren</i> —air/sea patrol	Bay of Biscay
U.385	11 Aug. '44	Aircraft of 461 Squadron (R.A.A.F.) and <i>Starling</i> —air/sea patrol	Bay of Biscay
U.981	12 Aug. '44	Aircraft of 502 Squadron—air patrol	Bay of Biscay
U.270	12 Aug. '44	Aircraft of 461 Squadron (R.A.A.F.)—air patrol	Bay of Biscay
U.198	12 Aug. '44	<i>Findhorn and Godaveri</i> (R.I.N.)—sea patrol	India Ocean
U.618	14 Aug. '44	Aircraft of 53 Squadron and <i>Duckworth and Essington</i> —air/sea patrol	Bay of Biscay
U.741	15 Aug. '44	<i>Orchis</i> —sea escort	Channel
U.107	18 Aug. '44	Aircraft of 201 Squadron—air patrol	Bay of Biscay
U.621	18 Aug. '44	<i>Ottawa, Kootenay and Chaudière</i> (all R.C.N.)—sea patrol	Bay of Biscay
U.466	19 Aug. '44	Blown up	Toulon
U.967	19 Aug. '44	Blown up	Toulon
U.413	20 Aug. '44	<i>Wensleydale, Forester and Vidette</i> —sea escort	Channel
U.984	20 Aug. '44	<i>Ottawa, Chaudière and Kootenay</i> (all R.C.N.)—sea patrol	Bay of Biscay
U.1229	20 Aug. '44	Aircraft from <i>U.S.S. Bogue</i> —carrier air patrol	North Atlantic
U.9	20 Aug. '44	Russian air raid—bombing	Constanza
U.230	21 Aug. '44	Scuttled	Toulon
U.180	22 Aug. '44	Mine	Bay of Biscay
U.344	22 Aug. '44	Aircraft of 825 F.A.A. Squadron from <i>Vindex</i> —carrier air escort	Arctic

Table I. German U-boats Sunk 1st June, 1944-8th May, 1945 (Contd.)

Number	Date	Name and Task of Killer	Area
U.354	24 Aug. '44	Aircraft of 825 F.A.A. Squadron from <i>Vindex</i> and <i>Mermaid</i> , <i>Loch Dunvegan</i> , <i>Keppel</i> and <i>Peacock</i> —carrier air/sea escort	Arctic
U.445	24 Aug. '44	<i>Louis</i> —sea patrol	Bay of Biscay
U.178	25 Aug. '44	Scuttled	Bordeaux
U.188	25 Aug. '44	Scuttled	Bordeaux
U-IT.21	25 Aug. '44	Scuttled	Bordeaux
U.667	25 Aug. '44	Mine	Off La Pallice
U.24	25 Aug. '44	Scuttled	Constanza
U.18	25 Aug. '44	Scuttled	Constanza
U.766	- Aug. '44	Scrapped	La Pallice
U.123	- Aug. '44	Scrapped	Lorient
U.129	- Aug. '44	Scrapped	Lorient
U.1000	31 Aug. '44	Mine	Baltic
U.247	1 Sept. '44	<i>St John</i> and <i>Swansea</i> (both R.C.N.)—sea patrol	Off Land's End
U.394	2 Sept. '44	Aircraft of 825 F.A.A. Squadron from <i>Vindex</i> and <i>Keppel</i> , <i>Mermaid</i> , <i>Whitehall</i> and <i>Peacock</i> —carrier air/sea escort	Arctic
U.362	6 Sept. '44	Unknown	Arctic, Kara Sea
U.743	9 Sept. '44	<i>Portchester Castle</i> and <i>Helmsdale</i> —sea escort	Off N.W. Ireland
U.484	9 Sept. '44	<i>Dunver</i> and <i>Hespeler</i> (both R.C.N.)—sea escort	Hebrides
U.19	10 Sept. '44	Scuttled	Off Turkish coast
U.20	10 Sept. '44	Scuttled	Off Turkish coast
U.23	10 Sept. '44	Scuttled	Off Turkish coast
U.865	17 Sept. '44	Unknown (possibly mined)	Iceland/Faeroes
U.867	19 Sept. '44	Aircraft of 224 Squadron—Northern transit area patrol	Off S.W. Norway
U.407	19 Sept. '44	<i>Troubridge</i> , <i>Terpsichore</i> and <i>Garland</i> (Polish)—sea patrol	North of Crete
U.859	23 Sept. '44	<i>Trenchant</i> —S/M patrol	Malacca Strait
U.565	24 Sept. '44	U.S.A.A.F. air raid—bombing	Greece
U.596	24 Sept. '44	U.S.A.A.F. air raid—bombing	Greece
U.855	24 Sept. '44	Aircraft of 224 Squadron—Northern transit area patrol	Off S.W. Norway
U.871	26 Sept. '44	Aircraft of 220 Squadron—air support	N.W. of Azores
U.863	29 Sept. '44	Aircraft of U.S. Squadron 107—air patrol	South Atlantic
U.921	30 Sept. '44	Aircraft of 813 F.A.A. Squadron from <i>Campania</i> —carrier air escort	Arctic
U.1062	30 Sept. '44	<i>U.S.S. Fessenden</i> —sea patrol	S.W. of Cape Verde Island
U.703	- Sept. '44	Mine	Off S.E. Iceland
U.925	- Sept. '44	Unknown	Iceland/Faeroes
U.993	4 Oct. '44	R.A.F. air raid—bombing	Bergen
U.437	4 Oct. '44	R.A.F. air raid—bombing	Bergen
U.228	4 Oct. '44	R.A.F. air raid—bombing	Bergen
U.92	4 Oct. '44	R.A.F. air raid—bombing	Bergen
U.168	5 Oct. '44	<i>Zwaardvisch</i> (Dutch)—S/M patrol	Off Java
U.777	9/10 Oct. '44	R.A.F. air raid—bombing	Wilhelmshaven
U.1006	16 Oct. '44	<i>Annan</i> (R.C.N.)—sea patrol	Faeroes
U.957	19 Oct. '44	Accident—rammed by German ship	Lofoten Is.
U.985	22 Oct. '44	Mine (German)	Off S. Norway
U.673	24 Oct. '44	Accident—collision	Off S.W. Norway
U.1060	27 Oct. '44	Aircraft of 1771 F.A.A. Squadron from <i>Implacable</i> and 502 Squadron (R.A.F.) and 311 Squadron (Czech)	Off Norway

Table I. German U-boats Sunk 1st June, 1944-8th May, 1944 (Contd.)

