Medical service of field units.

United States.
Washington, 1942.

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FM 8-10

WAR DEPARTMENT

MEDICAL FIELD MANUAL

MEDICAL SERVICE OF FIELD UNITS

March 28, 1942

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FM 8-1

MEDICAL FIELD MANUAL

MEDICAL SERVICE OF FIELD UNITS

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WASHINGTON, March 28, 1942.

FM 8–10, Medical Field Manual, Medical Service of Field Units, is published for the information and guidance of all concerned.

[A. G. 062.11 (12–24–41).]

BY ORDER OF THE SECRETARY OF WAR:

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TABLE OF CONTENTS

	Paragraphs	Page
CHAPTER 1. General.		
SECTION I. General characteristics of medical service	1–11	1
II. General tactical considerations	12–15	12
CHAPTER 2. Medical service of the division.		
SECTION I. General	16–26	21
II. Attached medical personnel	27–39	38
III. Collection	40–51	62
IV. Ambulance evacuation	52–60	87
V. Clearing	61–71	98
CHAPTER 3. Medical service in camp and bivouac	72–77	107
CHAPTER 4. Medical service on marches	78–82	119
CHAPTER 5. Medical service in the attack	83–93	128
CHAPTER 6. Medical service in defense	94–104	145
CHAPTER 7. Medical service of retrograde movements.		
SECTION I. General	105–107	158
II. Withdrawal from action	108–111	163
III. Delaying action	112–114	166
IV. Retirement	115	168
CHAPTER 8. Special operations.		
SECTION I. Attack of river lines	116–117	170
II. Defense against river crossings	118–120	172
III. Pursuit	121–123	173
IV. Other special operations	124–127	175
CHAPTER 9. Characteristics common to corps and army	128–131	178
CHAPTER 10. Medical service of the corps	132–148	184
CHAPTER 11. Medical service of the army.		
SECTION I. General considerations	149–153	199
II. The army surgeon	154–161	204
III. Army medical units	162–174	209
IV. Medical operations	175–182	225
V. Influence of tactical operations upon medical service	183–189	237
VI. Supply	190–193	241
APPENDIX I. Individual equipment of medical department officers and enlisted men		243
II. Medical department chests		251
III. Unit equipment of medical detachments		270
IV. Model forms		274
INDEX		279

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MEDICAL FIELD MANUAL

MEDICAL SERVICE OF FIELD UNITS

(This manual supersedes FM 8–10, November 27, 1940, and FM 8–15, February 25, 1941.)

CHAPTER 1

GENERAL

Paragraphs
SECTION I. General characteristics of medical service..... 1–11
II. General tactical considerations..... 12–15

SECTION I

GENERAL CHARACTERISTICS OF MEDICAL SERVICE

■ 1. STATUS OF MEDICAL DEPARTMENT.—*a.* The Medical Department is one of the services of the Army. It has the general functions of administration, supply, evacuation, and hospitalization.

b. The Medical Department includes the Medical Corps, the Dental Corps, the Veterinary Corps, the Medical Administrative Corps (and, in time of war, the Sanitary Corps), the Army Nurse Corps, enlisted men of the Medical Department, and civilian employees.

c. For further details see FM 8–5, FM 100–10, AR 40–5, and AR 700–10.

■ 2. FUNCTIONAL ORGANIZATION AT PRESENT.—The medical service of the United States Army is organized into five functional echelons. These are, from front to rear: unit medical service, division medical service, army medical service, and the medical services, respectively, of the theater of operations and of the zone of the interior. The first three of these echelons serve mobile tactical units and are, therefore, made up exclusively of mobile medical units. The last two echelons pertain to territorial commands and the medical installations thereof are, for the most part, fixed. The corps, which is a tactical unit occupying, in the chain of command, a position between the division and the army, has few medical responsi-

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bilities. Hence its medical service is, for all practical purposes, in the same medical echelon as that of the division.

■ 3. GENERAL DOCTRINES.—*a.* Commanders of all echelons are responsible for the provision of adequate and proper medical care for all noneffectives of their command.

b. Medical service is continuous.

c. Sick or injured individuals go no further to the rear than their condition or the military situation warrants.

d. Sorting of the fit from the unfit takes place at each medical installation in the chain of evacuation.

e. Casualties in the combat zone are collected at medical installations along the general axis of advance of the units to which they pertain.

f. Medical units must possess and retain tactical mobility to permit them to move to positions on the battlefield and to enable them to move in support of combat elements.

g. Mobility of medical installations in the combat zone is dependent upon prompt and continuous evacuation by higher medical echelons.

h. The size of medical installations increases and the necessity and ability to move decreases the further from the front line these units are located.

i. Medical units must be disposed so as to render the greatest service to the greatest number.

■ 4. GENERAL MISSION.—*a. Medical.*—The general mission of the medical service is to contribute to the success of military operations by application of technical knowledge to two major military problems:

(1) *Conservation of mobilized manpower.*—Military manpower is conserved by the physical selection of personnel to insure that only the relatively fit take the field; by the protection of troops against preventable hazards to health and fitness; and by the prompt and effective care of the sick and injured so that casualties may be converted promptly into replacements..

(2) *Prevention of adverse effects of unevacuated casualties upon combat efficiency.*—The accumulation of casualties within any combat unit restricts its movements; and lack of proper facilities for the care of the wounded has always exerted a serious depressing effect upon soldiers. These adverse influences can be prevented only by the prompt and

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orderly evacuation of casualties from forward areas in a manner calculated least to interfere with other military requirements and most to promote the morale and courage of remaining effectives.

b. Dental.—Dental service is an integral element of medical service. It contributes to the conservation of mobilized manpower by the prevention of dento-oral disease, and by the treatment or correction of such disease, injury, abnormality, or deficiency. In combat dental personnel assist in first aid, evacuation, and other general functions of the medical service.

c. Veterinary.—The mission of the veterinary service is the conservation of the animals of the Army, and of mobilized manpower insofar as it is influenced by the quality and sanitary condition of foods of animal origin.

■ 5. GENERAL RESPONSIBILITIES.—The general responsibilities of the medical service are—

a. The evacuation, care, and treatment of sick and injured men and animals in all situations.

b. The initiation of measures to insure the health of troops and animals.

c. The supervision of all public health measures in occupied territory and among prisoners of war or other persons who may constitute a potential danger to the health of troops or animals.

d. The procurement, storage, and distribution of medical supplies.

e. The preparation, classification, and preservation of records of sickness and injury for the information of higher authority, for use in future planning, and to assist in the adjudication of claims for disability, with justice both to the Government and to the individual.

f. The training of all Medical Department personnel and supervision of the training of all personnel in hygiene and first aid.

g. The submission of timely information and feasible recommendations to the proper authority upon all matters within the scope of medical service.

■ 6. ADMINISTRATION.—See FM 101–5.

a. General.—All functions of medical service which are associated in any way with command responsibility are ad-

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ministered through command channels. Other functions are administered through Medical Department channels.

b. Distribution of medical service.—(1) *Attached medical personnel.*—(*a*) Medical personnel are attached by Tables of Organization to each unit of an arm or a service, except medical, larger than a battalion, and to separate battalions and other units of comparable size. In special cases they may be attached temporarily to units smaller than a battalion.

(*b*) Veterinary personnel are attached to units whose animal strength is sufficient to justify their employment.

(2) *Medical units.*—All tactical units of combined arms and services include units of Medical Department troops, such as medical regiments or battalions, surgical and evacuation hospitals, medical depots, and veterinary companies and hospitals. Territorial commands may include any of the foregoing and, in addition, such other Medical Department units as hospital trains and ships, and fixed hospitals, both medical and veterinary.

(3) *Exempted Medical Department activities.*—In addition to the Medical Department activities in tactical and territorial commands there are certain others that are exempted from such jurisdiction and that function directly under the control of The Surgeon General. This class of medical units and installations comprises general hospitals in the zone of the interior, special service schools of the Medical Department, and other similar activities of a technical character that may be specifically designated by the War Department.

c. Medical command.—(1) An officer of the Medical Corps is provided on the staff of every unit to which medical troops are attached, of every unit of combined arms and services, and of every territorial command. This officer, the unit or area surgeon as the case may be, commands all Medical Department troops not assigned or attached to subordinate units of the command. He is responsible to his commander for initiating and recommending the necessary measures for the proper medical, dental, and veterinary service of the command, and for carrying out these measures in accordance with the decisions of the commander.

(2) Surgeons of commands are designated generically as the "surgeon," and specifically by the designation of the

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command to which each pertains; for example, the surgeon, communications zone; the surgeon, Second Army; the surgeon, 5th Division; the surgeon, 9th Field Artillery. When provided as assistants to the surgeon, the dental officer and veterinary officer so provided are known as the dental surgeon, and the veterinarian, respectively, of the command.

■ 7. SUPPLY.—*a. General.*—The Medical Department is charged by law and regulation with the procurement, storage, and issue of the items of special supply used in the care and treatment of the sick and injured, and of first-aid packets, foot powder, and litters for the use of all troops. Items of general supply required by the Medical Department are furnished by the Quartermaster Corps; and all items of special supply, other than those procured by the Medical Department itself, are furnished by the supply arm or service concerned.

b. Property exchange.—In transferring a patient from one medical agency to another, there is frequently certain medical property that cannot be separated from him without causing suffering or injury, such as blankets, splints, tourniquets, and litters. To prevent rapid and unnecessary depletion of the equipment of the transferring agency, the receiving agency turns over at once to the transferring agency a like number of the same items of medical property that it received with the patient. This procedure is termed "property exchange" and is employed in all medical units from the battalion medical section to the general hospital.

■ 8. PREVENTION OF DISEASE AND INJURY.—*a.* The prevention of disease and injury is one of the most important functions of medical service. Every contact and activity of the soldier which may affect his physical fitness is a proper concern of the surgeon. The prevention of injury is as important as, and generally less difficult than, the prevention of disease.

b. Physical condition is a critical factor in the combat efficiency of troops. Military history offers numerous examples of battles that were lost and campaigns that failed solely because of sickness among the personnel. The physical strain in modern warfare has increased the importance of physical condition. Situations arise in every war in which the health of troops must be temporarily subordinated to

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military necessity; but consistent disregard of the health of troops will, as it always has in the past, lead to disaster.

c. The Medical Department investigates problems of military preventive medicine and gives special instruction in this field to its officers. However, because of the rights and responsibilities of command, the Medical Department cannot effect the necessary measures for prevention of disease and injury except within its own organizations. The responsibility of a unit surgeon extends only to keeping the unit commander fully informed of the sanitary situation with appropriate recommendations for the correction of any defects. For further details see FM 8–40 and FM 21–10.

■ 9. EVACUATION.—*a.* Evacuation is the process of moving casualties from one medical installation to another farther to the rear. The term "chain of evacuation" is applied to the entire group of successive agencies and installations engaged in the collection, transportation, and hospitalization of the sick and injured. The forward terminus of a chain of evacuation is usually at an aid station; and the rear terminus at a general hospital.

b. Of all the tasks of the Medical Department, the most difficult, and in combat the most important, is the evacuation of casualties. Commanders of all echelons must comprehend the magnitude and the importance of this function. The operation of evacuation of casualties is of the nature of a major withdrawal. In operations against strong resistance as many as one-fifth of all troops engaged, and a much greater proportion of certain elements, may require evacuation within a relatively short period. Under the most favorable circumstances the numbers involved would make the task difficult; but the true proportions of the problem are revealed only by the other factors that must be combated in the operation. These are—

(1) The withdrawal must be made against a constant forward flow of troops and supplies, and interference must be kept to the minimum.

(2) Evacuees are unorganized, and they must be gathered as individuals from all units of the force. They are not self-supporting but require individual care and treatment through all stages of their withdrawal. A large proportion are unable to walk and must be carried each time they are moved.

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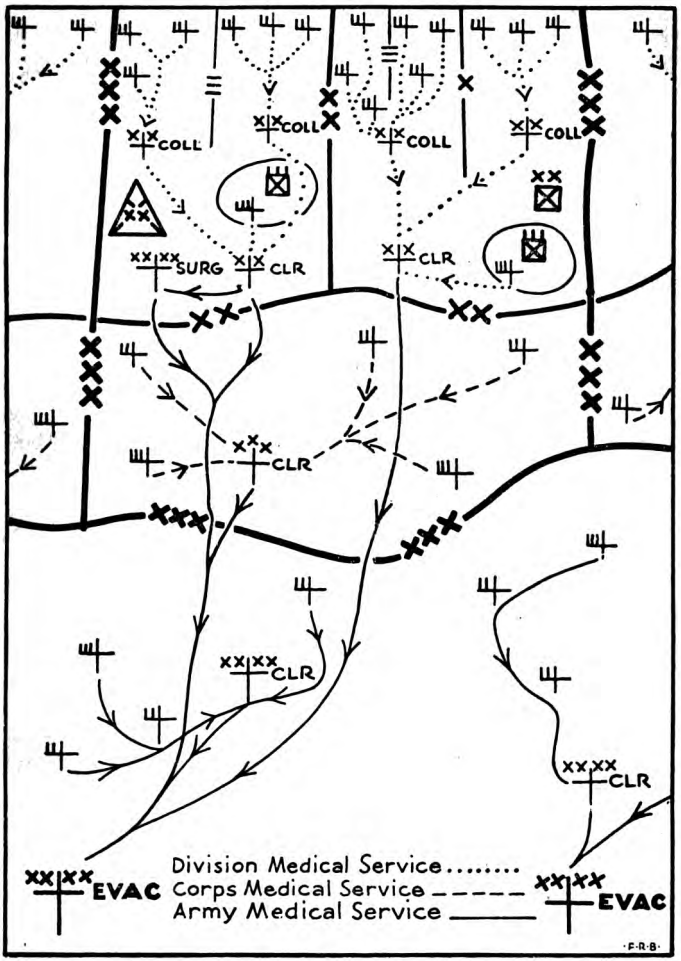


FIGURE 1.—Chains of evacuation within the army (schematic).

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(3) In forward areas especially, evacuation must be carried on at times under the most trying conditions of weather, terrain, and combat. Conditions which seriously impede all movement may increase the numbers to be evacuated.

■ 10. HOSPITALIZATION.—*a.* Casualties require care and treatment from the time they are received by the Medical Department until their final disposition. Many measures applied as first aid are of value in definitive treatment; and it is impossible to fix a point where emergency treatment ends and curative treatment begins. However, somewhat arbitrarily the term "hospitalization" is restricted to care and treatment in those medical installations designed and equipped to undertake major procedures in the definitive treatment of the sick and injured.

b. Hospitals are classified as "fixed" and "mobile." Fixed hospitals include general hospitals and station hospitals; and mobile hospitals comprise evacuation hospitals and surgical hospitals. However, regardless of its designation, a mobile hospital that cannot be evacuated of its patients becomes in effect a fixed hospital.

c. As soon as the medical service receives a sick or injured person who requires hospitalization, it is confronted with a choice between two alternatives. It must either move the patient to a hospital, or a hospital to the patient. Two factors govern the choice. First and most important is the military situation at the time, and second, the condition of the patient.

(1) It is obviously impracticable to undertake definitive treatment of sick and injured in areas subjected to intense hostile action. Aside from the element of danger, minor fluctuations in battle lines would expose patients and personnel to capture. In combat, then, the patient, regardless of his condition, must be moved to the hospital.

(2) On the other hand, every casualty evacuated must be replaced; so the evacuation of one man requires movement of two. The administration and operation of the replacement system are burdensome at best; and every replacement spared lessens the overhead required for this service. Furthermore, a replacement is rarely as valuable immediately to an organization as the veteran whose place he took. If a casualty can be made ready within a few days to resume his place in his organization, it may be more economical to move

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the hospital to him than to move him to a hospital. To evacuate all casualties under all conditions so far to the rear that replacements must be furnished is both uneconomical and undesirable. So, when the military situation permits, patients that will be fit for full duty within a short time may be retained within the division in a clearing station established by a division medical unit normally engaged in evacuation. It must be remembered, however, that division medical units must never be allowed to become immobilized with patients. Their primary function is evacuation in combat; and they must be free to discharge this function whenever combat is imminent.

d. The objective of all hospitalization is to return a maximum number of casualties to full duty within a minimum time. Such individuals because of previous training and experience are the most valuable of all replacements. Agencies charged with procurement of personnel should regard the disposition wards of hospitals as a preferred source.

e. A certain proportion of casualties recover without being fit for military duty. These must be classified, and such as are able returned to limited service. Those entirely unfit for further service are retained only until maximum improvement has been reached, when they are discharged from the service. The medical service of the Army cannot properly extend its facilities to individuals of no potential military usefulness; and, recognizing this, the Government has created other medical agencies to fulfill its obligations to the disabled.

■ 11. BASIC CONSIDERATIONS.—*a. Responsibility.*—Commanders are responsible for the medical service of their commands. Whether the command be large or small, and whether the exercise of the functions of command be complex or simple, the commander must be the controlling head. Decision as to a specific course of action in any given case is the responsibility of the commander alone. It is the task of the staff to furnish the commander with such information, data, and advice as he may require in reaching his decision. (See FM 100–5.) The authority to prescribe tasks for medical service involves a responsibility to provide adequate means for the accomplishment of those tasks. Like units in other

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arms and services, medical units are designed to carry usual or normal loads. In exceptional situations they require reinforcement.

b. Medical organization.—(1) Since the responsibility for medical service rests with unit commanders, medical organization must parallel tactical organization.

(2) The effectiveness of medical service frequently is a function of time rather than of thoroughness. Primitive measures, instituted early, often contribute more to the saving of life or limb than more elaborate measures after a delay. This requires that facilities for primary care and treatment be provided within small tactical units.

(3) Sick and injured are not cargo to which the ordinary rules of logistics can be applied. They are perishable; they must be prepared for evacuation; and they require constant care and treatment en route. To effect this a suitable installation to receive them must be located at each point in their journey from front to rear where either the character of the transport changes or the responsibility for evacuation passes to another agency. Motor transport has altered the relationship between time and space; but the relationship between time and the ability of a sick or injured man to withstand transportation remains unchanged.

c. Medical plans and operations.—Decision is a function of command; but it is a staff function to elaborate the details necessary to carry the decision into effect. Medical service must be planned and operated in conformity with the specific plans and general policies of the commander; and medical plans must be coordinated with other parts of plans. This requires that the surgeon be kept informed of the plans and intentions of the commander. (See FM 100–5.)

d. Continuity of medical service.—Medical service must be continuous. When an organization is mobilized it requires a function medical service. Medical units in sufficient numbers must be given the highest priority in any mobilization or concentraton. Sickness occurs during each hour of the day and night, regardless of the location or employment of troops. In combat, the necessity for organized evacuation arises the instant contact is gained. (See also pars. 13*d*, and *f*.)

e. Concept of patient.—The peculiar relationship between patient and physician that distinguishes the civil practice of

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medicine is incompatible with an efficient military medical service. In civil practice each patient is an entity, and all other considerations are subordinated to the alleviation of his individual disability. This concept of medical responsibility is obviously unsuited to the special conditions that obtain in war. Medical means, always limited, must be so distributed as to render the greatest service to the greatest number. The devotion of a disproportionate amount of time and effort to one casualty can only result in the neglect of many other casualties. The interests of the individual casualty must be subordinated to the interests of the mass of casualties. This is by no means to infer that military medical service should be disinterested or unfeeling. It is rather to insist that it can be really effective only when it is impartial and economical; and, until he fully accepts this point of view, the value of a medical officer is seriously impaired.

f. Sorting of casualties.—No patient must be permitted to proceed farther to the rear than his physical condition warrants, or the military situation demands. The sorting of the fit from the unfit is a most important function of every medical agency from the aid station to the general hospital. Every case evacuated without sufficient reason imposes an unnecessary burden upon three agencies: his organization, which must go short-handed until he is replaced; the replacement system, which must procure, equip, train, and transport a man to take his place; and the medical service, which must provide an additional berth in ambulances and trains, an additional bed in a hospital, and additional personnel to care for him. The problem created by one such case is not impressive, but the multiplication of these cases by indifferent sorting of casualties will place a strain upon administrative agencies that may jeopardize the success of the operations. Unnecessary evacuation of patients is of the nature of subsidized straggling. The mere fact that an illness or injury exists is not enough to justify the evacuation of the case. The illness or injury either must be incapacitating in fact or of such character that serious consequences may follow if the soldier be returned immediately to full duty. This decision is often difficult when there is little time for observing the case; and the benefit of all

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reasonable doubt must be given the case. However, with proper attention paid to the sorting of casualties, the number of cases evacuated unnecessarily can be greatly reduced.

g. Concentration of casualties.—There is an optimum degree of concentration of casualties. It is both uneconomical and inefficient to undertake the care and treatment of the sick and injured in small groups. Successive medical echelons collect casualties from two or more installations in their front until the limit of efficiency in concentration is reached. From this point medical service is expanded by installing parallel chains of evacuation.

h. Abandonment of casualties.—Abandonment of living casualties to the enemy is always destructive of morale even when it is not inhumane. In warfare against uncivilized peoples it is not considered even in desperate situations; and this has often been a limiting factor in operations against barbarous tribes. In rapid retrograde movements it is frequently impossible to evacuate all casualties with the facilities at the disposal of the medical service. In such a situation one or a combination of only three courses of action is possible: the speed of the movement may be retarded to permit evacuation with the facilities at hand; the medical service may be reinforced; or the casualties may be abandoned to the enemy altogether with a detachment of medical troops sufficient for their care. This is a command decision. It is the duty of the surgeon to present to the commander the data necessary for him to arrive at his decision, but the commander alone must decide whether or not to abandon his casualties in whole or in part.

SECTION II

GENERAL TACTICAL CONSIDERATIONS

■ 12. COMMAND AND STAFF RELATIONS OF SURGEON.—*a. With commander.*—The commander is responsible for his medical service. The surgeon is the special staff officer charged with keeping the commander informed as to the conditions and capabilities of the medical service, and with elaborating the details necessary to carry the decision of the commander, as it affects medical matters, into effect. (See FM 100–5.) As in the case of any staff officer, the commander may utilize

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the services of the surgeon in a purely advisory capacity, or he may delegate to the surgeon authority to act in the commander's name, within established policies, in affairs that fall properly within the jurisdiction of the medical service. The general responsibilities of the surgeon to his commander are—

(1) To inform and advise the commander upon all matters that affect the health of the command and the care of the sick and injured. The commander is charged with having ever before him a conception of the physical state of his command. Of certain factors governing physical state, the surgeon alone can inform him. (See FM 100–5.)

(2) To submit to the commander plans for the training and employment of medical units. Responsibility for the medical service includes the responsibility for its training. Every command that has a medical service comprises other subordinate elements. To act effectively a command must operate as a coordinated whole. The medical plan is a part of the administrative plan of a command, and must be fitted with the other subordinate plans. For this reason medical plans must be submitted for the approval of the commander. (See FM 8–55.)

(3) To exercise supervision for the commander over the technical aspects of the training and operation of the medical services of subordinate elements. This is purely a staff function and does not encroach upon the prerogatives of subordinate commanders. It is the duty of the surgeon to follow up the execution of the instructions issued by the commander which apply to any phase of medical service. He may call for such technical reports from surgeons of subordinate units as are necessary in supervising the execution of the work with which they are charged. (See FM 101–5.)

(4) When in addition to his staff duties the surgeon commands a medical unit, his responsibilities to his commander are the same as those of any subordinate commander. (See FM 100–5.)

b. With general staff.—The diversified activities of the medical service require the surgeon to deal with all sections of the general staff or, in commands lacking one or more general staff sections, with the staff officers discharging such general staff functions. Insofar as the surgeon is concerned

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with any of the matters listed below, he deals with the general staff sections indicated.

(1) *G–1 section.*—(*a*) Sanitation; measures for the control of communicable diseases of men and animals.

(*b*) Medical problems associated with prisoners of war, refugees, and inhabitants of occupied territory.

(*c*) Personnel matters, and replacements for medical units.

(*d*) Reports of human casualties.

(*e*) Employment of prisoners of war to reinforce the medical service.

(2) *G–2 section.*—(*a*) Nature and characteristics of weapons, missiles, gases, and other casualty-producing agents employed by the enemy.

(*b*) The character of the organization and operation of the medical service of the enemy, especially as it relates to new methods which may deserve study and trial.

(*c*) Communicable diseases in enemy forces.

(*d*) Supply of maps.

(3) *G–3 section.*—(*a*) Current information of the tactical situation; future plans.

(*b*) Mobilization and training of medical units; training of all personnel in military sanitation and first aid.

(*c*) Signal communications in medical installations.

(4) *G–4 section.*—(*a*) Tactical dispositions of medical units.

(*b*) Supply matters, both general and medical.

(*c*) Movement of medical units.

(*d*) Evacuation by higher echelons.

(*e*) Reinforcement of the medical service by a higher echelon.

(*f*) Hospitalization.

(*g*) Shelter for medical troops and installations.

(*h*) Coordination of nonmilitary welfare and relief agencies in medical installations.

(*i*) Traffic control and restrictions affecting medical vehicles.

(*j*) Reports of animal casualties.

(*k*) Animal replacements for medical units.

(*l*) All other matters which have not been specifically allotted to another general staff section, or wherein there is doubt as to which section has jurisdiction.

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c. With special staff.—The expenditure of much time and energy may be spared the general staff by the close cooperation of the surgeon with other members of the special staff. In war, time is ordinarily too precious to be wasted in ponderous methods of formal staff procedure. Informal agreements among special staff officers, succinctly submitted for approval when necessary, promote efficiency as well as foster the friendly personal relations that are so essential to the smooth functioning of a staff. The more important contacts of the surgeon with other special staff officers will be in connection with—

(1) *Engineer.*—(*a*) Water supplies; sewerage systems.

(*b*) Road construction and maintenance in and around medical installations.

(*c*) Construction, repair, and maintenance of roads and structures used by the medical service.

(*d*) Preparation of signs.

(*e*) Camouflage.

(*f*) Maps.

(2) *Quartermaster.*—(*a*) Disposition of the dead at medical installations; the sanitary aspect of the disposition of all dead.

(*b*) Bathing, delousing, and laundry facilities for all troops.

(*c*) Clothing for gassed cases, and other patients returning to duty.

(*d*) General supply of medical units.

(*e*) Procurement of land and existing shelter for medical troops and installations.

(*f*) Procurement and operation of utilities allocated to the Quartermaster Corps. (See FM 100–10.)

(*g*) Transportation, land and water; motor and animal transport of medical units.

(3) *Chemical warfare officer.*—(*a*) Gas defense of medical troops and installations; gas masks for patients.

(*b*) Types of gas used and methods of identification.

(*c*) Toxicology and pathology of new gases.

(4) *Adjutant general.*—(*a*) All official correspondence through command channels.

(*b*) Personnel matters.

(*c*) Postal service for medical units and installations.

(5) *Signal officer.*—Signal communication for medical installations.

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(6) *Judge advocate.*—(*a*) Questions of military and civil law.

(*b*) Administration of justice in medical units.

(7) *Headquarters commandant and provost marshal.*—(*a*) Physical arrangements for the surgeon's office.

(*b*) Custody of sick and injured prisoners of war.

(*c*) Disposition of stragglers and malingerers in medical installations.

■ 13. GENERAL TACTICAL DOCTRINES OF MEDICAL SERVICE.—From the mission, characteristics, and responsibilities of the medical service flow certain doctrines governing the employment of medical units. The more important ones are stated below, not for the purpose of limiting the initiative of medical officers but to furnish guides for planning and operating a medical service. Situations will arise wherein the rigid application of one or more of these rules may be inexpedient. Officers and men of all grades are expected to exercise a certain independence in the execution of tasks assigned to them and to show initiative in meeting situations as they arise. However, the experience of the many battlefields in which these doctrines were refined is too impressive to permit them to be dismissed lightly. (See FM 100–5.)

a. Medical service must be flexible. Allotment of medical means is based upon the military situation and the tactical plan obtaining at the time. Changes in the situation may require an immediate redistribution of medical means. An adequate reserve is the most positive assurance of flexibility. So long as the commander retains a reserve of combat elements, a commensurate reserve of medical means must be held to support them when they are committed. When his medical reserve has been exhausted, or depleted to the point of inadequacy, it is the first concern of the surgeon to reconstitute a suitable reserve from units already committed. If this is impossible, he must seek reinforcement. Mobility is another very important element in flexibility.

b. Mobile medical units must retain their mobility. The essence of medical support is in the maintenance of contact with combat elements. Medical units should retain complete mobility as long as possible by establishing their stations only partially until the demands of the situation require the commitment of their entire means. Once entirely

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committed, the only way the mobility of a medical unit can be preserved is by prompt evacuation. An immobilized medical unit can continue its support only in a "stabilized" situation. In the advance it must be replaced with another unit. In a retrograde movement it must be abandoned.

c. The zone of responsibility for evacuation assigned to any medical unit lies to its front rather than to its rear. No echelon of medical service is given a responsibility for evacuation that extends farther than its rearmost medical installation. This is based upon two considerations:

(1) The commander being responsible for evacuation, his responsibility may not be properly extended farther than the rear boundary of his command.

(2) The usefulness of a medical unit ceases when it loses contact with the elements it is supporting. It is manifestly impossible under all circumstances for a unit to maintain contact in two opposite directions. Since contact with forward elements is essential to medical support, the responsibility for contact must be confined to that direction.

d. In combat the necessity for medical operations arises the minute contact is gained. Casualties begin to accumulate as soon as troops come under fire, and their care and prompt evacuation is as important then as it ever will be. Medical units should be disposed in marching columns in a manner that will facilitate their entry into action without delay; and the surgeon must keep abreast of tactical developments in order to be prepared to initiate combat medical service at once.

e. Preferential medical support is given to combat elements with decisive missions. This accords with the tactical procedure of placing the bulk of the means with the decisive effort; but there is another reason for such a distribution of medical means. The task of the medical service is greatly influenced by the frontages occupied by, and the movement under fire of combat troops. In general, the decisive effort is expected to make maximum progress. This usually requires a denser concentration of troops than on other parts of the front, and more movement under fire. These two factors will produce a greater proportion of casualities than will occur in other parts of the command. (See also par 14.)

f. The operation of no essential medical installation may be terminated until its functions have been assumed by another agency. Evacuation is a continuous function, and one

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that cannot be suspended while adjustments are being made; nor can adjustments be made sharply. A reasonable time must elapse after the opening of the new installation before the old one is closed, in order that casualties already en route to the old one may be received. The length of this time lag will depend upon the agencies to be advised of the change, and the length of time required for them to divert their casualties to the new installation.

g. The support required by a forward medical unit is determined by the number of casualties and the rate at which they can be collected. Neither element is governing, and they must be considered together in a medical estimate of the situation and in the allotment of medical means. (See par. 17.)

h. Medical problems are highly correlated with tactical problems. The same hostile fire that stops combat troops retards or prevents the movement of casualties. Terrain that is difficult for troops to traverse is even more difficult over which to move wounded. Weather that embarrasses tactical operations usually increases the number of sick to be evacuated.

i. The military situation, terrain, communication, and availability of means govern the choice of transport by which casualties are moved. They must be moved by the safest, most comfortable, and most efficient transport available. Near the immediate front, litters carried by bearers are ordinarily the only feasible means. Wheeled transport is substituted for manpower as soon as the situation permits. If there is an insufficient number of ambulances, other vehicles returning to the rear must be pressed into service. As soon as practicable, hospital trains, hospital ships, or airplane ambulances are substituted for individual vehicles.

■ 14. DISTRIBUTION OF CASUALTIES IN TIME AND SPACE.—*a. General.*—Experience tables setting forth the distribution of casualties by units by days of combat do not present an accurate picture of the distribution of these casualties in the smaller units in time and space. If a division suffers 12 percent casualties in one day of combat, it is not to be inferred either that each subordinate unit of the division suffers equally or that ½ percent of the casualties occurs each hour of the 24, or even that 1 percent occurs each hour of daylight. A company may be almost destroyed in an hour;

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a battalion may lose 50 percent in a day; and other units may have no battle casualties. This irregular distribution of casualties in time and space may place an insuperable burden on certain medical agencies at a time when others are relatively unoccupied. This fact is an important consideration in medical planning.

b. Areas of casualty density.—Since units suffer unequally, it follows that casualties rarely are distributed evenly over a battlefield. They tend to be concentrated in "areas of casualty density." The probable locations of areas of casualty density can be deduced from an analysis of the tactical plan in connection with a study of the terrain. They will be found where the heaviest concentration of fire can be brought to bear upon the densest distribution of troops. This situation ordinarily obtains in those areas of major tactical importance, for here the commander masses his combat means and here the enemy must oppose to the limit of his strength. Troops moving under fire usually suffer heavier losses than those remaining in position. In the offensive the main attack is expected to advance more rapidly than secondary attacks. Also, there is ordinarily a greater concentration of troops in the main attack. For these reasons, unless no formidable opposition will be encountered, a higher casualty rate is to be anticipated in the zone of the main effort. It is therefore essential that the surgeon be given adequate information of the enemy situation and the plan for the employment of the unit to enable him to allot his medical means so that continuous preferential support may be given to troops in the probable areas of casualty density. This information must be available to the surgeon in time to permit medical units to be moved to battle positions before the action begins.

c. Natural lines of drift of wounded.—Seeking treatment for their injuries, wounded men who are able to walk make their way to the rear. Some follow the only route they know, which is the one over which their organization advanced, even though it is exposed to hostile fire. Others instinctively avoid enemy observation and fire, particularly machine-gun fire, by following ravines, stream beds, and other defiladed byways. These routes are known as the natural lines of drift of wounded, and must be considered in the location of all medical installations near the front.