Number	Date	Name and Task of Killer	Area
U.1226	20 Oct. '44	Unknown (probably schnorkel accident)	Atlantic
	4 Nov. '44		
U.2331	- Oct. '44	Accident—marine casualty	Baltic
U.537	9 Nov. '44	<i>U.S.S. Flounder</i> —S/M patrol	Off Java
U.771	11 Nov. '44	<i>Venturer</i> —S/M patrol	Arctic
U.1200	11 Nov. '44	<i>Pevensey Castle, Portchester Castle, Launceston Castle, Kenilworth Castle</i> —sea patrol	Channel approaches
U.322	25 Nov. '44	<i>Ascension</i> and aircraft of 330 Squadron (Norwegian)—Northern transit area patrol	Shetlands area
U.80	28 Nov. '44	Accident—marine casualty	Baltic
U.196	30 Nov. '44	Unknown	Sunda Strait
U.547	- Nov. '44	Mine	Baltic
U.297	6 Dec. '44	<i>Loch Insh and Goodall</i> —sea patrol	Off N. Scotland
U.387	9 Dec. '44	<i>Bamborough Castle</i> —sea escort	Arctic
U.416	12 Dec. '44	Accident—collision	Baltic
U.479	12 Dec. '44	Unknown (possibly Russian mine)	Baltic
U.365	13 Dec. '44	Aircraft of 813 F.A.A. Squadron from <i>Campania</i> —carrier air escort	Arctic
U.400	17 Dec. '44	<i>Nyasaland</i> —sea escort	South of Ireland
U.1209	18 Dec. '44	Accident—marine casualty	Channel
U.737	18 Dec. '44	Accident—collision	Lofoten Is.
U.2342	26 Dec. '44	Mine	Baltic
U.877	27 Dec. '44	<i>St Thomas</i> (R.C.N.)—sea escort	North Atlantic
U.735	28 Dec. '44	R.A.F. air raid—bombing	Norway
U.772	30 Dec. '44	Aircraft of 407 Squadron R.C.A.F.—air support	Channel
U.2532	31 Dec. '44	U.S.A.A.F. air raid—bombing	Hamburg
U.2537	31 Dec. '44	U.S.A.A.F. air raid—bombing	Hamburg
U.679	10 Jan. '45	Unknown (possibly Russian mine)	Baltic
U.248	16 Jan. '45	<i>U.S.S. Hayler, Otter, Varian and Hubbard</i> —sea patrol	North Atlantic
U.482	16 Jan. '45	<i>Peacock, Hart, Starling, Loch Craiggie and Amethyst</i> —sea patrol	North Channel
U.2515	17 Jan. '45	U.S.A.A.F. air raid—bombing	Hamburg
U.2523	17 Jan. '45	U.S.A.A.F. air raid—bombing	Hamburg
U.2530	17 Jan. '45	U.S.A.A.F. air raid—bombing	Hamburg
U.1199	21 Jan. '45	<i>Icarus and Mignonette</i> —sea escort	Channel
U.763	21 Jan. '45	Russian air raid—bombing	Koenigsberg
U.1172	26 Jan. '45	<i>Aylmer, Calder, Bentinck and Manners</i> —sea escort	Irish sea
U.1051	27 Jan. '45	<i>Tyler, Keats and Bligh</i> —sea escort	Irish Sea
U.3520	31 Jan. '45	Mine	Baltic
U.1020	- Jan. '45	Unknown	Off N.E. Scotland
U.650	- Jan. '45	Unknown	Channel
U.382	- Jan. '45	Accident—collision	Baltic
U.1279	3 Feb. '45	<i>Bayntun, Braithwaite and Loch Eck</i> —sea patrol	North of Shetlands
U.745	4 Feb. '45	Unknown	Baltic
U.1014	4 Feb. '45	<i>Loch Seavaig, Nyasaland, Papua and Loch Shin</i> —sea patrol	Off N. Ireland
U.864	9 Feb. '45	<i>Venturer</i> —S/M patrol	Off S.W. Norway
U.989	14 Feb. '45	<i>Bayntun, Braithwaite, Loch Eck and Loch Dumegan</i> —sea patrol	North of Shetlands
U.1053	15 Feb. '45	Accident—whilst exercising	Off Bergen
U.309	16 Feb. '45	<i>St John</i> (R.C.N.)—sea patrol	Off N.E. Scotland
U.425	17 Feb. '45	<i>Lark and Alnwick Castle</i> —sea escort	Arctic
U.1273	17 Feb. '45	Mine	Off S. Norway
U.1278	17 Feb. '45	<i>Bayntun and Loch Eck</i> —sea patrol	Off Shetlands
U.2344	18 Feb. '45	Accident—collision	Baltic
U.676	19 Feb. '45	Mine	Baltic

Table I. German U-boats Sunk 1st June, 1944—8th May, 1945 (Contd.)