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■ 15. EVACUATION LAG.—It is a practical impossibility to provide for the wounded soldier, an uninterrupted journey from the front to the fixed hospital in the rear. Delays are inevitable. Some are inherent in the system, others arise from exigencies of the military situation. The summation of such delays is known as the "evacuation lag." This is a factor of the greatest importance in the logistics of the medical plan. It tends to immobilize medical installations in the combat zone as well as to retard the rate of evacuation. The more important causes of evacuation lag are—

a. Delays due to enemy action.—Hostile fire may seriously interfere with or completely prevent all primary evacuation from the field or from aid or collecting stations for considerable periods of time. In position warfare where combat troops are protected by strong defensive works in open terrain, it is frequently impossible to remove casualties from aid stations except under cover of darkness.

b. Delays due to military requirements.—The movement of troops and supplies may halt the movement of wounded.

c. Difficulties in transportation by manpower.—Litter bearers may have to carry casualties for long distances. This movement may be under heavy fire, requiring circuitous routes or frequent halts. This is a most laborious task, and fatigue soon reduces the tempo of the work.

d. Treatment en route.—At each medical installation from front to rear patients are given such treatment as may be necessary to save life or limb, or better to prepare them for further movement. Certain patients are nontransportable for a time because of surgical shock, either from the injury or from necessary surgical procedures.

e. Transportation in convoy.—To promote efficiency through better control, ambulances are operated in convoys whenever the situation permits. This is habitual in rear of the division, and occasionally may be practiced in forward areas. Convoys arrive intermittently and evacuation is irregular. Hospital trains and ships and airplane ambulances also arrive at intervals.

f. Irregular distribution of casualties in time and space.—See paragraph 14.

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CHAPTER 2

MEDICAL SERVICE OF THE DIVISION

		Paragraphs
SECTION I.	General	16–26
II.	Attached medical personnel	27–39
III.	Collection	40–51
IV.	Ambulance evacuation	52–60
V.	Clearing	61–71

SECTION I

GENERAL

■ 16. DEFINITIONS.—The medical service of a division consists of two echelons: the attached medical personnel and the division medical service. The operations of attached medical personnel are controlled by subordinate unit commanders (see sec. II). The division medical service is operated directly under division control. In the several types of divisions it consists of—

a. Square infantry division.—A division surgeon's office and one medical regiment (square division and army).

b. Triangular infantry division.—A division surgeon's office and one medical battalion (triangular division and corps).

c. Cavalry division.—A division surgeon's office and one medical squadron.

d. Armored division.—A division surgeon's office and one medical battalion (armored division).

■ 17. GENERAL PROCEDURE.—The following general procedure governs the organization and operation of division medical service:

a. Close support of attached medical personnel.—Attached medical personnel furnish a continuous medical service to the subordinate units of the division. However, both the scope and the capacity of this service are limited, and prompt evacuation of noneffectives is vital to the effective operation of unit medical detachments.

b. Mobility.—Since the impetus of evacuation is from the rear, support of a forward element is impossible unless the

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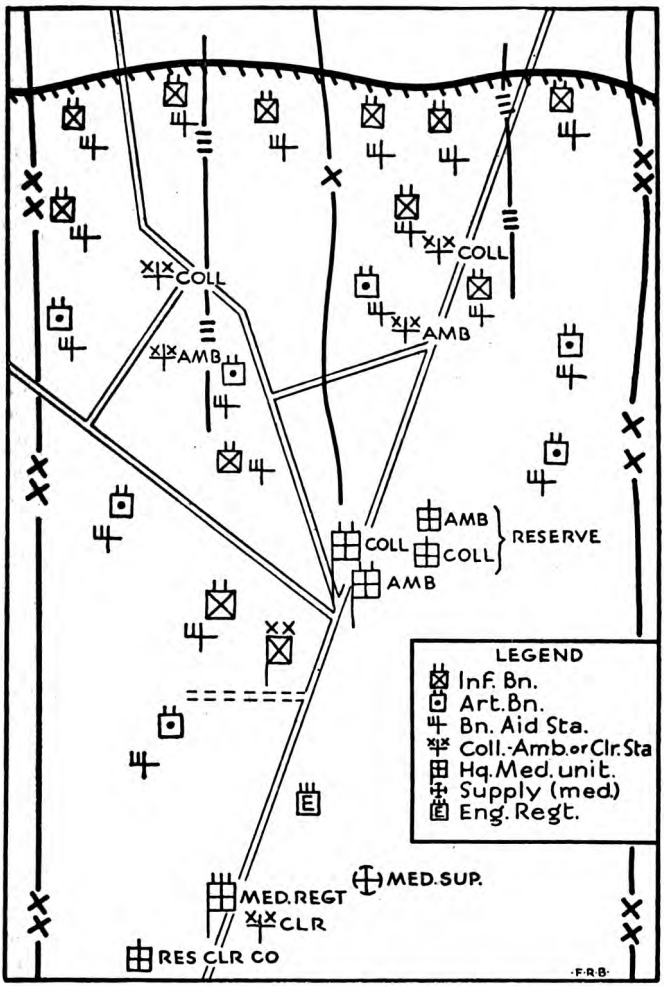


FIGURE 2.—Medical service of square division (schematic).

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supporting echelon is equally mobile; and relatively ineffective unless the supporting echelon has greater mobility. The mobility of collecting units must be comparable to that of the battalions or squadrons they are designed to support. The mobility of clearing units must be comparable to that of brigades or similar units. When, in the interest of the sick and injured, the mobility of a medical unit must be sacrificed to technical requirements, as in the case of evacuation hospitals, the mobility of the service rendered by such units is maintained by increasing their number and displacing them by echelon as the need arises. (See par. 13.) The mobility of a medical unit is not to be measured solely by the speed at which it can cover ground with its equipment and personnel loaded on transport. Rather it is to be measured by the speed with which it can perform its functions in one place, then suspend, load, move, and begin functioning in another place. The following factors must *all* be considered:

(1) Each trip in evacuation is a *round trip,* whether such a trip be made by a litter squad, an ambulance, or a hospital train. Consequently the evacuating agency must traverse at least twice the distance traversed by the combat troops it is supporting.

(2) The time required in establishing and closing its installation and in gaining contact with combat elements must be charged against mobility.

(3) During the time that a medical unit is unable promptly to dispose of the casualties in its care, it is completely immobile. Consequently the mobility and efficiency of its supporting echelon is a most important factor in the mobility of every medical unit.

c. Flexibility.—It must always be remembered that any tactical operation may, without much advance warning, depart from the initial plan, either as the result of enemy counteraction or of a decision of the division commander to exploit newly discovered weaknesses or errors on the part of the enemy. The medical service must, therefore, be able to meet without delay such sudden changes in the tactical situation; and, as in the case of combat elements, an adequate reserve is a most important contributor to flexibility. The use of standing operating procedures (see FM 8–55) must not be permitted to encourage rigidity in medical service, either in planning or in execution.

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d. Economy of force.—No more troops should be committed, and no more installations should be established, than are required for the task at hand or for the obvious needs of the immediate future. Once committed, considerable time is required to make a unit available for other employment; and the establishment of a station immobilizes that unit for a period, the length of which will depend upon the elaborateness of the station and the number of casualties therein.

e. Decentralization of control.—Until the advent of combat elements of very great tactical mobility—notably mechanized units—the question of the advisability of partially decentralizing the control of second echelon medical service through the attachment of fractions of the division medical service to subordinate combat elements of the division, arose only when a part of the division, such as a reinforced brigade or an infantry-artillery combat team, operated at such a distance from the bulk of division medical installations that a centrally controlled second echelon medical service was impracticable or impossible. In such situations it has been customary to attach to the distant force a suitable detachment of the division medical service. This detachment, operating as a unit controlled by the commander of the distant force, provides such second echelon medical service as its organization permits. However, in the rapid moving attacks of mechanized forces, and particularly when these are staged at some distance from supporting foot troops which might be counted upon to assist in the collection and evacuation of the casualties of the mechanized force, the problem is quite different. In such situations it will frequently be impossible for divisional medical service to establish and maintain the close contact with attached medical personnel that is essential to the evacuation of combat elements. While the ultimate solution of this particular problem must await further trials in the field, and possibly in combat, preliminary study indicates that it will frequently be necessary to reinforce unit medical detachments with personnel and ambulances of the division medical service and at the same time pass down to subordinate unit commanders the responsibility of collecting their own casualties and evacuating them to some designated central axis where the division medical service can take them over.

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In this connection it is well to remember that once in an ambulance a casualty ordinarily can be delivered to the division clearing station about as quickly as he can be transferred from one ambulance to another, and with considerably less discomfort to him, if not less danger to his life or limb.

■ 18. MEANS AND GENERAL METHOD.—Before going deeper into the consideration of the operation of the medical service, it would be well to follow the wounded man, from where he lies on the battlefield, through the various echelons of medical service in the combat zone, and review the means provided in the division for the accomplishment of the task.

a. Unit medical service.—(1) The unit medical service (attached medical) consists of the detachments of medical personnel with combat and service units of a command. The composition of these detachments is found in section II. They are integral parts of their units. These detachments establish battalion and regimental aid stations for men and animals of the units to which they belong.

(2) When soldiers are wounded on the battlefield, medical aid men of the battalion medical section, who have followed the troops closely in the action, render them first-aid treatment. Litter bearers pick them up later and carry them to battalion or regimental aid stations where they receive treatment and are returned to the front, or are held for further movement to the rear. The disabled animals of the unit are held together at the unit veterinary aid station by an analogous procedure. This medical personnel constitutes the unit medical service.

(3) The battalion medical service is the foundation stone upon which rests the whole medical organization for the care of battle casualties, for if casualties are not collected at the aid stations, they must lie on the field until they are found by litter bearers sent up later to search them out. This delay minimizes their chances of recovery and complicates and slows down the whole system of evacuation.

b. Division medical service.—This service is provided under second echelon service by either the medical regiment, squadron or battalion. For the organization and methods of employing these medical units reference should be made to FM 8–5 and sections III to V, inclusive.

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■ 19. ORGANIZATION.—*a. General.*—All division medical services include a division surgeon's office and a division medical unit comprising a unit headquarters, a headquarters and service element, a collecting element (or elements), and a clearing element (or elements), but the detailed organization of a division medical service varies with the type of division of which it is a part. The basic organizations of the several types of division medical units are shown in figures 3, 4, and 5. For details see Tables of Organization and FM 8–5.

b. Ambulance organization.—In all division medical units, except the medical regiment of the square infantry division, ambulance elements are integral parts of collecting units. The ambulance elements of the medical regiment, however, are organized into autonomous companies and the companies into a battalion. (See also par. 52.)

c. Veterinary elements.—Veterinary elements are included only in the division medical service of the cavalry division.

■ 20. EQUIPMENT.—*a. Classification.*—The equipment of an organization is divided into individual equipment and organizational equipment.

b. Individual equipment.—All officers of the Medical Dental, and Veterinary Corps, and all enlisted men of the Medical Department carry on their persons special equipment for the first-aid treatment of sick and injured men or animals. This equipment is specialized to meet the needs of medical, dental, and veterinary service. Corresponding with the degrees of technical training, the individual equipment of officers is more elaborate than that of noncommissioned officers; and that of the latter is more elaborate than the individual equipment of privates.

c. Organizational equipment.—The equipment of an organization is both general and special. The general equipment is that used in the general functions common to all military organizations, and the special equipment is that provided for the special functions of the unit. The special equipment of medical units is largely medical equipment.

(1) *Headquarters companies.*—Headquarters detachments and headquarters and service companies have no medical equipment. Their functions are administrative rather than being concerned with the care of patients. The division medical supply sections of these companies carry a small rolling reserve of medical supplies for the entire division.

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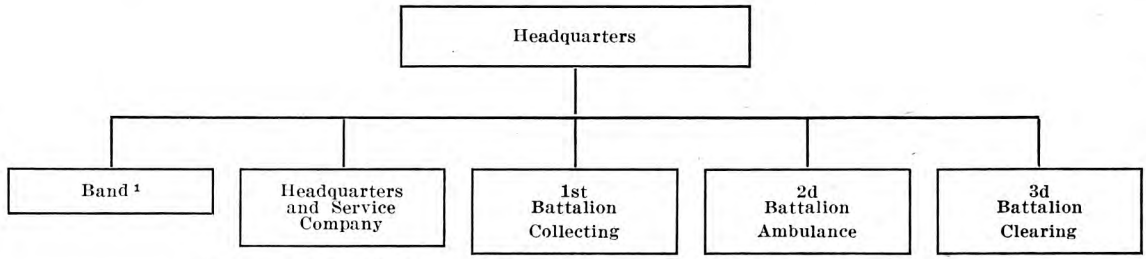


FIGURE 3.—Organization of medical regiment, square division, and army.

[1] The regimental band is organized only when specifically authorized.

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FIGURE 4.—Organization of medical battalion, triangular division, and corps.

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FIGURE 5.—Organization of medical squadron, cavalry division.

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The companies are equipped with motor transport and with special equipment required for its maintenance.

(2) *Collecting companies.*—The special equipment of a collecting company consists of a limited amount of tentage for the shelter of casualties; chests of instruments, medicines, dressings, blankets, and simple foods for the emergency care and treatment of the sick and injured; and litters upon which to transport those unable to walk. While this equipment is designed only for simple technical procedures, it is ample enough for the company to initiate combat and to furnish replacements of dressings to battalion aid stations in its front until the division medical supply system can be placed in operation. The company has the necessary motor vehicles to transport its equipment.

(3) *Ambulance companies and sections.*—Ambulance units have a supply of litters, blankets, and splints solely for property exchange. They have no unit medical equipment for their own use. Their special equipment consists largely of ambulances.

(4) *Clearing companies and platoons.*—The special equipment of clearing units includes tentage for the shelter of, and cots and chests of instruments, medicines, dressings, blankets, and foods for the temporary care and emergency treatment of the sick and injured. While the medical equipment of these units is somewhat more elaborate than that of collecting units, it is sufficiently simple to be readily transportable, but too limited to provide for involved technical procedures. Motor transport is provided for personnel and equipment.

■ 21. INSTALLATIONS.—When a medical unit establishes its temporary installation for combat and is ready to function, it is said to be *at station.* The installation is designated generically as a station, and specifically by the function it performs: for example, aid station, established by sections of medical detachments; collecting station, ambulance station, and clearing station.

■ 22. DIVISION SURGEON.—*a. General.*—The senior officer of the Medical Corps assigned to a division is the division surgeon. The fact that this same officer is also the commander of the division medical unit must not be permitted to obscure the sharp distinction between his functions in the two ca-

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pacities. As division surgeon, he is a special staff officer of the division commander, and all his duties and responsibilities are staff functions. As commander of the division medical unit, his functions are exclusively those of command. He may not evade any of the responsibility of either status by relinquishing one to devote his attention to the other; but he may delegate to assistants in both capacities authority to act in his name within the limitations he imposes. He is accounted for on the returns of the division medical unit.

b. Duties and responsibilities (see also par. 12).—The duties and responsibilities of the division surgeon are—

(1) To keep the division commander and general staff group constantly informed as to the conditions and capabilities of the medical service, and to assist the division commander in the exercise of such of his command functions as pertain to the medical service.

(2) To keep the surgeon of the next higher echelon informed of the medical situation within the division.

(3) To elaborate the medical details necessary to carry the division commander's decisions into effect. This is medical planning (see FM 8–55).

(4) To initiate measures for the prevention or reduction of disability and death in the command. Such of these measures as involve command responsibility are initiated in recommendations to the division commander, but such as pertain only to technical procedures in the care and treatment of sick and injured may be initiated by direct instructions to the medical officers concerned. The scope of this responsibility includes—

(*a*) Prevention and control of communicable and deficiency diseases. (See FM 8–40.)

(*b*) Improvement of physical condition by any practicable measures.

(*c*) Prevention of nonbattle injuries. The records and experience of the medical service are most important guides to the reduction of this source of disability.

(*d*) Reduction of battle injuries and of the mortality resulting therefrom. This responsibility does not encroach upon the well-defined responsibility of the chemical warfare officer for gas defense. Rather, it supplements it; and the surgeon must cooperate with him in reducing morbidity from toxic gases. In addition, the reduction of mortality in

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gassed patients is an exclusive responsibility of the surgeon. As regards other casualty-producing agents, both morbidity and mortality from missiles sometimes may be influenced favorably by the initiation of preventive measures.

(5) To initiate measures for the prevention of disease among, and the medical care and treatment of, prisoners of war and inhabitants of occupied territory.

(6) To advise the division commander upon the training of all medical personnel in the division, and to prepare for his action programs for all aspects of medical training within the division.

(7) To procure, store temporarily, and distribute all medical supplies required by the division; to study the medical supply requirements and make suitable recommendations to the division commander concerning policies governing medical supply. (See par. 26.)

(8) To prepare and forward consolidated reports and returns of the sick and injured and to furnish this information to other staff officers of the division who are concerned therewith.

(9) To make the necessary technical inspections, for the division commander, to insure that his instructions pertaining to the medical service, including the medical aspects of training, are being carried out.

c. Division surgeon's office.—(1) *General.*—The division surgeon's office consists of the commissioned and enlisted personnel provided to assist the senior medical officer of the division in his staff functions. It is not to be confused with the command post of the division medical unit. The personnel of the division surgeon's office are not a part of the division medical unit although, when circumstances permit, they may be attached thereto for quarters, rations, and general administration.

(2) *Location.*—The division surgeon's office is a part of, and located with, the rear echelon of division headquarters. This is not to say that the division surgeon's station is invariably in his office. Both his staff and command functions require his presence elsewhere during a large part of the time; and, especially during combat, he will be unable to discharge his responsibilities if he remains so far to the rear. Rather, this office is the administrative agency of the

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division surgeon, to be operated by one of his assistants at such times as the duties of the division surgeon require him to be absent from the office.