Number	Date	Name and Task of Killer	Area
U.1208	20 Feb. '45	<i>Amethyst</i> —sea escort	St. George's Channel
U.300	22 Feb. '45	<i>Recruit, Evadne and Pincher</i> —sea escort	South of Portugal
U.480	24 Feb. '45	<i>Duckworth and Rowley</i> —sea escort	Channel
U.927	24 Feb. '45	Aircraft of 179 Squadron—air patrol	Channel
U.3007	24 Feb. '45	U.S.A.A.F. air raid—bombing	Bremen
U.1018	27 Feb. '45	<i>Loch Fada</i> —sea escort	Channel
U.327	27 Feb. '45	Aircraft of U.S. Squadron 112 and <i>Labuan, Loch Fada and Wild Goose</i> —air/sea support	Channel
U.869	28 Feb. '45	<i>U.S.S. Fowler and L'Indiscret (Fr)</i> —sea escort	Off Morocco
U.923	— Feb. '45	Mine (Russian)	Baltic
U.21	— Feb. '45	Scrapped	Baltic
U.3519	2 Mar. '45	Mine	Baltic
U.1302	7 Mar. '45	<i>La Hullose, Strathadam and Thetford Mines</i> (all R.C.N.)—sea patrol	St. George's Channel
U.682	8/9 Mar. '45	R.A.F. air raid—bombing	Hamburg
U.275	10 Mar. '45	Mine	Channel
U.681	11 Mar. '45	Aircraft of U.S. Squadron 103—air patrol	Channel
U.683	12 Mar. '45	<i>Loch Ruthven and Wild Goose</i> —sea escort	Channel
U.260	12 Mar. '45	Mine	South of Ireland
U.714	14 Mar. '45	<i>Natal</i> (S.A.N.F.) on passage	Off Farne Is.
U.367	15 Mar. '45	Mine	Baltic
U.866	18 Mar. '45	<i>U.S.Ss Lowe, Menges, Pride and Mosley</i> —sea patrol	Off Nova Scotia
U.905	20 Mar. '45	Aircraft of 86 Squadron—Northern transit area patrol	N.W. of Orkneys
U.1003	20 Mar. '45	<i>New Glasgow</i> (R.C.N.)	North of Ireland
U.296	22 Mar. '45	Aircraft of 120 Squadron—air patrol	North Channel
U.399	26 Mar. '45	<i>Duckworth</i> —sea escort	Channel
U.965	27 Mar. '45	<i>Conn</i> —sea patrol	Hebrides
U.722	27 Mar. '45	<i>Fitzroy, Redmill and Byron</i> —sea patrol	Hebrides
U.246	29 Mar. '45	<i>Duckworth</i> —sea escort	Channel
U.1106	29 Mar. '45	Aircraft of 224 Squadron—Northern transit area patrol	Shetlands
U.1021	30 Mar. '45	<i>Rupert and Conn</i> —sea patrol	Hebrides
U.3508	30 Mar. '45	U.S.A.A.F. air raid—bombing	Wilhelmshaven
U.429	30 Mar. '45	U.S.A.A.F. air raid—bombing	Wilhelmshaven
U.96	30 Mar. '45	U.S.A.A.F. air raid—bombing	Wilhelmshaven
U.72	30 Mar. '45	U.S.A.A.F. air raid—bombing	Bremen
U.430	30 Mar. '45	U.S.A.A.F. air raid—bombing	Bremen
U.870	30 Mar. '45	U.S.A.A.F. air raid—bombing	Bremen
U.329	30 Mar. '45	U.S.A.A.F. air raid—bombing	Bremen
U.884	30 Mar. '45	U.S.A.A.F. air raid—bombing	Bremen
U.886	30 Mar. '45	U.S.A.A.F. air raid—bombing	Bremen
U.2340	30 Mar. '45	U.S.A.A.F. air raid—bombing	Hamburg
U.348	30 Mar. '45	U.S.A.A.F. air raid—bombing	Hamburg
U.1167	30 Mar. '45	U.S.A.A.F. air raid—bombing	Hamburg
U.350	30 Mar. '45	U.S.A.A.F. air raid—bombing	Hamburg
U.321	2 Apl. '45	Aircraft of 304 Polish Squadron—air patrol	S.W. of Ireland
U.1221	3 Apl. '45	U.S.A.A.F. air raid—bombing	Kiel
U.2542	3 Apl. '45	U.S.A.A.F. air raid—bombing	Kiel
U.3505	3 Apl. '45	U.S.A.A.F. air raid—bombing	Kiel
U.1276	3 Apl. '45	Aircraft of 224 Squadron—Northern transit area patrol	Off Shetlands
U.749	4 Apl. '45	U.S.A.A.F. air raid—bombing	Kiel
U.237	4 Apl. '45	U.S.A.A.F. air raid—bombing	Kiel
U.3003	4 Apl. '45	U.S.A.A.F. air raid—bombing	Kiel

Table I. German U-boats Sunk 1st June, 1944-8th May, 1945 (Contd.)