(3) *Personnel.*—(*a*) *Division surgeon.*—Although in charge of the office, the division surgeon is carried on the roster of the division medical unit (see *a* above). The division surgeon is provided with administrative and technical assistants. Both the number and the special qualifications of such assistants may be changed from time to time (see current Tables of Organization) as the situation indicates. The complement of such assistants now provided is listed below, and, while each is provided for a certain technical specialty, all are available for any duties that the division surgeon may require of them.

(*b*) *Assistant to division surgeon.*—This officer is a general administrative assistant. The division surgeon may employ him either as an executive assistant or in liaison with other sections of the division headquarters.

(*c*) *Medical inspector.*—A specialist in field sanitation and epidemiology is provided to supervise, under the division surgeon, all functions of preventive medicine. For further details see AR 40–270.

(*d*) *Dental surgeon.*—The senior officer of the Dental Corps assigned to the division is the division dental surgeon. He is charged with direct supervision, under the division surgeon, of those functions that pertain to the dental service. He advises and assists the division surgeon in dental training, operations, and supply.

(*e*) *Veterinarian.*—The senior officer of the Veterinary Corps assigned to the division is the division veterinarian. He is charged with direct supervision, under the division surgeon, of those functions that pertain to the veterinary service. He advises and assists the division surgeon in veterinary training operations and supply, and, in addition, he supervises veterinary sanitation and the inspection of forage and foods of animal origin. In those divisions not provided with a veterinary service, this assistant to the division surgeon is omitted.

(*f*) *Enlisted personnel.*—Noncommissioned officers and privates are provided for technical and clerical assistance, and as messengers and orderlies.

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■ 23. VETERINARY SERVICE.—*a. General.*—Except in the horse cavalry division, which includes a complete veterinary service, the veterinary service of the division is limited to the division veterinarian and his assistants who are charged with the inspection of foods of animal origin issued for consumption by the troops.

b. Veterinary units of cavalry divisions.—(1) *Functions.*—The combat functions of a division veterinary unit are to evacuate veterinary aid stations and clear the division of animal casualties. In other than combat situations, there is the additional function of temporary care of such disabled animals as will be fit for full duty within a short time.

(2) *Collection and evacuation.*—The collecting elements of a division veterinary unit evacuate the regimental veterinary aid stations, and conduct the animal casualties to the division veterinary clearing station. They operate, within their special field, in a manner similar to the joint action of collecting and ambulance elements in the field of human casualties. There is, however, one notable difference; the veterinary collecting elements establish no veterinary collecting station. Animals are prepared for evacuation within the veterinary aid stations; and the responsibility of the veterinary collecting element is limited to the delivery of these animal casualties to the veterinary clearing station.

(3) *Clearing.*—The clearing element of a division veterinary unit establishes and operates a veterinary clearing station, at which are concentrated the animal casualties of the division. Those requiring further evacuation are here transferred to a supporting veterinary unit of a higher echelon.

■ 24. REINFORCEMENT.—*a.* There would be an extravagant waste of such means much of the time if auxiliary units were designed to carry peak loads. Medical units, like all auxiliary units, are designed to carry normal loads. The medical load varies widely with the situation; and when it becomes heavier than the designed capacity of the medical service, the commander is confronted with a choice between two courses of action: to operate his medical service at decreased efficiency, or to reinforce it.

b. The source of reinforcements for the medical service may be within or without the division. The division medical service may be reinforced with units from higher echelons or

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from the GHQ reserve; and the medical requirements should be considered when other augmentation of division means, such as in artillery, is planned. In certain situations, and particularly in emergencies, it may be necessary to reinforce the medical service from sources within the division. This was done frequently in the first World War. Some of these sources are prisoners of war, impressed civilians, and, as a last resort, other troops of the division.

■ 25. SUPPORT BY HIGHER ECHELONS.—*a. Sources.*—The army is the normal source of support of division medical services. For all practical purposes, the administrative responsibilities of the corps are limited to those in connection with corps troops.

b. Evacuation.—Except in unusual situations wherein the division is compelled to evacuate its own casualties beyond its rear boundary, the responsibility of the division for evacuation terminates when casualties reach the division clearing station. Further evacuation is a responsibility of a higher echelon. Division clearing stations normally are evacuated by ambulances of the army medical service. Arrangements with the army for evacuation are made by the division through command channels. This is a G–4 function. The schedule may be arranged for evacuation at fixed hours, or it may provide for evacuation *on call* by the division.

c. Surgical hospitals—(1) *Definition.*—Surgical hospitals are mobile army units, designed for the express purpose of supporting division medical services.

(2) *Functions.*—They furnish special facilities for immediate surgical aid to such casualties as require it; and they hospitalize all casualties whose condition is too serious to permit further evacuation with safety. Such patients are known as *nontransportables.* In addition, when the division clearing station it is supporting must be moved, the surgical hospital may take over and care for all the casualties of the former until they can be evacuated.

(3) *Location.*—A surgical hospital is located as near as practicable to the division clearing station that it is to support. The ideal location is one in immediate proximity, so that nontransportables may be removed from the clearing station to the surgical hospital by litter squads. Suitable buildings are to be preferred, although the unit is equipped with tentage.

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(4) *Establishment.*—A surgical hospital must retain its mobility until the situation has crystallized sufficiently to indicate its best location. It is established after the division clearing station is in operation, but before the necessity to move the clearing station arises.

(5) *Operation.*—A surgical hospital rarely is operated under division control. It is usually operated under army control, but the operation of surgical hospitals may be decentralized to corps.

■ 26. DIVISION MEDICAL SUPPLY.—*a. Responsibility.*—The division surgeon, under the division commander, is responsible for the medical supply of the division. The division medical supply officer is his assistant in direct charge of medical supply.

b. Organization for division medical supply.—(1) *Division medical supply officer.*—This officer serves in three distinct capacities:

(*a*) He commands the headquarters detachment or headquarters and service company of the division medical unit.

(*b*) He is the unit supply officer of the division medical unit. In this capacity, he is a staff officer of the commander of the division medical unit. For his functions in connection with unit supply see FM 8–5.

(*c*) He is the medical supply officer of the division. In this capacity he is an assistant of, and responsible only to, the division surgeon. Within standing operating procedures and policies laid down by the division surgeon, he takes direct charge of the medical supply of the division, thus relieving his chief of the details incident to this function. He must look to the division surgeon, however, for basic decisions concerning medical supply.

(2) *Division medical supply section.*—In each headquarters detachment or headquarters and service company of a division medical unit, is a group charged with division medical supply. This group performs all functions associated with the procurement, storage, and distribution of medical supplies for the division. It is not to be confused with the unit supply group of the same company, which is concerned only with the supply of the division medical unit. (See FM 8–5.)

c. Procurement.—The division normally procures medical supplies from an army medical depot. They may be shipped

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to the railhead, or trucks of the division medical unit may be sent to the depot for them. One, or both, of two administrative procedures may be followed:

(1) *Formal or informal requisitions.*—The division medical supply officer prepares, for the division surgeon, requisitions upon the proper depot.

(2) *By drawing against credits.*—Credits may be established, in one or more depots, for the division by higher authority. The division may then draw, without further approval, against such credits until they are exhausted or discontinued.

d. Storage.—Except in permanent or semipermanent camps, the division operates no medical depot. The medical supply group does, however, carry in vehicles, a small rolling reserve of medical supplies against emergencies and to minimize the normal lag between requirement and distribution.

e. Distribution.—(1) *Division medical distributing points.*—The headquarters detachment or headquarters and service company of the division medical unit ordinarily establishes one principal medical distributing point, and may establish secondary points. The principal distributing point is located at a convenient site, usually adjacent the clearing station in combat, and in the bivouac of the division medical unit at other times. Other medical dumps may be established at collecting stations.

(2) *In other than combat situations.*—(*a*) *Requisitions by subordinate elements of the division.*—Each unit supply officer submits requisitions for the medical supplies required by his unit. This includes the unit supply officer of the division medical unit who, in one capacity, submits a requisition that he himself, in another capacity, will eventually fill. This is a paper transaction between the two supply groups of his company, and is necessary because of differences in accountability between the two echelons of supply. The approval of requisitions is a command function. The division surgeon reviews all requisitions for medical supplies and makes appropriate recommendations to the division commander. The latter may delegate his authority to the division surgeon to act upon such requisitions under such policies as he may lay down.

(*b*) *Accountability and responsibility.*—The division medical supply officer is accountable and responsible for no medical

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property other than the rolling reserve or that in his depot, when established. Upon receipt of supplies from a depot, he ships them to unit supply officers and drops them from his accountability. On the other hand, unit supply officers are accountable for all property issued to their respective units. It is this difference in property accounting that makes necessary the separation of unit supply from division medical supply within the headquarters detachments or headquarters and service companies of division medical units.

(c) *Delivery.*—Medical supplies may be delivered to unit trains at the railhead or at the division medical dump, or they may be delivered to unit distributing points by vehicles of the division medical unit.

(3) *In combat.*—The method of distribution of medical supplies in combat is most informal. Every consideration is subordinated to the objective of keeping medical units supplied. The division medical dump is established as soon as the clearing station is located. It is stocked initially with the rolling reserve. Auxiliary dumps may be established in the vicinities of collecting stations, or the stocks of collecting units may be augmented to enable them to supply forward units. Requests for supplies are sent to the rear by litter squads and ambulances; supplies are dispatched forward by trucks, ambulances, and litter squads.

SECTION II

ATTACHED MEDICAL PERSONNEL

■ 27. MEDICAL DETACHMENTS.—*a.* Tables of Organization provide for each regiment and separate battalion of every arm and service, except medical, a detachment of medical troops. The term "attached medical," applied to these detachments, may convey an erroneous impression of their relationship to the organizations they serve. By definition, both a battalion and a regiment are units composed organically of the troops of a single arm or service. For this reason any component of a battalion or a regiment made up of troops of another arm or service must be *attached* rather than *assigned.* However, the medical detachment of a unit occupies the same relative position in the unit as a company, troop, or battery.

b. These medical detachments are the foundation upon which is erected the entire structure of field medical service.

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They provide the primary medical care and treatment without which the value of the more elaborate arrangements in the rear would be considerably lessened. The ultimate recovery of a sick or injured man often depends upon the care and treatment given him in forward areas than upon the more refined procedures of fixed hospitals.

c. It must be remembered that the Medical Department has no command control of unit medical detachments. The surgeon of the next higher echelon exercises only technical supervision over their medical operations and training; and it is the unit commander who, alone having the necessary authority, is responsible for the general and tactical efficiency of his medical detachment.

d. The efficiency of his medical detachment should, then, be a matter of concern to the unit commander. Upon that will depend the comfort, if not the lives, of a large proportion of his command when in the field. Indifference to the selection and training of the attached medical personnel may result in an indifferent medical service when the test of battle is applied.

■ 28. ORGANIZATION OF MEDICAL DETACHMENTS.—For details see FM 8–5.

a. General.—A unit medical detachment is organized into a headquarters, a headquarters section, and a number of battalion sections corresponding to the number of battalions in the unit. The medical detachment of a separate battalion is organized into a headquarters and a battalion section.

b. Headquarters.—The headquarters includes such personnel as are assigned exclusively to the overhead for command and administration. In most detachments the headquarters will be limited to the detachment commander, since all other personnel normally on duty in the headquarters must, in combat, be made available for other duties.

c. Headquarters section.—The headquarters section comprises the personnel for—

(1) The detachment administrative overhead, exclusive of the detachment commander; and for the operation of the unit surgeon's office.

(2) The medical service of the unit headquarters and of such companies as are not parts of battalions, such as the headquarters company, the service company, the main-

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tenance company, etc. Ordinarily this includes a regimental aid station group; and, if the character of the unit served so indicates, and the headquarters section is of sufficient size, a litter squad may also be organized. Company aid men are not usually furnished to the nonbattalion companies.

d. Battalion sections.—(1) A battalion medical section provides medical service for a battalion at such times as it is impracticable to operate the medical service for the regiment as a unit. Its internal organization depends upon the characteristics of the troops it serves. Ordinarily it includes an aid station group and company aid men, two of the latter for each company of the battalion. To the battalion sections of regiments of infantry, and of artillery normally supporting infantry, are added one or more litter squads, but the battalion (or squadron) sections of highly mobile units, such as cavalry, horse artillery, and armored regiments, are too small to permit permanent litter squads. When litter squads are required in such sections, they must be constituted by limiting the company (troop or battery) aid men, or by withdrawing some of the aid station personnel, or both.

(2) The battalion section is a subordinate element of the regimental medical detachment, and not of the battalion it normally serves. It is not organized for administration and, if detached from the regimental detachment, must improvise such organization. In the interest of efficiency, a battalion section should be allocated habitually to the same battalion, but situations may arise when exceptions to this rule are indicated. When in the presence of the enemy, and when battalions are separated from the remainder of their regiments, battalion sections should be attached to their respective battalions. However, such attachment is of temporary character, even though it endures indefinitely.

e. Veterinary section.—When veterinary service is provided a unit, the personnel engaged therein are organized into the veterinary section of the unit medical detachment. This section is commanded by the senior officer of the Veterinary Corps present for duty therewith, who is also the unit veterinarian. It occupies a position in the unit medical detachment comparable to that of any of the other sections.

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■ 29. SUPPLY OF MEDICAL DETACHMENTS.—*a.* In other than combat situations, the detachment commander (unit surgeon) is responsible for the supply of the detachment. For details see FM 8–5.

b. In combat, the urgency of supply demands that methods be both simple and flexible. Supplies other than medical are procured as directed by the unit commander for all subordinate elements of the unit. Battalion surgeons and officers in charge of regimental aid stations procure medical supplies in any one of the following ways:

(1) By informal request sent to the medical unit in direct support, ordinarily a collecting company. Such supplies will be delivered by litter bearers or ambulances going forward.

(2) By informal request sent to the nearest medical dump. Delivery may be made by ambulance and litter bearers, by transport of the medical supply agency, by transport of the medical detachment or section, or by any combination of these means.

(3) In emergencies the detachment commander may direct the transfer of a part of the combat equipment of one medical section to another.

(4) In the same manner as set forth in *a* above.

(5) By any combination of the methods outlined above.

c. When there is property accountability, nonexpendable property, procured from agencies other than the unit supply officer, must be reported to him as soon as practicable in order that he may account for it in the prescribed manner.

d. For the system of exchange of medical property evacuated with a patient, see paragraph 7*b*.

■ 30. DISPENSARIES.—*a.* A dispensary is an establishment for the routine treatment of slightly sick and injured that are not incapacitated for duty. It is established only when the unit it serves is not exposed to battle casualties. This relative freedom from enemy action permits the use of more diversified equipment in a dispensary than in an aid station. (See par. 31.)

b. Considerable time and effort may be conserved for other important activities, such as training, if the principle of economy of force be applied in the routine care of the sick and injured. In a compact area one dispensary may serve the entire regiment; and the personnel therefor may be taken

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from the various sections and rotated so as to interfere least with other requirements. Dispersion of the elements of the regiment, however, will require the operation of one or more battalion dispensaries in addition to the regimental dispensary.

c. The hour, or hours, at which sick call will be held is prescribed by the unit commander upon the recommendation of the unit surgeon. Patients not fit for full military duty are retained in the dispensary until evacuated by the division medical service.

d. A prophylaxis station should be operated at all times in connection with a dispensary. Regardless of the fatigue of the troops or the isolation of the camp or bivouac, the necessity therefor will usually be apparent.

e. Under ordinary circumstances one chest, MD, No. 2 is sufficient equipment for a dispensary.

■ 31. AID STATIONS.—*a. General.*—An aid station is an installation for the first-aid care and treatment of the sick and injured, established under combat conditions by a section of a unit medical detachment.

(1) *Regimental aid station.*—The regimental aid station is established by the headquarters section. It ordinarily serves the regimental headquarters and such companies as are not parts of battalions, and is in the same echelon of evacuation as are battalion aid stations. This is to say, that rarely are casualties evacuated from a battalion aid station to the regimental aid station. Other employment of this aid station varies with the situation. It may take over the casualties of a battalion aid station that is forced to move before it can be evacuated. It may be established in the area of the regimental reserve so that when the reserve is committed, the medical personnel of the reserve may be free to accompany it without the delay incident to the disposal of casualties. In other situations the regimental aid station may not be established, the personnel of the headquarters being used elsewhere.

(2) *Battalion aid station.*—A battalion aid station is established by a battalion section to serve a battalion, including detachments.

(3) *Veterinary aid station.*—Since there is but one veterinary section in a regimental medical detachment, ordinarily only one veterinary aid station is established by the veterinary

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section. This serves all animals in the regiment. For veterinary service with cavalry see paragraphs 23 and 37.

b. Location.—Because of the greater importance of other requirements the physical features of the site of an aid station will vary from a comfortable building to a few square yards of ground without shelter from the elements.

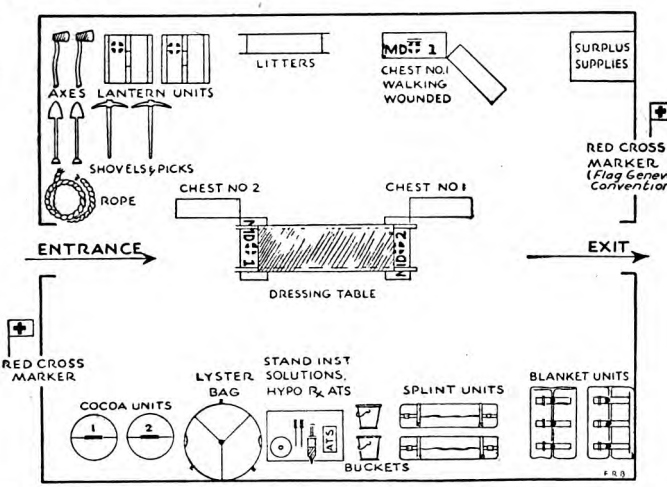


FIGURE 6.—One arrangement of aid station. (Arrangements vary with characteristics of site.)

(1) *Desirable features.*—It will rarely be possible to find a site that satisfies all requirements but the following features are desirable in an aid station site:

(*a*) Protection from direct enemy fire.

(*b*) Convenience to troops served.

(*c*) Economy in litter carry.

(*d*) Accessibility to supporting medical troops.

(*e*) Proximity to natural lines of drift of wounded.

(*f*) Facility of future movement of the station to front or rear.

(*g*) Proximity to water.

(*h*) Protection from the elements.

(2) *Undesirable features.*—The following features are highly undesirable, and are to be avoided whenever possible.

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(*a*) Exposure to direct enemy fire.

(*b*) Proximity to terrain features or military establishments that invite enemy fire or air action, such as prominent landmarks, bridges, fords, important road intersections, battery positions of artillery and heavy weapons, ammunition dumps and other distributing points.

(*c*) Proximity to an exposed flank.

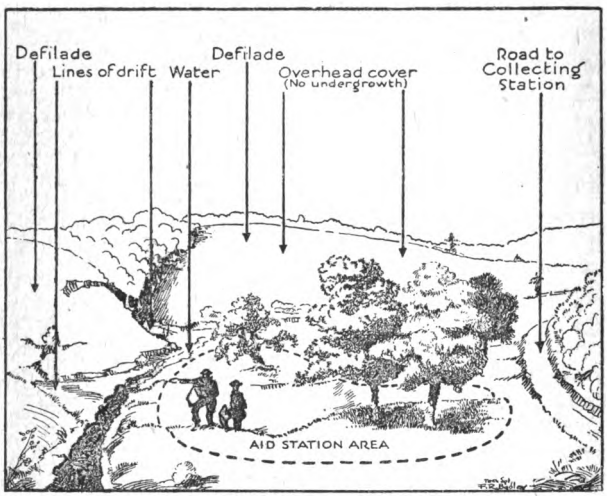


FIGURE 7.—Desirable aid station site (looking toward front).

(3) *Type location.*—The location of an aid station will vary within wide limits, depending upon the situation. No definite rules can, or should, be laid down, but the following may be offered as a general statement of the type location of an aid station of an infantry battalion in the front line: a centrally located site, from 3 to 800 yards in rear of the front line, combining as few undesirable features with as many desirable features (listed above) as can be had in the terrain available.

c. Functions.—The functions of an aid station are—

(1) Reception and recording of casualties.

(2) Examination and sorting of casualties; returning the fit to duty.

(3) Dressing or redressing of wounded; treatment limited to that necessary to save life or limb and to prepare

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patients for evacuation for short distances; administration of narcotics and prophylactic sera.

(4) Prophylaxis and treatment of shock and exhaustion with hot foods and drinks.

(5) Temporary shelter of casualties, when practicable.

(6) Transfer, *at the aid station,* of evacuees to the supporting medical echelon.

d. General procedures of operation.—(1) The aid station of a unit is established only when movement of the unit is unsteady, very low, or halted altogether (see (3) below).

(2) An aid station must keep at all times in contact with the unit it is supporting. It must be moved, by echelon if necessary, as soon as movement of the combat elements makes its location unsuitable.

(3) Only such part of an aid station is established as immediate circumstances require, or for which need can be foreseen. Rapid forward movement of combat elements is usually associated with small losses, and casualties can be collected by litter squads into small groups along the axis of advance and given first aid. Such casualties can be evacuated promptly by the medical unit in close support, thus relieving the need for an established aid station and permitting the medical section to keep up with the combat troops.

(4) An aid station is not the proper place for the initiation of elaborate treatment. Such measures will retard the flow of casualties to the rear and immobilize the station. (See *c*(3) above.)

e. Organization.—The organization of an aid station will depend upon the unit and the situation. In general, the functions of recording, examination, sorting, treatment, and disposition must be provided for in every situation. These will require one or more medical officers, assisted by noncommissioned officers and enlisted technicians. The allocation of personnel to these functions is a responsibility of the section commander.

f. Equipment (see FM 8–5).—The equipment of an aid station is limited to the instruments, medicines, foods, blankets, and litters necessary for the emergency care and treatment of casualties, and especially battle injuries. It is divided into loads that, when necessary, can be transported by hand. It is sufficiently compact to be transported on

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one vehicle of the light cargo type used in the unit, or on pack animals. At the same time it is ample enough to initiate and sustain combat until replenishment can be made by the division medical service. It is combat equipment, and the transport carrying it travels with that part of the unit train which carries spare ammunition and other matériel essential in combat.

g. Veterinary aid station.—See paragraph 37.

■ 32. LITTER SQUADS.—*a.* Litter squads consist ordinarily of four bearers each, fewer being unable, except in very short carries, to withstand the fatigue.

b. Litter squads operate directly under the control of the section commander unless, in an unusual situation, they be formally attached to a combat element. The section commander, after an estimate of the situation, allots to each squad a sector to cover or a combat element to support. They follow (or, in stabilized situations, take post in the vicinity of) the combat elements, maintaining as close contact with them as is consistent with reasonable assurance of sufficient safety to accomplish their tasks. When in the vicinity of the combat elements, they should, by voice or informal signals, maintain communication with company aid men. They remove nonambulant casualties, except the dead, which they tag, and direct the ambulant to the aid station, administering such first aid as is necessary. When necessary, they search the field for wounded.

c. Evacuation by means of litter squads is very slow—a round trip of 500 yards in each direction requiring, under best conditions, at least twenty minutes; and, at such a distance, a squad cannot be expected to maintain an average greater than two trips per hour. So long as the bulk of fighting was done by foot infantry, litter squads were a practicable, and often the only practicable, means of primary evacuation of the field. They are still necessary in the combat of foot troops, including the action of cavalry dismounted and of artillery in position. However, in fast-moving attacks such as those of armored forces, litter squads are too slow for any service other than ambulance loading or short carries to axes of evacuation, and the greater part of their functions must be discharged by vehicles.

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■ 33. COMPANY (TROOP OR BATTERY) AID MEN.—*a.* These are enlisted men of the medical detachment, usually privates, first class, or privates who are attached, when the situation so indicates, to a company, troop, or battery for the purpose of administering first aid as near as possible to the scene of the injury and before litter squads, or other agencies, can arrive. When so attached, a company aid man remains at all times with that company, bivouacking with it, messing with it, marching with it, riding with it on transport, and accompanying it into action.

b. The average allotment is two aid men per company or comparable unit, but this is by no means an invariable rule. Larger units, such as certain antiaircraft batteries, normally are allotted three aid men each. The detachments of certain service units are too small to permit more than one aid man per company, and, in some situations, the usual allotment of aid men may have to be reduced to provide more litter squads or to reinforce the aid station group. Whenever a unit normally rating aid men is so dispersed in small detachments that aid men would be able to serve only a small proportion of the unit, it usually will be more profitable to employ such medical enlisted men in other duties. The allotment of aid men is an element of the medical plan, arrived at after an estimate of the situation and requiring the approval of the unit commander.

■ 34. REGIMENTAL SURGEON.—*a. Designation.*—For the official title of surgeons of regiments see paragraph 6c. Generically, and when referred to in less formal language, they are known as "regimental surgeons."

b. Status and functions.—(1) The regimental surgeon has a dual status. He is a staff officer of the regimental commander and he is in immediate command of the regimental medical detachment. Such of his functions as pertain to the health and medical service of the command are exercised in his capacity of a staff officer. Those that are associated with the administration, training, and operations of the medical detachment are command functions. While certain of his duties involve both staff and command functions, the distinction between the two must be clearly recognized.

(2) He is responsible for the organization of the detachment, and the assignment of commissioned and enlisted per-

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sonnel to the several sections. He conducts so much of the training of the detachment as is not given in conjunction with the training of the combat elements of the regiment. He establishes and operates the regimental dispensary, and supervises the operation of battalion dispensaries. He makes the required medical inspections and keeps the regimental commander informed of the medical situation in the regiment.

(3) The regimental surgeon, as detachment commander, has the same supply responsibility as a company commander (see par. 29). As a staff officer of the regimental commander, it is his duty to inform the regimental commander of any deficiencies in items of medical supply issued to, and used by, the combat elements of the regiment.

(4) As the regiment approaches combat, his duties as a regimental staff officer assume increasing importance. He learns of the plans for the distribution and employment of the units of the regiment, of the opposition the various elements are expected to meet, and of the terrain over which they will operate. From this information he makes a medical estimate of the situation, deducing the probable areas of casualty density, and from this he indicates the areas to be reconnoitered for the sites of such aid stations as he controls; and advises the battalion surgeons in the preparation of their own medical plans. He does not, however, interfere in the tactical disposition of battalion sections that are attached to battalions except that, as a regimental staff officer, it is his duty to advise the regimental commander of faulty medical dispositions adversely affecting the unit medical service. He prepares the regimental medical plan and submits it to the regimental commander; if the regiment has a veterinary service this will include the veterinary plan. (See par. 37.)

(5) His methods of influencing the medical service within the battalions include such steps as establishing the regimental aid station for the purpose of relieving one or more battalion sections of the necessity for early establishment; reinforcement of one or more battalion sections with personnel from the headquarters or from other battalion sections; and securing medical supplies prior to combat and distributing them to the several sections in accordance with their needs as he foresees them.

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(6) During combat the regimental surgeon is concerned with reports of the progress of the fight. From these he visualizes the needs of the various medical sections and takes steps to assure replacements or reinforcements of personnel and replenishment of supplies. He keeps in touch with the forward planning of the regimental staff. When the regimental commander contemplates a special mission for one of the battalions, the surgeon can clear that battalion of wounded by directing the regimental aid station to move to the vicinity, or he may request special priority in the evacuation of the aid station of that battalion.

(7) One of the most important duties of the regimental surgeon in combat is keeping the medical unit in direct support of his regiment informed of the situation in his front. He should, as early as possible, inform the supporting unit of actual or contemplated changes in the tactical dispositions of his regiment, and of any other contingency that will affect the evacuation of his aid stations.

(8) The regimental surgeon is provided with one or more commissioned assistants. To such he may assign part of his duties, but none of his responsibilities. (See pars. 35, 36, and 37.)

c. Regimental surgeon's office.—(1) While the two functions are not to be confused, ordinarily the same overhead will operate both the detachment CP and the regimental surgeon's office. These personnel are taken from the headquarters section, and are available for other duties in combat.

(2) In combat, the unit surgeon's office should be immediately adjacent the unit CP in order that he may keep in constant touch with the situation. While he should not remain in his office at all times, when he leaves he should leave therein a responsible assistant.

■ 35. BATTALION SURGEON.—*a. Definition and designation.*—(1) Except in the case of separate battalions (see par. 39), surgeons are not provided as permanent staff officers of battalion commanders. When medical personnel are attached to a battalion, the senior officer of the Medical Corps, so attached, is the battalion surgeon. His official title is "the surgeon," followed by the designation of the battalion, for example, The Surgeon, 2d Battalion, 4th Infantry.

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(2) When a battalion section is not attached to a battalion for duty its commander has no staff functions. His command functions are comparable to those of a platoon commander; and he is, in addition, a general assistant of the regimental surgeon.

b. Duties and responsibilities.—The staff functions of a battalion surgeon are comparable to those of a regimental surgeon (see par. 34). His command functions are not as extensive. The battalion section has no normal administrative or supply functions, and assumes these only when it is impracticable for the detachment headquarters to undertake them. The supply responsibility of the section commander is limited to keeping the detachment commander informed of the status of the battalion section equipment and, in combat, the emergency procurement of supplies as outlined in paragraph 29. The duties and responsibilities of the battalion surgeon in combat are:

(1) He obtains, from the battalion commander, the available information and tactical plan of the battalion. He makes a medical estimate of the situation and, when practicable, a reconnaissance of possible aid station sites. He submits the medical plan to the battalion commander.

(2) He makes the necessary dispositions of the battalion section.

(3) He establishes the aid station when and where indicated, supervising its operation and personally assisting in the care and treatment of casualties whenever necessary.

(4) He supervises the employment of the litter squads.

(5) He keeps in contact with the battalion commander, and the forward planning of the battalion staff, and projects his own plan to correspond.

(6) He makes, or causes to be made, the necessary reconnaissances, when practicable, for relocation of the aid station.

(7) He keeps the battalion commander informed of the medical situation, and makes the necessary recommendations for reinforcement of the medical service.

(8) He furnishes information to the regimental surgeon, and to the medical unit in immediate support, of the situation in his front with such requests for special support or immediate evacuation of his casualties as may be necessary.

(9) He performs such other duties as the battalion commander may require.

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■ 36. DENTAL SERVICE.—*a. Organization.*—(1) Personnel of the dental service, both commissioned and enlisted, ordinarily are assigned to the detachment headquarters. The senior dental officer is the unit dental surgeon. As an assistant of the unit surgeon, he supervises the dental service of the unit.

(2) Each dental officer is assigned, for duty, one enlisted assistant, who is at his immediate disposal for technical training and employment. Additional enlisted men may be allocated to the dental service. Enlisted men of the dental service are trained in the general duties of the medical soldier and are available in combat for any duty that may be required of them.

b. Equipment.—The unit equipment of a medical detachment includes a portable dental dispensary for each dental officer authorized by Tables of Organization. In addition, all dental officers and dental assistants carry individual equipment of a technical nature.

c. Employment.—(1) *In other than combat situation.*—(*a*) The functions of the dental service are: dental inspection and classification of all troops in the unit; supervision of the instruction in oral hygiene; and the treatment or correction of dento-oral diseases, injuries, abnormalities, and deficiencies.

(*b*) Dental officers operate one or more dental dispensaries, ordinarily combined with regimental or battalion dispensaries. They may be attached temporarily to battalions that are located in areas inconvenient to the regimental dispensary.

(2) *In combat.*—While the technical training and skill of the dental service is to be utilized in its own field whenever indicated, the functions of first aid, emergency care, and evacuation of casualties become the paramount responsibility of the medical service in combat. The dental personnel are employed in combat as any other personnel of the medical service. They may be used in the regimental aid station, or attached individually to any battalion section.

■ 37. VETERINARY SERVICE.—*a. Organization.*—(1) Veterinary service is included in the medical service of only those units in which there are animals.

(2) By reason of its distinctive field of endeavor, the vet-

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erinary service is granted the degree of autonomy required for the proper discharge of its functions. The personnel of the veterinary service, both commissioned and enlisted, is organized into the veterinary section of the regimental medical detachment. The senior veterinary officer commands this section and, as the unit veterinarian, he is an assistant of the unit surgeon.

(3) The veterinary section depends for supply and administration upon the detachment headquarters; and the responsibility of the section commander in these matters is the same as that of a battalion section commander. (See par. 35.)

b. Equipment.—The veterinary section is provided unit dispensary and combat equipment, in addition to the individual equipment of its officers and enlisted men, sufficient for the routine care and treatment of slightly sick and injured animals and for the first-aid treatment and evacuation of battle casualties among animals. Transportation, either pack or wheeled, is furnished for the unit equipment.

c. Employment in other than combat situations.—The principal functions of the veterinary section in other than combat situations are—

(1) Care and treatment of slightly sick and injured animals, complete recovery of which within a reasonable time is expected.

(2) Classification of other disabled animals into salvageable and unsalvageable, arranging for the evacuation of the former and destroying the latter.

(3) Inauguration of measures for the prevention and control of communicable diseases in animals.

(4) Sanitary supervision of stables, corrals, and picket lines.

(5) Supervision, for the commander, of the shoeing, fitting of equipment, and general care and handling of animals.

(6) Sanitary inspection of forage and of foods of animal origin issued for consumption by the troops of the unit.

d. Employment in combat.—(1) *General.*—With the exception of continued treatment of slightly disabled animals, all functions outlined in *c* above, must also be discharged in combat; but, as in the case of medical service, they are subordinated to the care and disposition of battle casualties.

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(2) *Unit veterinarian.*—The unit veterinarian, when combat is imminent, makes such reconnaissance as is practicable for suitable sites for a veterinary aid station (or stations), and recommends one or more to the unit surgeon. The latter coordinates the requirements of the veterinary service with other requirements, selects a site (or sites) for the veterinary aid station(s) and includes such in the unit medical plan. The unit veterinarian establishes and operates the veterinary aid station. He directs the veterinary service of the unit. He furnishes necessary information to the unit surgeon, and to the veterinary unit in immediate support of his aid station.