Number	Date	Name and Task of Killer	Area
U.1169	5 Apl. '45	Mine	St. George's Channel
U.1195	6 Apl. '45	<i>Watchman</i> —sea escort	Channel
U.857	7 Apl. '45	<i>U.S.S. Gustafson</i> —sea patrol	Off Cape Cod
U.1001	8 Apl. '45	<i>Fitzroy and Byron</i> —sea patrol	S.W. of Ireland
U.2509	8 Apl. '45	R.A.F. air raid—bombing	Hamburg
U.2514	8 Apl. '45	R.A.F. air raid—bombing	Hamburg
U.3512	8 Apl. '45	R.A.F. air raid—bombing	Hamburg
U.774	8 Apl. '45	<i>Calder and Bentinck</i> —sea patrol	S.W. of Ireland
U.804	9 Apl. '45	Aircraft of 143, 235 and 248 Squadrons—air strike	Skagerrak
U.1065	9 Apl. '45	Aircraft of 143, 235 and 248 Squadrons—air strike	Skagerrak
U.843	9 Apl. '45	Aircraft of 235 Squadron—air strike	Skagerrak
U.878	10 Apl. '45	<i>Vanquisher and Tintagel Castle</i> —sea escort	South of Ireland
U.486	12 Apl. '45	<i>Tapir</i> —S/M patrol	Off S.W. Norway
U.1024	12 Apl. '45	<i>Loch Glendhu</i> —sea escort	Irish Sea
U.1206	14 Apl. '45	Accident—marine casualty	North Sea
U.235	14 Apl. '45	Accident (German escort vessel T-17)	Skagerrak
U.285	15 Apl. '45	<i>Grindall and Keats</i> —sea patrol	S.W. of Ireland
U.1063	15 Apl. '45	<i>Loch Killin</i> —sea escort	Channel
U.1235	16 Apl. '45	<i>U.S.Ss Stanton and Frost</i> —sea patrol	North Atlantic
U.78	16 Apl. '45	Russian forces	Baltic
U.880	16 Apl. '45	<i>U.S.Ss Stanton and Frost</i> —sea patrol	North Atlantic
U.1274	16 Apl. '45	<i>Viceroy</i> —sea escort	Off St Abbs Head
U.251	19 Apl. '45	Aircraft of 235, 143, 248 Squadrons and 333 Norwegian Squadron—air strike	Kattegat
U.879	19 Apl. '45	<i>U.S.Ss Buckley and Reuben James</i> —sea patrol	Off Nova Scotia
U.636	21 Apl. '45	<i>Bazely, Drury and Bentinck</i> —sea patrol	N.W. of Ireland
U.518	22 Apl. '45	<i>U.S.Ss Carter and Neal A Scott</i> —sea patrol	North Atlantic
U.183	23 Apl. '45	<i>U.S.S. Besugo</i> —S/M patrol	Java Sea
U.396	23 Apl. '45	Aircraft of 86 Squadron—air patrol	Hebrides
U.546	24 Apl. '45	<i>U.S.Ss Flaherty, Neunzer, Chatelain, Varian, Hubbard, Janssen, Pillsbury and Keith</i> sea escort	North Atlantic
U.1107	25 Apl. '45	Aircraft of U.S. Squadron 103—air patrol	S.W. of Ushant
U.1017	29 Apl. '45	Aircraft of 120 Squadron—Northern transit area patrol	N.W. of Ireland
U.307	29 Apl. '45	<i>Loch Insh</i> —sea escort	Arctic
U.286	29 Apl. '45	<i>Loch Shin, Anguilla and Cotton</i> —sea escort	Arctic
U.242	30 Apl. '45	Aircraft of 201 Squadron, <i>Hesperus</i> and <i>Havelock</i> —air/sea escort	Irish Sea
U.548	30 Apl. '45	<i>U.S.Ss Natchez, Coffman, Bostwick and Thomas</i> —sea escort	E. coast of U.S.A.
U.1055	30 Apl. '45	Aircraft of U.S. Squadron 63—air patrol	W.S.W. of Ushant
U.56	Between 9 & 25 Apl. '45	R.A.F. and U.S.A.A.F.—air raids	Baltic
U.1227	"	R.A.F. and U.S.A.A.F.—air raids	Kiel
U.677	"	R.A.F. and U.S.A.A.F.—air raids	Baltic
U.906	"	R.A.F. and U.S.A.A.F.—air raids	Baltic
U.982	"	R.A.F. and U.S.A.A.F.—air raids	Baltic
U.3525	"	R.A.F. and U.S.A.A.F.—air raids	Baltic
U.747	"	R.A.F. and U.S.A.A.F.—air raids	Kiel
U.2516	"	R.A.F. and U.S.A.A.F.—air raids	Kiel
U.1131	"	R.A.F. and U.S.A.A.F.—air raids	Kiel

Table I. German U-boats Sunk 1st June, 1944–8th May, 1945 (Contd.)

Number	Date	Name and Task of Killer	Area
U.325	– Apl. '45	Unknown	Channel
U.326	– Apl. '45	Unknown	U.K. area
U.1007	2 May '45	R.A.F. 2nd T.A.F.—air strike	Off Lubeck
U.2359	2 May '45	Aircraft of 143, 235 and 248 Squadrons, R.C.A.F. Squadron 404, and Norwegian Squadron 333—air strike	Kattegat
U.3030	3 May '45	R.A.F. 2nd T.A.F.—air strike	South of Kattegat
U.3032	3 May '45	R.A.F. 2nd T.A.F.—air strike	South of Kattegat
U.2540	2 May '45	R.A.F. 2nd T.A.F.—air strike	South of Kattegat
U.2524	3 May '45	Aircraft of 254 and 236 Squadrons and T.A.F.—air strike	South of Kattegat
U.1210	3 May '45	R.A.F. 2nd T.A.F.—air strike	Kiel Bay
U.2503	4 May '45	Aircraft of 236 and 254 Squadrons—air strike	South of Kattegat
U.711	4 May '45	Aircraft of 853, 882 and 846 F.A.A. Squadrons from <i>Searcher</i> , <i>Trumpeter</i> and <i>Queen</i> —carrier air strike	Hardstadt
U.579	4 May '45	R.A.F. aircraft—air strike	South of Kattegat
U.2338	4 May '45	Aircraft of 236 and 254 Squadrons—air strike	South of Kattegat
U.393	4 May '45	Aircraft of 236 and 254 Squadrons—air strike	South of Kattegat
U.904	4 May '45	R.A.F. 2nd T.A.F.—air strike	Kiel Bay
U.746	4 May '45	R.A.F. 2nd T.A.F.—air strike	South of Kattegat
U.876	4 May '45	R.A.F. 2nd T.A.F.—air strike	Eckernfoörde
U.733	4 May '45	R.A.F. 2nd T.A.F.—air strike	Flensburg
U.236	4 May '45	Aircraft of 236 and 254 Squadrons—air strike	South of Kattegat
U.2365	5 May '45	Aircraft of Czech Squadron 311—air strike	Kattegat
U.534	5 May '45	Aircraft of 206 Squadron—air strike	Kattegat
U.3523	5 May '45	Aircraft of 224 Squadron—air strike	Kattegat
U.2521	5 May '45	Aircraft of 547 Squadron—air strike	Kattegat
U.3503	5 May '45	Aircraft of 86 Squadron—air strike	Kattegat
U.1008	6 May '45	Aircraft of 86 Squadron—air strike	Kattegat
U.2534	6 May '45	Aircraft of 86 Squadron—air strike	Kattegat
U.853	6 May '45	U.S.S. <i>Atherton</i> and <i>Moberly</i> —sea patrol	East coast of U.S.A.
U.881	6 May '45	U.S.S. <i>Farquhar</i> —sea patrol	North Atlantic
U.320	7 May '45	Aircraft of 210 Squadron—Northern transit area patrol	East of Shetlands
U.398	– May '45	Unknown	East coast of Scotland

NOTE:

Since the publication of Volumes I and II a few reassessments of U-boat losses have been made, e.g. it is now known that U.57 was accidentally rammed and sunk in the Baltic on 3rd Sept. 1940. It is possible that, as more information comes to light, further correction or addition to this table may be necessary. For example unofficial German research by Feldmann-Schöpfer, the results of which have been published in '*Kristall*' suggests that U.1223 and U.2367 were sunk by R.A.F. aircraft on 28th April and 5th May respectively; and that U.3028, U.1234, U.316, U.2355, U.3029, U.37, U.2544, U.1016 and U.2538 were all scuttled in late April or early May 1945. These assessments have not, however, yet been accepted by British authorities.