(3) *Veterinary aid station.*—(*a*) *Organization.*—Ordinarily only one veterinary aid station is established for each regiment or unit of comparable size. When a battalion or squadron is operating at such a distance as to make evacuation difficult or impossible, the veterinary section may be split and may operate two veterinary aid stations. In small veterinary sections, all personnel are required for the operation of the veterinary aid station. In larger sections it may be advantageous to attach, temporarily, veterinary aid men to squadrons or battalions and, in mounted cavalry action, one to each troop. (See par. 33.)

(*b*) *Location.*—Insofar as they apply to the care, treatment, and evacuation of animals, the characteristics of a location for an aid station, as given in paragraph 31*b*, are desirable for the location of a veterinary aid station. Areas of animal casualty density may be expected where animals are most numerous.

(*c*) *Functions.*—The functions of the veterinary aid station are: reception and recording of animal casualties; first-aid treatment of sick and injured animals; prompt return to organizations of such animals as are fit for further duty; collection for evacuation of salvageable animals that are temporarily incapacitated for duty; destruction of all nonsalvageable animals; and transfer, *at the veterinary aid station,* of animal evacuees to the supporting veterinary echelon. The veterinary aid station must not become immobilized by undertaking definitive care of disabled animals. Such animals as cannot be returned to duty or prepared for immediate evacuation must be destroyed.

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■ 38. MEDICAL DETACHMENTS OF UNITS OF VARIOUS ARMS AND SERVICES.—*a. General.*—The basic function of a medical detachment, regardless of the unit to which it is attached, is to provide primary medical care and treatment. However, while the function is invariable, the methods of discharging that function depend upon the situations created by the tactical employment of the unit which, in turn, are governed by the special characteristics of the unit or the general characteristics of the arm or service to which it belongs. These variations in situations and methods require appropriate modifications of the internal organization of the sections of unit medical detachments.

b. Infantry.—(1) *Rifle units.*—(*a*) The characteristics of infantry that influence the organization and employment of its medical service are:

1. The battalion is the basic tactical unit. It may operate over relatively large areas and occupy frontages varying between 500 and 3,000 yards.
2. Normally, infantry is exposed to the fire of all types of weapons and to air action; and usually the bulk of hostile fire is directed at infantry.
3. The casualty rate of infantry is higher than that of any other arm or service.
4. Infantry must be able to maneuver and to fight over all kinds of ground.

(*b*) The medical detachment of an infantry rifle regiment must, therefore, reflect these characteristics in—

1. Ability to provide, when indicated, an autonomous medical service to each battalion.
2. A higher ratio of medical personnel to combat personnel than in detachments of units of any other arm or service.
3. A means of primary evacuation from the field which can function on any kind of terrain over which infantry can fight—litter squads.
4. Mobility at least equal to that of the infantry rifle regiment, whether transported in trucks or marching on foot.

(2) *Armored divisions.*—The infantry regiments in armored divisions combine normal infantry operations with ability to fight, under proper conditions, from moving vehicles. This additional characteristic indicates that the usual unit medical

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service of an infantry regiment should be augmented with some more rapid means of primary evacuation than litter squads. The addition of cross-country ambulances to the matériel of such detachments will satisfy that requirement.

c. Cavalry.—(1) *Horse cavalry.*—(*a*) The characteristics of horse cavalry that influence the organization and employment of its medical service are:

1. The squadron is the basic tactical unit. It is a smaller organization than the infantry battalion.
2. The essence of cavalry action is maneuver. All services with cavalry must be highly mobile.
3. Cavalry frequently operates at considerable distances from supporting troops.
4. The casualty rate is, in general, less than that of infantry. Cavalry is not designed to assault strongly defended positions nor to make a determined defense against strong attacks by infantry.
5. Cavalry fights mounted and dismounted.
6. Animals are the principal means of transportation of horse cavalry.

(*b*) The organization and employment of medical detachments of units of horse cavalry follow, in general, those of medical detachments of infantry units. The smaller size of the detachments and the rapidity of movement and dispersion of the elements of cavalry units make the collection and evacuation of casualties difficult. The only favorable factor is that casualties are rarely as heavy as in infantry units. The principal features of medical detachments of cavalry units that distinguish them from those of infantry units are:

1. *Litter squads.*—The small size of the squadron sections permits not more than one litter squad per section if an aid station is operated, and even this squad must be constituted at the expense of half the troop aid men and by withdrawing one other man from the aid station group. If no aid station is established, additional litter squads may be constituted. However, the use of cavalry mounts in primary evacuation will partially offset the need for litter squads.
2. *Aid station.*—It is rarely feasible to establish an aid station in a mounted action, and it may not be

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practicable to establish one in a rapidly moving dismounted action. First aid is rendered on the field; wounded troopers able to ride are directed to the rear, while those unable to ride are assembled along the axis of movement to be evacuated by a supporting echelon.

3. *Evacuation.*—Evacuation may be difficult. The operations may be at such a distance, or movement be so rapid, that supporting medical echelons cannot maintain contact. Lines of communication may be interrupted. In these events, casualties must either be carried with the command or abandoned—in the latter case, in friendly hands if possible. To lessen the dependence of medical detachments upon supporting echelons, and to facilitate the removal of casualties from the field, one motor ambulance is provided for the detachment of each regiment of horse cavalry. In situations where adequate support of unit medical detachments is difficult or impossible, such detachments should be reinforced with additional ambulances from the division medical service.

4. *Veterinary service.*—The medical detachment of a regiment of horse cavalry includes a veterinary section.

(2) *Mechanized units.*—See *g* below.

d. Field artillery.—(1) The characteristics of field artillery that influence the organization and employment of its medical service are:

(*a*) The battalion is the basic tactical unit. When it is a part of a large force of artillery, the area assigned the battalion is relatively small and, within the battalion area, the batteries are usually echeloned only sufficiently to avoid too compact a target. (See FM 6–20.)

(*b*) When in position, field artillery units are rarely exposed to small-arms fire.

(*c*) The casualty rate is less than that of infantry and casualties tend to occur at irregular intervals. The damage to its matériel makes it desirable, in the absence of other considerations, for an artillery unit to change its position when effective fire is brought to bear against it.

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(*d*) A battalion position is a relatively fixed arrangement. Artillery does not maneuver while actually engaged. Change of position is a definitive operation, and tactical employment ceases during movement.

(*e*) The majority of artillery positions are farther to the rear than collecting stations.

(2) The organization and employment of medical detachments of field artillery units reflect these characteristics in—

(*a*) *Litter squads.*—With two exceptions, battalion medical sections in field artillery units do not include permanent litter squads. The compact battalion position makes the distances between battery positions and the aid station relatively short, and casualties can be carried this distance by battery aid men, with or without assistance from artillery personnel. The organic ambulances (see (*c*) below) may be used for this purpose if distances are great and their use is practicable. Searching of the field for wounded is rarely required. The two exceptions are the battalion medical sections of the division artillery, triangular division, and of the 75-mm gun regiments, each of which is large enough to permit the detail of one litter squad.

(*b*) *Aid station sites.*—The general requirements of site for an aid station are the same as those of infantry. However, the location of the aid station with reference to other elements is governed by different considerations. It should be conveniently located, either within or immediately adjacent the battalion position. It may be on any edge of the position, including the forward edge. The terrain may be such that satisfactory protection can be had near the center of the position.

(*c*) *Evacuation of aid stations.*—The fewer casualties and the relatively greater stability of the aid stations permit casualties to be better prepared in field artillery aid stations for evacuation than is ordinarily feasible in the aid stations of infantry units. For this reason, as well as the fact that it would frequently require a forward movement of casualties, the casualties of a field artillery aid station rarely pass through a collecting station but are evacuated directly to the clearing station. Field artillery aid stations may be evacuated on call by ambulances of the division medical unit (see sec. IV). However, motor ambulances are organic equipment of all medical detachments of field artillery units, allotted

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on the basis of one per battalion medical section. With this equipment the medical detachments of field artillery units may evacuate their own aid stations. It would be difficult to defend, in the light of modern field medical service, this practice of dividing the responsibility for the evacuation of field artillery units between the unit and the division (or other comparable) medical service. Like many other practices, it appears to have survived largely as a custom. When the Ambulance Corps was first created in the Army of the Potomac, in 1862, for reasons that were sufficient at the time, exception to the general rule of the control and employment of ambulances was made in the case of field artillery units; and an organic ambulance was assigned to each battery. Most of these reasons have long since ceased to apply, but the tradition persists.

(*d*) *Veterinary service.*—In units of horse, horse-drawn, and pack artillery, a veterinary section is a component part of the unit medical detachment.

e. Antiaircraft artillery.—Procedures laid down for the medical service of field artillery apply, in general, to the medical service of antiaircraft artillery. (See paragraph *d* above.) Unless antiaircraft artillery is plentiful, the dispersion of the units will ordinarily be greater than in the case of field artillery, with reference both to battalions and to batteries within a battalion. This dispersion adds to the difficulties of medical service, but this disadvantage is somewhat offset by the lower casualty rate. Antiaircraft units also may profit by incidental medical service furnished by other units in the immediate vicinity. The larger batteries are provided with three battery aid men instead of the usual two.

f. Combat engineers.—(1) *Characteristics.*—Combat engineer units function primarily in engineering missions, but they may also engage in combat in the role of infantry. Both battalions and companies are smaller than their infantry prototypes.

(2) *Organization.*—The organization of the medical detachment of a combat engineer unit is designed to serve the unit in its primary function. Battalion sections are small, and only one company aid man is furnished each company in the usual situation. The employment of the detachment depends upon the employment of the engineer unit.

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(*a*) *In engineering missions.*—The unit is frequently dispersed, even companies and platoons being separated. The scattered elements obtain incidental medical service from other units in their vicinities, and regimental or battalion dispensaries are operated at the headquarters.

(*b*) *In combat missions.*—The medical service is exactly like that of infantry. The small size of the detachment makes it necessary that it be reinforced, particularly with litter bearers, when it engages in combat. Ordinarily, the only source of reinforcements will be the engineer unit.

g. Armored units.—(1) The characteristics of armored units determining the organization and employment of their medical service are—

(*a*) Great mobility, cross country as well as on highways.

(*b*) Although capable of engaging in all forms of combat, their primary role is in offensive operations against objectives deep in the hostile rear.

(*c*) Lines of communication frequently are insecure or interrupted altogether, and service elements must be self-sufficient for several days of operations.

(*d*) Combatants fight in armored vehicles.

(*e*) Oral orders, disseminated by radio, are the rule.

(*f*) Maneuver is rapid, and attacks are delivered at high speed. Speed, *speed,* SPEED!

(*g*) After initial successes, reorganization is limited to essentials and exploitation is begun without delay.

(2) Unit medical service of armored units, to be of any value whatsoever, must be adapted to the peculiar characteristics of such units. While it may be true that the advent of armored forces has not changed basic tactical principles, the technique of the application of those principles has been modified significantly. Corresponding modifications of the technique of unit medical service are mandatory. Any attempt merely to adapt the medical service of foot troops to armored units will fail because of the speed at which such units move and the extent of the areas, particularly in depth, over which they attack. An aid station will have lost contact before it is half established; and, by the time that the division medical service can have established contact with all aid stations, the armored division will have reorganized and moved on. The medical service of an armored unit must be based upon the following premises:

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(*a*) Contact with combat elements must be maintained at all times. This requires that the mobility of the medical service—not to be confused with the mobility of medical vehicles—be at least as great as, and preferably greater than, that of combat elements. It must be remembered that those medical vehicles transporting casualties to the rear must traverse at least twice the distance traversed by the unit as a whole. Nor is the mobility of medical service measured entirely by the speed of its transport; the amount of suspension of movement required in the collection and care of casualties may prove to be an even greater factor in the mobility of the medical service. This latter factor then must be reduced to the minimum.

(*b*) Combat elements, except for brief periods devoted to reorganization, are in constant movement during the times that battle casualties must be collected and evacuated. It is futile to plan any medical service that requires appreciable suspensions of movement in the discharge of these functions.

(*c*) Casualties will occur in moving vehicles. See *b*(2) above, for the medical service of the infantry regiment of an armored division. If the vehicle is disabled, it must be reached by medical personnel as soon as possible. If the vehicle is able to continue the attack, the casualty may be carried with it until that phase of the attack is completed. However, the experience of the first World War showed that casualties in armored vehicles frequently interfered with the remaining able-bodied—either physically or morally—and that often it was better to remove them from the vehicle at once, leaving them on the ground for medical personnel to collect and evacuate. In any event, to be of value, unit medical personnel must follow assault echelons as closely as is consistent with reasonable safety, rendering first aid and evacuating casualties from the field as rapidly as possible. Either primary medical service as soon as possible after injury—for therapeutic reasons or moral effect—is essential, or it is not. If not essential, it should be discontinued in all units. If essential, it must be provided armored units.

(*d*) Chains of evacuation *within the armored division* will be relatively short when such a division is employed in its primary role in offensive operations against objectives deep in the hostile rear. In such situations, the necessity for provid-

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ing security in all directions will limit the area that the divison can occupy.

For units fighting on foot, aid stations are established because considerable time is required to remove a casualty from the firing line; collecting stations are established because further time is consumed in bringing the casualty from the aid station to an ambulance loading post. Facilities for the emergency care and treatment of the casualty must be provided at intervals. However, if the casualty could be loaded on an ambulance at or near the scene of his injury, he could be delivered at the division clearing station in less time than it would require a litter squad to carry him to an aid station. In such a case the interposition of intermediate medical agencies not only would be an inexcusable waste of means but would also be actually detrimental to the patient. In the typical situation, this is exactly what will occur in the armored division. The casualty must be picked up by ambulance at, or near, the scene of his injury, or from his vehicle in an assembly area, because other means of primary collection are too slow to be tolerated in this type of unit. Once in this ambulance, he can be delivered to the division clearing station as soon, for all practical purposes, as he can be delivered to any intermediate medical agency. And, once at the clearing station, his disposition is final as far as the division itself is concerned. If, then, ambulances of attached medical personnel are to be used in primary collection of casualties, they should deliver such casualties directly to the clearing station. (See also par. 87.)

(*e*) Oral orders, disseminated by radio, will be the rule, especially in smaller units. It is essential that the unit surgeon know the plan of the unit commander. If the only means of his learning this plan is through the use of radio, it follows that he must be provided with a radio. If the surgeon uses ambulances to follow the attack, each ambulance must be provided at least with a receiving set; and the surgeon's command car, or truck, should be provided two-way radio communication.

(3) Tank battalions, GHQ reserve, may be attached to armored divisions, or to infantry or cavalry divisions. In the first case their unit medical service corresponds to that in the armored division. When employed with infantry or cavalry divisions, however, their assault echelons ordinarily are

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closely followed by foot (or horse) elements and their unit medical service is modified accordingly. The division clearing station may be so located that it is impracticable for the attached medical personnel of the tank units to evacuate their own casualties thereto, in which case, they may deliver their casualties to the division medical service at some intermediate medical installation, or after administering first aid, leave them for the litter squads of the foot (or horse) elements to evacuate from the field.

h. Other arms and services.—Other medical detachments in the division operate dispensaries at or near their unit headquarters and may provide company aid men to the companies of their unit. All scattered elements obtain incidental medical service from other units in their vicinities.

■ 39. MEDICAL DETACHMENTS OF SEPARATE BATTALIONS.—*a.* The procedures of organization, administration, supply and employment of medical detachments of regiments, set forth in this chapter, apply also to the medical detachments of units other than regiments.

b. Since the battalion medical section is the primary operating unit of attached medical personnel, no further permanent subdivision of a medical detachment is permissible, although medical personnel may be temporarily attached to units smaller than a battalion. The medical detachment of a separate battalion or comparable unit is, therefore, organized as a battalion medical section with the addition of the overhead required for administration and supply. This overhead, however, is available for other duty. (See pars. 28*b* and *c*.)

c. The surgeon of a separate battalion or comparable unit has the combined responsibilities and duties of a regimental and a battalion surgeon. (See pars. 34 and 35.)

SECTION III

COLLECTION

■ 40. DEFINITIONS.—*a.* (1) Before the development of divisions of great tactical mobility, such as the armored division, collection was defined as the operation of removing casualties from aid stations, or directly from the field when necessary, to a collecting station and there preparing them for further

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evacuation. Preparation for further evacuation was an essential feature of collection. With the changes in organization of certain divisions which combined former collecting and ambulance elements into one unit, this definition had to be expanded to include that link in the chain of evacuation between the collecting station and the clearing station; so that collection became an operation involving the removal of casualties from front-line units, their preparation for further evacuation, and their delivery to a clearing station.

(2) Now, however, the high speed of the attacks of armored units, often followed without delay by further movement, frequently will not permit the delay incident to the establishment of a collecting station or post. On the other hand, the very characteristics of such attacks which preclude the establishment of collecting stations obviate the necessity for them. Casualties can be collected directly from the field in ambulances and delivered promptly to the clearing station. To be of universal application, then, the definition of collection must again be modified; it is the operation of relieving units in action of their sick and wounded and the delivery of such casualties to a clearing station. When, during the operation, preparation for evacuation (other than first aid) is both necessary and feasible, it is provided for, but it can no longer be regarded as being invariably essential to collection.

b. A collecting station is a complete establishment of a collecting unit—complete in the sense of availability of all the normal facilities of a collecting station. Certain collecting units have duplicate sets of equipment permitting them to establish two complete stations. The personnel available to operate each station is, of course, proportionately reduced.

c. A collecting post is a limited establishment, operated by a detachment of a collecting unit, which contains the elements necessary to prepare casualties for further evacuation, but which is less elaborate than a collecting station. A collecting post is not to be confused with a forward ambulance loading post, which has no facilities for the preparation of casualties for evacuation and whence casualties ordinarily are evacuated by ambulance to a collecting station or post for such preparation.

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■ 41. COLLECTING UNITS.—*a. Functions.*—(1) *In combat.*—The collection of casualties from the units they are assigned to support (see par. 40*a*).

(2) *In other than combat situations.*—(*a*) When not confronted with impending combat, collecting units provide the personnel to assist the division surgeon in sanitary administration in the manner prescribed in paragraphs 5 and 6, AR 40–205. This function is not to be confused with police; nor is the company used as sanitary laborers. Personnel are furnished to inspect, demonstrate, and instruct in sanitation. Such employment of collecting personnel must not be permitted to interfere with their training in combat functions; and ordinarily, this employment is limited to the area of their own division.

(*b*) Interior guard of the division medical unit of which they are parts.

b. Organization.—The organization of collecting companies varies with the type of division to which they belong. The only component that all have in common is the litter bearer.

(1) The collecting company of the medical regiment includes a company headquarters, one platoon composed of a station section and a liaison section, and two platoons of litter bearers. While detachments may be made to operate collecting posts, the company is not readily divisible to operate two complete stations.

(2) The collecting company of the medical battalion of the triangular division includes a company headquarters, a station platoon, and a collecting platoon composed of a bearer section and an ambulance section. Like its prototype in the medical regiment, it is not readily divisible to operate two stations although it may provide detachments for collecting posts.

(3) The collecting troop of the medical squadron includes a troop headquarters and two collecting platoons. Each collecting platoon is composed of a platoon headquarters, a station section, a bearer section, and an ambulance section, so that the basic tactical unit is the platoon rather than the troop; the troop is designed to operate two independent collecting stations.

(4) The collecting company of the medical battalion of the armored division is organized similarly to the collecting

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troop, except that there are no station sections in its collecting platoons. While the platoon is the basic tactical unit of this company, station sections must be improvised when necessary.

c. Station sections.—Station sections establish and operate collecting stations. They are reinforced from other elements of the company when necessary.

d. Liaison sections.—Liaison sections establish and maintain contact with the unit medical detachments of combat elements in the zone of action covered by the collecting company or platoon.

e. Litter bearers.—Litter bearers either—

(1) Carry litter cases to the collecting station, collecting post, or advanced ambulance loading post from the aid stations (and, when necessary, from the field) in their assigned zones of action; or

(2) Establish and operate advanced ambulance loading posts. They render such first aid to casualties handled by them as may be necessary, and direct walking wounded to the proper station.

f. Ambulance platoons and sections.—See section IV.

■ 42. COLLECTING UNIT COMMANDER.—*a. General.*—The senior officer of the Medical Corps present for duty with a collecting unit commands it. Collecting units are the critical elements of the division medical service; and commanders of these units must be able, alert, resourceful, courageous, and industrious.

b. Duties and responsibilities.—(1) *In other than combat situations.*—(*a*) Administration, discipline, morale, and training of the unit.

(*b*) Coordination of all activities of the unit.

(2) *In combat.*—(*a*) Disposition and employment of the subordinate elements of the unit.

(*b*) Liaison with units of attached medical personnel in the zone of action of the collecting unit.

(*c*) Keeping his immediate superior informed of the situation in his front.

c. Relations with other units.—(1) *Within division medical service.*—In combat there must be close and harmonious cooperation between the forward (collecting station and bearers) and the rear (ambulances) echelons of collection.

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When both these echelons are combined in one company, the coordination can be effected by the unit commander, but, when ambulance elements are not parts of collecting units, they must adapt their operations to those of the collecting units they support, except that the collecting units must establish their stations near points accessible to ambulances.

(2) *Without division medical service.*—The collecting unit must base its dispositions and operations upon those of the combat elements in its front. Normally it removes casualties from aid stations, but, when attached medical personnel for any reason have been unable to remove all wounded from the field, the collecting unit must search and clear the field.

■ 43. MESSAGE CENTER.—*a. General.*—The message center is the nerve center of the unit. All official messages to and from the unit pass through the message center and are made of record. It is located at the unit CP, and marked with a conspicuous sign. The message center clerk is in direct charge of operation.

b. Special combat functions.—Message center personnel meet incoming litter bearers and walking wounded from the front, and ambulances from the rear, and ascertain by direct questions whether or not they are bearers of messages. Messages for the collecting unit are retained; those for units in front or in the rear are forwarded by the proper agencies.

c. Records.—The records of the message center should be complete. They are of great value in the preparation of the war diary of the unit.

■ 44. LOCATING COLLECTING STATION.—*a. General.*—(1) The site of a collecting station is selected from a study of the terrain, roads, friendly and hostile troop dispositions, and the capabilities of the enemy. The governing element is the *mission* of a collecting station: the preparation of casualties for ambulance transportation to the clearing station. Many patients arrive at a collecting station who have not been given adequate emergency treatment, but none should ever leave a collecting station with an inadequate dressing, a poorly splinted fracture, or lacking sufficient blankets to protect him from the weather. These functions cannot be discharged unless some degree of protection from enemy action

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is afforded; this consideration points to a site well to the rear. However, the difficulties in transporting patients on litters carried by hand, and the suffering of walking wounded, point to a site near the front. Selection of the site, then, becomes a compromise between these opposing influences.

(2) The most important factor in determining the location for a collecting station is the position of the several aid stations supported by the unit. This requires a map study or reconnaissance of the belt of terrain some 500 yards to the rear of the line of departure or the main line of resistance in order to determine the location of aid stations and a knowledge of probable or actual battalion boundaries. The latter information frequently can be obtained in advance in the case of a prepared attack or a prepare defensive position. In a meeting engagement, such advance information of combat elements may not be available, but usually fairly accurate deductions may be made. In such situations, it may be advisable to order the collecting unit initially to a position in readiness from which it can be rapidly advanced to the best position after the tactical situation has developed and the aid stations have been located.

b. Site requirements.—(1) The station should be located so as to obtain sufficient defilade from elevations of terrain for protection from direct small-arms fire and from flat-trajectory artillery fire. A distance beyond the effective range of hostile artillery fire renders the station useless. Properly located buildings, particularly those of brick, concrete or stone construction, should be utilized. Cellars provide protection, and in stabilized situations, dugouts may be constructed. Protection may also be obtained by concealment. Positions in woods or other localities which are not under direct enemy observation should be sought. (See also par. 64.) A location in close proximity to bridges, fords, important cross roads, ammunition distributing points, battery positions, or other points likely to draw hostile artillery fire should be avoided.

(2) Every effort must be made to reduce to a minimum the distance of litter carry. The average should not be more than 1,500 yards, and each 100 yards that this average distance is reduced adds to the efficiency of casualty collection. A position somewhere near the center of a zone of action or sector will equalize the distances from the several aid stations

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and is desirable unless there be urgent reasons to the contrary.

(3) The site selected must be accessible to ambulances, although the station is not necessarily accessible at all times. Blown-up or blocked roads and enemy fire may prevent ambulances from reaching the station for varying periods, and, in extreme situations, ambulances may be able to evacuate the station only at night.

(4) The site must be of sufficient size to permit systematic organization of the station and the movement of ambulances and trucks. Considerable accumulations of wounded may occur for various reasons and there should be sufficient shelter and cover available while they are awaiting evacuation. The ground must be firm.

(5) A point which intercepts the greatest number of natural lines of drift of wounded is desirable. (See par. 14*c*.)

(6) Probable areas of casualty density must be considered. (See par. 14*b*.)

(7) The collecting station should not be located so far forward as to become involved in minor fluctuations of the line.

(8) An adequate water supply is desirable.

c. Average location.—(1) The location of a collecting station will depend, in each situation, upon the terrain, road net, nature of the operation (attack, defense, etc.), and enemy capabilities. No fixed rule can be laid down, but the following approximations may be regarded as general guides:

(*a*) It should rarely be nearer than 1,200 yards to the front line.

(*b*) It should rarely be farther than 3,500 yards from the front line.

(*c*) Other things being equal, it should be near the center of its zone of action in a lateral direction.

(2) Bearing in mind the exceptions to the foregoing guides, an average location for a collecting station may be described as a concealed or protected position about one mile from the front line, equidistant from the lateral boundaries of its zone of action, and on or near a road leading to the rear.

d. Reconnaissance.—(1) Depending upon the situation, the general idea along which a collecting station is to be established may be described by the commander of the division medical unit or by the commander of the collecting bat-

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talion; or the collecting unit may be given a mission order to support a specified combat element, in which case the unit commander may exercise full discretion. Before the collecting unit arrives in the general area, a reconnaissance should be made by the unit commander, when possible, to select the exact location of the collecting station.

(2) Upon arriving at his decision, the unit commander may send a messenger to guide the unit into position, or he may return and lead it in. In either case he should have a detailed plan for the lay-out of the station and the employment of the other elements of his unit by the time it arrives at the site selected.

(3) Whenever practicable, this reconnaissance is made in company with the supporting ambulance unit commander. The views of the latter must be considered carefully, but the decision rests solely upon the unit commander.

■ 45. ESTABLISHING AND OPERATING COLLECTING STATION.—*a. Approach march.*—(1) *General.*—(*a*) The advance of a collecting unit to its combat position will depend upon the nature of the operation, enemy capabilities, and the location of the unit at the time it receives its mission. Intervening, ordinarily, between the unit and its combat position is the bulk of the combat troops and their trains. These must have priority of movement. Thus, an early and uninterrupted advance of a collecting unit to its combat position is not always assured. However, when early entry of collecting units into combat is imperative, this source of delay should be obviated by placing the collecting units in such positions prior to combat that their subsequent movements will not interfere with combat troops.

(*b*) In planned operations of large units, however, several hours are allotted for reconnaissance of commanders and staff, for the selection and occupation of artillery positions, and for other necessary preliminaries to combat. During this period a collecting unit usually will be able to make its preparations and advance to its position without interfering with other elements.

(2) *Advance into position.*—(*a*) The personnel of a collecting unit are moved into position, whenever practicable, by the ambulance unit designated to support. The train of the collecting unit follows in the column. The ambulances

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transport the collecting personnel to the site of the station, or as near thereto as the convoy may proceed in relative safety. Except when the ambulance unit is a subordinate element of the collecting unit, this movement is controlled by the ambulance unit commander. Collecting personnel are transported in ambulances both to save time and to start them off in their arduous duties in the best physical condition possible.

(*b*) The combat order for a collecting unit will prescribe the time of movement, the route, the ambulance unit (if any) to transport the personnel, entrucking and (when known) detrucking points, the hour at which the collecting station will open, if necessary, and such other information as may be required.



FIGURE 8.—Directing sign.

b. Organization and operation.—The station is organized into the following departments: receiving, litter wounded, walking wounded, gas cases (when indicated), medical records, forwarding, kitchen, and the morgue. All cases enter the station through the receiving department, where each is examined and classified as a walking or litter wounded. If gas be used, further classification must be made since such cases must be treated apart from others. The patient is sent to the proper treatment department, after which he is sent to the forwarding department for evacuation to the clearing station. (For details see FM 8–5.)

c. Directing signs.—Upon the establishment of a collecting station, plainly visible directing signs are posted at suitable points to mark the location of the station and the routes thereto. The area forward is adequately posted along the litter-bearer routes as far as the line of the aid stations. A large sign is prominently displayed in the vicinity of the station. For form of directing sign see figure 8.

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■ 46. LIAISON SECTION.—*a. Responsibility for liaison.*—In the medical service the responsibility for maintaining contact between two medical units lies with the unit to the rear. Although regimental and battalion surgeons have a duty in this connection (see pars. 34*b*, and 35*b*(8)), the responsibility for establishing and maintaining contact between attached medical personnel and the collecting unit in support lies with the latter. To discharge this duty there is, in each collecting unit, a liaison section composed of contact agents.

b. Duties of contact agents.—The basic functions of contact agents are:

(1) To locate all infantry aid stations in the collecting company's assigned area of responsibility. Contact agents are not usually assigned to artillery units. (See par. 47*k*.)

(2) To return to the collecting station and guide the litter bearers forward to the aid stations.

(3) Afterward, to remain at their respective aid stations and there act as contact or liaison agents for their unit, sending back to the unit commander all the useful information they can obtain.

c. Establishing contact.—Contact is established in one of two different ways:

(1) *Collecting station to aid station.*—The contact agents remain with the collecting unit until the site for the collecting station has been fixed. Then, while the station is being established, the contact agents are sent forward to locate the aid stations.

(2) *Aid station to collecting station.*—The contact agents are sent to locate the aid stations before the establishment of the collecting station has been started. This may be done either by attaching a contact agent to each battalion medical section before it enters combat, so that the contact agent accompanies it into position, or by dispatching the contact agents forward after the battalion sections are in position but while the collecting unit is still in a position in readiness. When this method is employed contact agents must be informed of the general area in which the collecting station will be located. The choice of methods will depend upon the situation, but the time consumed in one journey between the aid station and collecting station is saved if the contact agent can begin his duties at the aid station.

d. Instructions to contact agents.—When contact agents are

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not attached to battalion sections prior to combat, but are dispatched forward by the collecting unit commander, their instructions must include the following:

(1) Direction of the enemy.

(2) Boundaries of the zone of responsibility of the collecting unit—shown both on the ground and on the map.

(3) Designation of the unit, or units, to which the contact agent is being sent.

(4) Location of such unit, or units, if known.

(5) General route to be followed.

(6) Any information to be transmitted to the regimental or battalion surgeon to whom the contact agent will report, such as the location of the collecting station and when litter squads may be expected to arrive at the aid station.

e. Local distribution of contacts agents.—When two or more contact agents are being dispatched to a combat regiment, all should report initially to the regimental surgeon so that he may distribute them according to the plans for the employment of the regiment.

f. Failure of contact agent to report.—If a contact agent sent to locate an aid station does not report back to the collecting station at the proper time, another contact agent or other soldier capable of performing the duty must be sent. Liaison must be established and maintained.

g. Contact agents at aid stations.—Contact agents must not only be intelligent and highly trained, but must exhibit initiative and have a keen sense of the importance of their duties and the responsibilities of their position if they are to be of any value to their commanding officer and to the medical service. They are there to obtain early and reliable information, and they must get it and transmit it. Their duties are to keep the collecting unit commander constantly informed of—

(1) A change or contemplated change in the location of the aid station.

(2) The prevailing type of wounds or gas casualties.

(3) The number of wounded and whether increasing or decreasing.

(4) The progress of the regiment or battalion to which attached.

(5) Enemy counterattacks; new infantry units engaged or about to engage, as communicated to the contact agent

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by the regimental or battalion surgeon, and any other information pertinent to the military situation if it concerns the collecting unit.

h. Transmission of information.—(1) The agencies available to contact agents for transmitting their information to the collecting station are usually limited to returning litter bearers, walking wounded (unreliable, but used when necessary), ambulances arriving at the aid station or a near-by loading post, and the telephone, when available.

(2) Messages of special importance are sent in duplicate by two different agents. One message is marked "Duplicate."

(3) Sketches are sent when they supplement a written message or better explain a certain situation then does a message.

(4) Each contact agent is provided with a field message book and pencils.

■ 47. LITTER BEARERS.—*a. Task.*—The assembling of litter wounded at a collecting station is a slow operation. The time required to evacuate aid stations of their litter wounded is a function of three variables: the number of litter wounded, the number of litter bearers, and the time required to make the trip between the aid station and the collecting station. Distance is no accurate index of this time, since difficulties may alter the usual relationship between time and space. Where—

W is the number of litter wounded;
t is the time required for one round trip of a litter squad;
S is the number of litter squads; and
T is the total time required to move all litter wounded;

the general formulas are—

$$T = \frac{W \times t}{S} \tag{1}$$

$$S = \frac{W \times t}{T} \tag{2}$$

which is to say in (1) that the total time required to evacuate a given number of litter cases depends upon the time for each patient and the number of squads employed; and in (2) that the number of squads required to evacuate a given number of wounded in a prescribed time depends upon the time required to evacuate each case.

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b. Factors tending to retard collection rate.—(1) Poorly trained or undisciplined litter bearers.

(2) Night collection (see *g* below).

(3) Casualties scattered over field instead of being assembled at aid stations (see *f*(1) below).

(4) Inclement weather; difficult terrain, such as mud, rough undergrowth, etc.

(5) Enemy fire and gas.

(6) Enemy counterattacks.

(7) Long litter carriage.

(8) Fatigue of litter bearers. During hard fighting, fresh litter bearers can be expected to work the first twenty to twenty-four hours with but little rest. Thereafter they should be relieved and rested every twelve hours.