Table II. Japanese U-Boats Sunk
1st June 1944-15th August 1945

Number	Date	Name and Task of Killer	Area
RO-42	10 June '44	<i>U.S.S. Bangust</i> —sea escort	Off Marshall Is.
RO-111	11 June '44	<i>U.S.S. Taylor</i> —sea patrol	N.E. of Admiralty Is.
I-33	13 June '44	Accident—marine casualty	Inland sea
RO-36	13 June '44	<i>U.S.S. Melvin</i> —sea escort	Off Mariana Is.
RO-44	15 June '44	<i>U.S.S. Burden R. Hastings</i> —on passage	Off Marshall Is.
RO-114	17 June '44	<i>U.S.Ss Melvin and Wadleigh</i> —sea escort	Off Mariana Is.
RO-117	17 June '44	Aircraft of U.S.N. Patrol Squadron 109—air patrol	North of Caroline Is.
I-184	19 June '44	Aircraft from <i>U.S.S. Suwannes</i> —carrier air patrol	East of Mariana Is.
I-185	22 June '44	<i>U.S.Ss Newcomb and Chandler</i> —sea escort	Off Mariana Is.
I-52	24 June '44	Aircraft from <i>U.S.S. Bogus</i> —carrier air patrol	West of C. Verde Is.
I-10	4 July '44	<i>U.S.Ss David W. Taylor and Riddle</i> —sea escort	Off Mariana Is.
I-6	14 July '44	<i>U.S.S. William C. Miller</i> —sea patrol	Off Mariana Is.
I-166	17 July '44	<i>Telemachus</i> —S/M patrol	Malacca Strait
RO-48	- July '44	Unknown	Off Mariana Is.
I-5	19 July '44	<i>U.S.S. Wyman</i> —sea patrol	Off Mariana Is.
I-29	26 July '44	<i>U.S.S. Sawfish</i> —S/M patrol	Off Luzon
I-55	28 July '44	<i>U.S.Ss Wyman and Reynolds</i> —sea patrol	Off Mariana Is.
I-364	16 Sept. '44	<i>U.S.S. Sea Devil</i> —S/M patrol	Off Honshu
RO-47	26 Sept. '44	<i>U.S.S. McCoy Reynolds</i> —sea patrol	Off Yap
I-177	3 Oct. '44	<i>U.S.S. Samuel S. Miles</i> —sea escort	Off Palau Is.
I-54	24 Oct. '44	<i>U.S.S. Richard M. Rowell</i> —sea escort	Off Leyte
I-45	28 Oct. '44	<i>U.S.S. Whitehurst</i> —sea escort	Philippine Is.
I-26	- Oct. '44	Unknown	Western Pacific
I-46	- Oct. '44	Unknown	Off the Philippine Is.
I-38	12 Nov. '44	<i>U.S.S. Nicholas</i> —sea escort	South of Yap
I-37	19 Nov. '44	<i>U.S.Ss Conklin and McCoy Reynolds</i> —sea patrol	Off Palau Is.
I-365	29 Nov. '44	<i>U.S.S. Scabbardfish</i> —S/M patrol	Off Honshu
I-41	25 Nov. '44	Unknown—possibly aircraft from <i>U.S.S. Anzio</i> and <i>Lawrence C. Taylor</i> —carrier sea patrol	Off the Philippine Is.
I-362	13 Jan. '45	<i>U.S.S. Fleming</i> —sea escort	North of Caroline Is.
I-48	23 Jan. '45	<i>U.S.Ss Corbesier, Conklin and Raby</i> —sea escort	Off Yap
RO-115	31 Jan. '45	<i>U.S.Ss Bell, O'Bannon, Jenkins and Ulvert M. Moore</i> —sea escort	Philippine Is.
I-12	Jan. '45	Unknown	Central Pacific
RO-55	10 Feb. '45	<i>U.S.S. Batfish</i> —S/M patrol	Off Luzon
RO-112	11 Feb. '45	<i>U.S.S. Batfish</i> —S/M patrol	North of Luzon
RO-113	13 Feb. '45	<i>U.S.S. Batfish</i> —S/M patrol	North of Luzon
I-371	24 Feb. '45	<i>U.S.S. Lagarto</i> —S/M patrol	Off Kyushu
I-370	26 Feb. '45	<i>U.S.S. Finnegan</i> —sea escort	Off Volcano Is.
RO-43	26 Feb. '45	Aircraft from <i>U.S.S. Anzio</i> —carrier air patrol	Off Volcano Is.
I-368	27 Feb. '45	Aircraft from <i>U.S.S. Anzio</i> —carrier air patrol	Off Volcano Is.
RO-41	22 Mar. '45	<i>U.S.S. Haggard</i> —sea escort	Philippine Sea
I-8	31 Mar. '45	<i>U.S.Ss Morrison and Stockton</i> —sea escort	Off Okinawa
RO-49	5 Apl. '45	<i>U.S.S. Hudson</i> —sea patrol	Off Okinawa
RO-46	- Apl. '45	Unknown	Off Okinawa
RO-64	12 Apl. '45	Mine	Off Japan
RO-56	- Apl. '45	Unknown	Off Okinawa

Table II. Japanese U-boats Sunk 1st June, 1944-15th August, 1945 (Contd.)

Number	Date	Name and Task of Killer	Area
I-56	18 Apl. '45	Aircraft from U.S.S. <i>Bataan</i> and U.S.Ss <i>Heerman</i> , <i>McCord</i> , <i>Uhlmann</i> , <i>Mertz</i> , <i>Collett</i> —sea air escort	Off Okinawa
RO-109	25 Apl. '45	U.S.S. <i>Horace A. Bass</i> —sea escort	Philippine Sea
I-44	29 Apl. '45	Aircraft from U.S.S. <i>Tulagi</i> —carrier air patrol	Philippine Sea
I-361	30 May '45	Aircraft from U.S.S. <i>Anzio</i> —carrier air patrol	Off the Bonins
I-122	10 June '45	U.S.S. <i>Skate</i> —S/M patrol	Sea of Japan
I-165	27 June '45	Aircraft of U.S.N. patrol Bombing Squadron 142—air patrol	Central Pacific
I-351	14 July '45	U.S.S. <i>Bluefish</i> —S/M patrol	Off Borneo
I-13	16 July '45	Probably U.S.S. <i>Lawrence C. Taylor</i> and aircraft from U.S.S. <i>Anzio</i> —carrier air patrol	Central Pacific
I-372	18 July '45	Aircraft from U.S. carriers—bombing raid	Yokosuka
I-373	14 Aug. '45	U.S.S. <i>Spikefish</i> —S/M patrol	Off China coast

Table III. Analysis of Sinkings of German and Japanese U-Boats
by cause
1st June, 1944-15th August, 1945

	1944 (1st June-31st Dec.)		1945 (1st Jan.-15th Aug.)	
	German	Japanese	German	Japanese
Surface ships	31	16	46	8
Shore-based aircraft	29	1	39	1
Ship-borne aircraft	6	2	1	5
Ships and shore-based aircraft	6	—	—	—
Ships and ship-borne aircraft	4	—	2	2
Shore-based and ship-borne aircraft	1	—	—	—
Submarines	5	4	3	7
Bombing raids	19	—	36	—
Mines laid by shore-based aircraft	5	—	4	1
Mines laid by ships	1	—	3	—
Other causes	26	1	10	—
Causes unknown	6	4	7	3
TOTAL	139	28	151	27

Table IV. Analysis of German U-Boats Destroyed
3rd September 1939–8th May 1945

Cause	1939	40	41	42	43	44	45	Total		
Single kills by ships	Br. U.S.	5	11	24	28	47	57	34	206	
Shared by Br. and U.S. ships				5	10	10	12	37	3 246	
Single kills by shore-based aircraft	Br. U.S.		1	3	24	83	48	36	195	
Shared by Br. and U.S. shore-based aircraft				11	31	3	3	48	2 245	
Single kills by ship-borne aircraft	Br. U.S.		1		1	1	10	1	14	
Shared between Br. shore and ship-borne aircraft							6	29	43	
Shared by ships and shore-based aircraft	{ Between Br. and Br. " U.S. and U.S. " Br. and U.S. " U.S. and Br.		2	1	3	7	7	1	21	
				2	3				5	
				1			3	1	5	
Shared by ships and ship-borne aircraft	{ Between Br. and Br. " U.S. and U.S.			1		2	6		9	
					1	5			6 15	
Submarines	Br. U.S.	1	2	1	2	5	6	2	19	
Bombing raids	Br. U.S.						1	1	2 21	
Mines laid by aircraft	Br. U.S.					2	9	13	22	
Mines laid by ships and submarines	Br. U.S.	3	2				15	23	40 62	
Other causes	{ Russian action Collision accidents other accidents Marine causes Scuttling or scrapping ¹				3	1	8	4	16	
										16 ^a
								1	3	9
										9
Unknown causes			3	1	2	5	11	7	29 29	
TOTALS		9	24 ^a	35	87	237	242	151	785 785	

¹ These figures exclude U-boats scuttled after the German surrender, which totalled 221.

^a U.31 was sunk twice in 1940.

^b The assessment that U.345 was sunk by an air-laid mine in December 1943 (see Part I, p. 96) is now known to be incorrect. She was damaged in an air raid on Kiel on 13th December 1943, and never repaired. This error has been corrected in the above table.

APPENDIX YY

Enemy and Enemy-controlled Merchant Vessels of all types (including Fishing Vessels and Tugs) and Surface Warships sunk, captured or destroyed in the Home Theatre (see Note 1) between 3rd September, 1939 and 8th May, 1945, by year and by cause.

Table I. Merchant Vessels of all types sunk, captured or destroyed by forces of the Western Allies.

Cause	1939		1940		1941		1942		1943		1944		1945		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage
Surface Ship . . .	10	48,872	30	156,323	24	39,155	8	18,514	6	24,854	6	2,325	2	12,955	86	302,998
Submarine . . .			33	135,069	21	56,194	12	30,504	10	26,986	25	66,517	3	3,117	104	318,387
Coastal Forces . . .			2	453	4	1,150	6	5,615	13	26,324	12	13,071	3	13,037	40	59,650
Aircraft in direct attacks at sea . . .			15	21,722	46	79,590	31	57,005	33	105,319	79	151,562	85	158,394	289	573,592
Aircraft in air raids on ports . . .			11	8,573	5	6,848	12	29,711	41	78,200	101	125,504	50	118,770	220	367,606
Mine . . .			95	96,619	51	50,652	151	177,728	113	87,229	135	124,190	59	124,115	604	660,533
Capture at Sea . . .	11	46,179	11	20,593	2	278	18	880	8	3,588	7	1,479	3	1,513	60	74,510
Capture or scuttling in port . . .	1	3,457	20	109,762	12	33,309			1	130	177	467,621	16	28,817	227	643,096
Shore gunfire . . .			6	14,072	1	46	4	713	22	23,831	4	12,276	16	25,332	6	17,752
Sabotage or escape . . .			7	5,027	7	8,098	2	5,083	2	852	1	486	2	1,347	29	25,879
Enemy error (including on own mines)	8	4,986	9	618	13	2,658	11	1,004	11	1,806	17	10,174	5	50,451	66	66,711
Unknown cause . . .																
TOTAL . . .	30	103,494	239	568,831	186	277,978	255	326,757	262	384,595	605	1,030,626	244	537,848	1821	3,230,129

APPENDIX YY

Table II. Merchant Vessels of all types sunk, captured or destroyed by forces of the U.S.S.R.

Cause	1939		1940		1941		1942		1943		1944		1945		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage
Submarine . . .	1	3,224			2	5,083	17	41,848	3	17,420	9	22,763	6	50,502	38	140,840
Coastal Forces . . .					1	165	3	2,966	1	250	4	7,353			9	10,734
Aircraft in direct attacks at sea . . .																
Aircraft in air raids on ports . . .					4	4,889	1	1,885	5	4,153	33	55,515	16	31,342	59	97,784
Mine . . .	1	2,804	2	2,514	1	5,039	1	1,500	1	86	15	22,674	24	65,621	42	94,920
Capture or scuttling in port . . .					21	34,565	8	21,161	4	6,045	4	5,209	1	1,141	41	73,439
Shore gunfire . . .					1	2,317					1	3,121	4	7,928	6	13,566
Unknown cause . . .					1	696	1	860			14	988	2	11,022	5	13,566
TOTAL . . .	2	6,028	2	2,514	31	52,754	31	70,220	14	27,934	81	118,500	53	167,556	214	445,526

APPENDIX YY

Table III. Surface Warships of all types sunk, captured or destroyed by forces of the Western Allies

Cause	1939		1940		1941		1942		1943		1944		1945		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage
Surface Ship . . .	2	1,078	14	34,465	7	55,303	9	15,664	7	53,338	46	27,049	4	1,020	87	186,839
Submarine . . .			12	19,502	3	8,116	5	12,839	5	2,132	4	9,090	2	1,285	28	41,203
Coastal Forces . . .					3	860	10	12,839	20	5,330	31	13,302	6	2,223	70	34,554
Aircraft in direct attacks at sea . . .			1	750	13	4,046	13	6,115	24	7,906	125	72,730	25	18,762	201	110,399
Aircraft in air raids on ports . . .	1	298	5	10,219	2	160	7	3,917	20	7,652	140	134,180	34	76,231	209	232,657
Mine . . .	1	361	25	15,587	12	6,195	49	30,633	37	18,033	92	39,940	35	49,921	251	160,730
Capture at Sea . . .			1	433	2	650									3	1,083
Capture or scuttling in port . . .																
Shore gunfire . . .			2	20,132												
Sabotage or escape . . .																
Enemy error (including on own mines)	4	2,376	2	6,356			1	482							10	9,173
Unknown cause . . .															2	678
TOTAL . . .	8	4,113	62	107,444	42	75,330	89	69,650	116	95,627	521	339,833	135	232,061	973	924,058

Table IV. Surface Warships of all types sunk, captured or destroyed by forces of the U.S.S.R.

Cause	1939		1940		1941		1942		1943		1944		1945		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage
Submarine . . .					1	470	1	500	2	962	4	5,799			8	7,731
Coastal Forces . . .					1	314					7	5,182			8	5,496
Aircraft in direct attacks at sea . . .					1	90	1	90			31	13,919		1,985	43	16,084
Aircraft in air raids on ports . . .								200			8	13,004		6,941	15	7,141
Mine . . .					14	7,859	10	2,989	7	2,841				110	40	26,803
TOTAL . . .					17	8,733	13	3,779	9	3,803	50	37,904	25	9,036	114	63,255

NOTES:

- (I) The *Home Theatre* is here taken to comprise the waters from Archangel in the north to Gibraltar in the south, including the western Baltic, and stretching out 350 miles to the west of the European coastline (i.e. excluding the Mediterranean). In Tables II and IV ships sunk in the whole Baltic have been included.
- (II) Of the successes achieved by Direct Air Attacks at sea, 29 merchant vessels (53,557 tons) and 12 warships (10,944 tons) were sunk by aircraft of the Fleet Air Arm working from carriers.
- (III) The losses attributable to mines can be broken down as follows (Ships-Tonnage)

Laid by naval ships	46	46,111	30	12,377
Laid by R.A.F. aircraft	545	591,143	217	147,264
Laid by naval aircraft	9	16,333	2	361
Laid by forces of the U.S.S.R.	41	73,439	40	26,803
Laid by Norwegian forces before 9th April 1940	4	6,646	2	728
- (IV) Enemy U-boat losses, which are fully catalogued in Appendix Y (Table 4) are excluded from Tables III and IV.
- (V) In Tables III and IV the tonnages used are Standard Displacement for warships proper and Gross Register Tonnage for auxiliary warships. See Vol. I, p. 57 fn. (1) and p. 42, fn. (1) respectively for definitions of these measurements.

APPENDIX Z

*Table I. British, Allied and Neutral Merchant Ship Losses from Enemy Action,
1st June, 1944-15th August, 1945.*

1944

(Tonnage-Ships)

Month	Submarine	Aircraft	Mine	Warship raider	Merchant raider	E-boat	Unknown and other causes	Total
June . . .	57,875 (11)	9,008 (2)	24,654 (6)	—	—	1,812 (3)	10,735 (4)	104,084 (26)
July . . .	63,351 (12)	—	8,114 (3)	—	—	7,219 (1)	72 (1)	78,756 (17)
August . . .	98,729 (18)	—	7,194 (3)	—	—	7,176 (1)	5,205 (1)	118,304 (23)
September . . .	43,368 (7)	—	1,437 (1)	—	—	—	—	44,805 (8)
October . . .	7,176 (1)	—	4,492 (3)	—	—	—	—	11,668 (4)
November . . .	29,592 (7)	7,247 (1)	—	—	—	1,141 (1)	—	37,980 (9)
December . . .	58,518 (9)	35,920 (5)	35,612 (10)	—	—	—	4,863 (2)	134,913 (26)
TOTAL . . .	358,609 (65)	52,175 (8)	81,503 (26)	—	—	17,348 (6)	20,875 (8)	530,510 (113)

1945

(Tonnage-Ships)

Month	Submarine	Aircraft	Mine	Warship raider	Merchant raider	E-boat	Unknown and other causes	Total
January . . .	56,988 (11)	7,176 (1)	16,368 (5)	—	—	2,365 (1)	—	82,897 (18)
February . . .	65,233 (15)	7,177 (1)	18,076 (6)	—	—	3,889 (2)	941 (2)	95,316 (26)
March . . .	65,077 (13)	—	36,064 (7)	—	—	3,968 (2)	6,095 (5)	111,204 (27)
April . . .	72,957 (13)	22,822 (3)	8,733 (6)	—	—	—	—	104,512 (22)
May . . .	10,022 (3)	7,176 (1)	—	—	—	—	—	17,198 (4)
June . . .	11,439 (1)	—	7,176 (1)	—	—	—	—	18,615 (2)
July . . .	—	—	7,210 (2)	—	—	—	27 (1)	7,237 (3)
August . . .	—	—	36 (1)	—	—	—	—	36 (1)
Date not known . . .	—	—	—	—	—	—	1,806 (2)	1,806 (2)
TOTAL . . .	281,716 (56)	44,351 (6)	93,663 (28)	—	—	10,222 (5)	8,869 (10)	438,821 (105)

Table II. By Theatre

1944

(Tonnage-Ships)

Month	North Atlantic	United Kingdom	South Atlantic	Mediterranean	Indian Ocean	Pacific	TOTAL
June . . .	4,204 (2)	75,166 (19)	3,268 (1)	2,037 (1)	19,319 (3)	—	104,084 (26)
July . . .	15,480 (2)	19,038 (8)	14,062 (2)	—	30,176 (5)	—	78,756 (17)
August . . .	5,685 (1)	54,834 (12)	—	53 (1)	57,732 (9)	—	118,304 (23)
September . . .	16,535 (3)	21,163 (3)	—	1,437 (1)	5,670 (1)	—	44,805 (8)
October . . .	—	1,722 (2)	—	2,770 (1)	—	7,176 (1)	11,668 (4)
November . . .	7,828 (3)	8,880 (3)	—	—	14,025 (2)	7,247 (1)	37,980 (9)
December . . .	5,458 (1)	85,639 (18)	—	716 (1)	—	43,100 (6)	134,913 (26)
TOTAL . . .	55,280 (12)	266,442 (65)	17,330 (3)	7,013 (5)	126,922 (20)	57,593 (8)	530,510 (113)

1945

(Tonnage-Ships)

Month	North Atlantic	United Kingdom	South Atlantic	Mediterranean	Indian Ocean	Pacific	TOTAL
January . . .	29,168 (5)	46,553 (12)	—	—	—	7,176 (1)	82,897 (18)
February . . .	32,453 (5)	48,551 (19)	7,136 (1)	—	7,176 (1)	—	95,316 (26)
March . . .	23,684 (3)	83,864 (23)	3,656 (1)	—	—	—	111,204 (27)
April . . .	32,071 (5)	49,619 (14)	—	—	—	22,822 (3)	104,512 (22)
May . . .	5,353 (1)	4,669 (2)	—	—	—	7,176 (1)	17,198 (4)
June . . .	—	—	—	7,176 (1)	—	11,439 (1)	18,615 (4)
July . . .	—	39 (2)	—	7,198 (1)	—	—	7,237 (3)
August . . .	—	36 (1)	—	—	1,806 (2)	—	1,806 (2)
Date not known . . .	—	—	—	—	—	—	—
TOTAL . . .	122,729 (19)	233,331 (73)	10,792 (2)	14,374 (2)	8,982 (3)	48,613 (6)	438,821 (105)

APPENDIX ZZ

Table I. Annual Allied Merchant Ship Losses from Enemy Action, by causes.

Year	(Tonnage-Ships)							Unknown and other cause	TOTAL
	Submarine	Aircraft	Mine	Warship raider	Merchant raider	E-boat			
1939	421,156 (114)	2,949 (10)	262,542 (78)	61,337 (15)	—	—	7,253 (4)	755,237 (221)	
1940	2,186,158 (471)	586,074 (192)	509,889 (201)	96,986 (17)	366,644 (54)	47,985 (23)	203,905 (101)	3,991,641 (1,059)	
1941	2,171,754 (432)	1,017,422 (371)	230,842 (111)	201,823 (40)	226,527 (44)	58,854 (29)	421,336 (272)	4,328,558 (1,299)	
1942	6,266,215 (1,160)	700,020 (146)	104,588 (51)	130,461 (31)	194,605 (30)	71,156 (23)	323,632 (223)	7,790,697 (1,664)	
1943	2,386,995 (463)	424,411 (76)	108,658 (37)	—	41,848 (5)	15,138 (6)	43,177 (10)	3,220,137 (597)	
1944	773,327 (132)	120,656 (19)	95,855 (28)	7,840 (1)	—	26,321 (13)	21,630 (12)	1,045,629 (205)	
1945	281,716 (56)	44,351 (6)	93,663 (28)	—	—	10,222 (5)	8,869 (10)	438,821 (105)	
TOTAL	14,687,231 (2,828)	2,889,883 (820)	1,406,037 (534)	498,447 (104)	829,644 (133)	229,676 (99)	1,029,802 (632)	21,570,720 (5,150)	
Percentage of total loss	68.1 (54.9)	13.4 (15.9)	6.5 (10.3)	2.3 (2.0)	3.8 (2.6)	1.1 (2.0)	4.8 (12.3)	100	

NOTE : Since Volumes I and II were published a few minor alterations have been made in the assessment of losses. Thus the figures given in this and the following table do not exactly correspond in every case with the totals given in Volumes I and II.

Table II. Annual Allied Merchant Ship Losses due to Enemy Action, by theatres.

Year	(Tonnage-Ships)							Pacific	TOTAL
	North Atlantic	United Kingdom	South Atlantic	Mediterranean	Indian Ocean				
1939	249,195 (47)	455,953 (165)	49,383 (8)	64,183 (13)	706 (1)	—	99,531 (15)	755,237 (221)	
1940	1,865,494 (349)	1,793,748 (650)	55,269 (8)	501,363 (158)	173,416 (24)	—	458,131 (246)	3,991,641 (1,059)	
1941	2,421,700 (496)	740,293 (350)	133,916 (29)	665,127 (73)	73,155 (20)	—	550,745 (214)	4,328,558 (1,299)	
1942	5,471,222 (1,006)	214,885 (91)	464,233 (75)	635,658 (137)	724,485 (205)	—	132,967 (26)	7,790,697 (1,664)	
1943	1,654,379 (284)	52,484 (25)	258,325 (43)	159,545 (30)	486,324 (82)	—	57,523 (8)	3,220,137 (597)	
1944	175,013 (31)	277,995 (77)	52,841 (9)	14,374 (2)	322,802 (50)	—	48,613 (6)	1,045,629 (205)	
1945	122,729 (19)	233,331 (73)	10,792 (2)	—	8,982 (3)	—	—	438,821 (105)	
TOTAL	11,899,732 (2,232)	3,768,599 (1,431)	1,024,759 (174)	1,740,250 (413)	1,789,870 (385)	—	1,347,510 (515)	21,570,720 (5,150)	
Percentage of total loss	55.1 (43.3)	17.5 (27.8)	4.7 (3.4)	8.2 (8.0)	8.3 (7.5)	—	6.2 (10.0)	100	

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