(9) Casualties sustained by litter bearers.

c. Measures for increasing the rate of collection.—(1) *Use of wheeled litter carriers.*—A wheeled litter carrier is a light, collapsible, two-wheeled, rubber-tired, hand-propelled vehicle which will transport one patient on a litter. Each carrier is operated by two bearers. This reduction in the number of bearers per patient plus the considerable reduction in the fatigue factor more than doubles the capacity of a litter squad. Unfortunately, however, wheeled litter carriers cannot be used under all conditions. Reasonably smooth paths must be available, free of obstacles and precipitous slopes. By establishing relay posts, carriers may be used for parts of the distance, substituting carriage by hand over stretches not suited to their use. Each collecting unit is equipped with wheeled litter carriers. They should be allotted to bearer elements according to number of patients to be transported, distance to be traversed, and feasibility of employment.

(2) *Forward displacement of collecting station.*—An aid station is not located for convenience to the collecting station. The location of the latter must conform to the movements of the former. While it is true that the movement of a completely established collecting station entails considerable effort and is to be avoided unless necessary, the reduction in capacity of litter bearers may outweigh the advantages of retaining a collecting station site. When this point is reached the station should be moved forward to decrease the distances that patients must be transported by bearers.

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(3) *Use of advanced ambulance loading posts* (see par. 59*a*(2) and (5)).—Advanced ambulance loading posts should be used whenever practicable and the situation permits. In some situations they may be used during the hours of darkness when their daytime use is impossible. An advanced ambulance loading post is established by the ambulance unit upon the request of the collecting unit. In the event that the ambulance unit commander disagrees as to the practicability of operating ambulances in advance of the collecting station, the decision is made by the next higher echelon commander—normally the commander of the division medical unit.

(4) *Reinforcement with personnel from collecting unit in reserve.*—If there be in reserve a collecting unit whose employment in the near future is not contemplated, individual personnel or subordinate elements may be detached therefrom to reinforce a collecting unit in action. The relative expediency of this course and that discussed in (5) below, must be carefully considered. It may be advantageous to relieve an exhausted company with a fresh one, placing the former in reserve to recuperate.

(5) *Leapfrogging with another collecting unit.*—This procedure consists in placing an unengaged unit in action to establish a new collecting station farther forward, closing the old station when the new is in operation. Though not always practicable, this operation is most useful in certain situations. Combat elements must advance sufficiently to warrant the establishment of a new collecting station farther forward. A typical situation in which its use is indicated is to be found in a successful attack by combat teams in column.

(6) *Use of prisoners of war.*—When available, prisoners of war can be used to advantage in the collection and litter transportation of battle casualties. They are assigned to this service through division or brigade headquarters. In times of stress they may be held temporarily at collecting stations. Those so assigned to a collecting unit work under the unit commander. At the collecting station they are employed as litter bearers and for general utility. When employed on litter-bearing routes from the aid stations, they are worked under guard.

(7) *Narrow gauge or light railways.*—The use of any railway in the removal of casualties to a collecting station is

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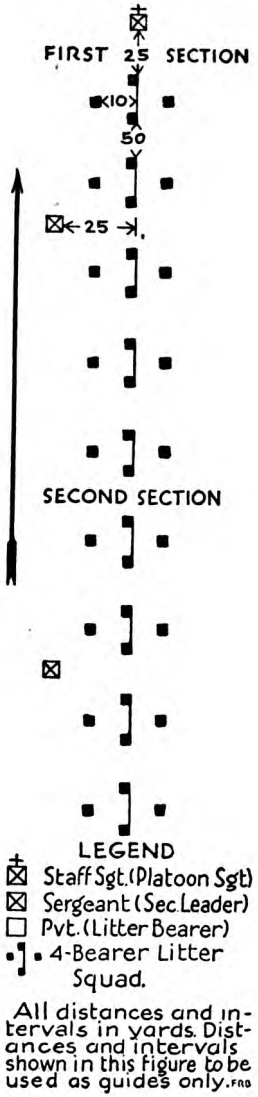


FIGURE 9.—Litter bearer platoon in column of litter squads (schematic).

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usually limited to those situations in which both sides have become more or less stabilized and such railways have become necessary for the supply of the troops. Rarely can a railway be expected to run directly to a collecting station.

(8) *Reinforcement from medical units of higher echelons.*—See paragraph 24.

(9) *Reinforcement from other troops of the division.*—See paragraph 24.

d. Litter squads in extended order.—For a detailed discussion of extended order see chapter 10, FM 22–5. The bulk of the work of litter squads is not done in formation, but formations are necessary in the advance to aid stations and in clearing areas of wounded that have not been taken to aid stations. Such formations reduce casualties in litter squads, promote control, and insure a thorough search of the field.

(1) *Column of litter squads.*—This formation is easily controlled; direction is easily changed to avoid bombarded areas; the smallest possible frontage is presented to direct enemy fire. It is mostly frequently used in advancing to a definite objective, usually an aid station, over terrain subject to hostile observation and fire, or in following a concealed route, as a draw or ravine. A distance of 50 yards between litter squads in the column is usually adequate. The platoon sergeant marches at the head of the column. The section leaders march where they can best control their sections. When necessary, this formation can be readily changed into line of section columns by halting the leading section and marching the rear section up on either flank.

(2) *Line of litter squads.*—This formation finds its greatest usefulness in searching and clearing the field of wounded after combat. At night, in close, rough and wooded country, the interval between litter squads must be less than on open and flat terrain. The platoon sergeant marches well in advance of the center of the platoon so that he may be the first to arrive in new territory, make his decisions and transmit his orders to his section leaders.

(3) *Line of section columns.*—This formation is sometimes useful in crossing dangerous areas or in approaching woods in order to provide quick concealment and at the same time present an inconspicuous target. A distance of 50 yards between litter squads in the column is usually adequate.

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e. Advance to and clearing of aid stations.—(1) *Prior to advance.*—Litter bearers are usually not dispatched until the locations of the aid stations are definitely known. While

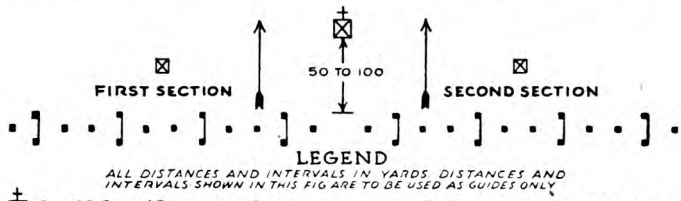


FIGURE 10.—Litter bearer platoon in deployed line of litter squads (schematic).

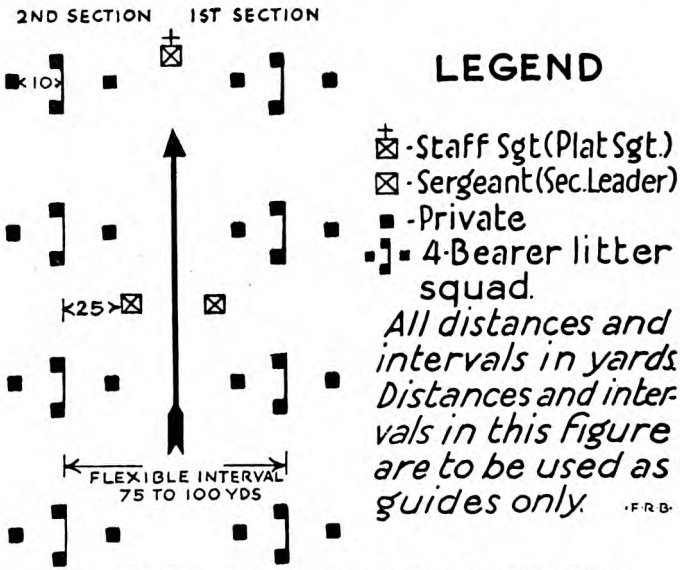


FIGURE 11.—Litter bearer platoon in line of section columns (schematic).

awaiting the return of the contact agents, the situation, so far as known, is carefully explained to the platoon sergeants and section leaders. As the exact locations of aid stations

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are learned, they are plotted on maps or sketches. Apparent loss of time, occasioned by holding the bearer platoons at the collecting station until positive information of aid station positions is obtained, is fully repaid in diminished loss of personnel, fewer chances of going astray, and in a better organization of the bearer service. Although the platoon or section may be accompanied by the contact agent, the platoon sergeant or section leader must understand where he is going and how he is going to get there before being permitted to start.

(2) *The advance.*—Over favorable terrain, it is usually feasible to leave the collecting station personnel in column of litter squads closed up. This formation is retained as long as it is safe, but as dangerous areas are approached, the distance between litter squads is increased as necessary, in order to avoid losses. Actively shelled areas are avoided whenever practicable. Advantage is taken of terrain features to secure cover from fire, and particularly concealment from hostile observation. If the litter carry is 1,000 yards or more, a litter relay post is established at a selected point, and the necessary number of squads left to man it (see *h* below).

(3) *Evacuation.*—When the aid station is reached, evacuation begins at once, all litter cases being carried back to a litter relay post, the collecting station, or an advanced ambulance loading post. With occasional rests, the litter bearers ply continuously back and forth between these points and the aid stations until all wounded have been evacuated, or until the bearers have been relieved. It is a combat doctrine that aid stations be cleared as rapidly as possible, not only that the wounded may reach a place of definitive treatment with the least practicable delay but, from a broader point of view, because it is essential that the wounded be removed from the sight of the combatant troops. (See par. 4*a*(2).)

f. Clearing field of wounded.—(1) When, in addition to removing the wounded from aid stations, the bearer platoons must also search and clear the field or certain areas of it, their task is greatly increased and collection is thereby retarded. If casualties are numerous, reinforcement may be necessary. Such a situation may arise when combat troops have advanced some distance, necessitating corresponding

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advance and successive reestablishment of aid stations. It may occur in hard fighting without advance of the aid stations, the medical detachments being unable to cope with their tasks. Or it may arise in an interval between attack and counterattack, when the opportunity must be seized to remove all wounded.

(2) When the field is to be cleared by the bearer platoons, they are assigned zones of action. Boundaries are designated by conspicuous landmarks, such as buildings, roads, streams, fences, isolated trees, or woods. The platoon or section forms in a deployed line of litter squads, using such intervals as may be indicated by the nature of the terrain, and systematically searches all the ground as it advances. The effectiveness of the search is increased in each squad by having the No. 1 man and No. 4 man move 10 to 25 yards on each side of the litter. Upon finding a wounded man, he is removed to the central axis and the search is resumed where he was found. The central axis should be a well-marked, easily distinguishable feature such as a road or fence. This central axis is finally cleared to the collecting station by ambulance, if practicable; otherwise, by litter or wheeled litter carrier. It is sometimes desirable to evacuate wounded as found to a litter relay post.

g. Clearing field of wounded at night.—(1) This is frequently necessary, and in dark nights on strange terrain is attended by great difficulties, the most serious of which are—

(*a*) Loss of control of litter bearers.

(*b*) Inability to find all wounded, especially the more seriously wounded, or uncertainty whether all wounded have been found.

(*c*) Difficulty in resuming search where last patient was found.

(*d*) Individual bearer squads or larger groups getting lost.

(*e*) Difficulty in maintaining proper direction of search.

(2) Measures which facilitate night collection are as follows:

(*a*) If possible, the clearing of the field should be initiated before it has become quite dark. If this cannot be done, a reconnaissance of the area to be searched by the officers and noncommissioned officers who are to direct the work of the bearers is very valuable even though it be incomplete. Prom-

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inent and easily recognized and followed landmarks are to be noted in this reconnaissance.

(*b*) Disciplined bearer units thoroughly trained in night exercises, and the use of the luminous compass.

(*c*) Detailed organization of the bearer service, and a carefully worked out plan for the assigned task.

(*d*) Avoidance of dispersion of bearers until the area to be cleared has been reached.

(*e*) Assignment of limited zones of action to subunits, marked by easily recognized boundaries such as roads, buildings, fences, streams, railroads, and edges of woods.

(*f*) Material reduction of intervals depending upon the character of the terrain and the degree of darkness.

(*g*) Reduction of distances with reference to litter relay posts, central axes to which patients are carried, and advanced ambulance loading posts.

(*h*) Close contact and control by section sergeants, including periodic reporting of bearers at local command posts.

(*i*) A white band (wide bandage) around each bearer.

(*j*) One member of each squad to remain at the point where the last patient was found to mark the place.

(*k*) Assignment of guides to bearer platoons brought up from the rear after dark.

(3) The evacuation of aid stations at night is less difficult after the stations have been located. The best evacuation routes to the collecting station are selected. Frequently, desirable routes, the use of which in the daytime is not possible, can be taken at night. Distances between litter relay posts may be somewhat reduced.

(4) If the military situation permits of lights being used, the problem of night evacuation of wounded is simplified.

h. Litter relay posts.—(1) *Location.*—Litter relay posts are established as required, usually about every 600 yards. Over good terrain the distance between relay posts can be increased several hundred yards. The relay posts are on the litter bearer routes which extend from the aid station back to the collecting station, or any other point at which wheeled litter carriers, light railway, or ambulances can take over the patient. It is uneconomical and unnecessary to locate wheeled litter carrier relay posts as close together as are litter relay posts. In favorable situations, it may be practicable to cover the entire distance between an aid station and

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the collecting station with wheeled litter carriers. In other instances their use will be more restricted, forming only a link in one or more evacuation routes.

(2) *Points selected.*—So far as practicable, litter relay posts are so spaced that all bearers in the chain of evacuation are kept approximately equally occupied. The relay posts should be definitely organized, affording shelter during inclement weather, some security from hostile fire, a small reserve of blankets, litters and splints, and a place for storing food. Frequently, shell holes, dugouts, or trenches can be used.

(3) *Personnel.*—The strength of a relay post will vary. Occasionally as many as 24 bearers are assigned.

(4) *Operation.*—The operation is simple. Posts are numbered from front to rear. A bearer squad with patient arrives from an aid station at post No. 1; turns its patient over to a bearer squad at post No. 1 without removing him from the litter; takes a litter from the stack and returns at once to the aid station. In the meantime, a bearer squad from post No. 1 carries the patient to relay post No. 2 or to the collecting station as the case may be. The organization of the relay post system varies according to the situation. One line of relay posts may be established to each aid station being evacuated, all converging at the collecting station; or, as is more frequently the case, especially if the front be not wide, the chain may run forward to No. 1 post, which is centrally located in the rear of and close to the aid stations, and all wounded are evacuated from the aid stations to No. 1 relay post, and thence back through the relay route. Each situation must be studied with a view to the simplest, most rapid and economical removal of litter patients from the aid stations to the collecting station.

i. Officer commanding litter-bearing platoons.—An officer, in war strength companies, under the company commander is responsible for organizing and operating the litter bearer service during combat. When necessary, he leads the bearer platoons forward and makes the initial dispositions. He establishes his command post normally at the collecting station or at a litter relay post from which he can best control and coordinate collection in the company zone of action. He goes, however, wherever his services may be required. He informs the platoon sergeants of his position and keeps in

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communication with them. He keeps the company commander constantly informed of the situation and makes timely requests for reinforcements or relief of his bearer platoons.

j. Platoon sergeant.—The platoon sergeant receives his orders during combat from the officer commanding the litter bearers. He goes forward with his sections and personally sees that they reach the aid station or stations, or other objective, and gets evacuation under way at once. He organizes litter relay posts as directed and supervises the work of his platoon. He takes post at a point from which he can best control the functioning of his platoon. This may be at a relay post or a point where the evacuation routes of his two sections converge. He maintains close contact with the section leaders at all times and keeps his commanding officer constantly informed of the situation in his platoon and zone of action.

k. Collection of artillery casualties.—Collecting units rarely establish contact with the aid stations of artilery units for the following reasons: casualties among artillery personnel are normally less than in infantry units, and the attached medical personnel of artillery units are able to prepare their casualties for evacuation to the clearing station; ambulances ordinarily can reach artillery aid stations with safety; and the medical detachments of almost every artillery unit are equipped organically with ambulances. Consequently, artillery casualties normally are evacuated directly from aid stations, either upon request to the division ambulance unit operating in the area, or by the organic ambulances of their own medical detachments. (See par. 38*d*.)

■ 48. FORWARD DISPLACEMENT OF COLLECTING STATION.—*a.* The forward displacement of a collecting unit at station, by bringing the station closer to the majority of wounded and shortening litter carriage, is an effective means of facilitating casualty collection when warranted by the tactical situation. The collecting unit must keep close, effective contact with the front-line troops in its zone of action or sector, the station being located close enough to the line of aid stations to make litter carriage as short as possible but not so exposed that the work of the station can not be carried on. That litter bearers may properly be exposed to enemy fire in their work to a degree impracticable for the station

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itself, if its work is to be satisfactorily done, is a distinction to be recognized. The station is advanced only on orders of competent authority.

b. Forward displacement is indicated—

(1) During a successful attack, in the course of which the litter carry has become unduly long.

(2) When the enemy has abandoned the field, and the number of casualties and their distribution warrant a re-establishment of the collecting station.

c. Forward displacement is contraindicated—

(1) When the advance is only a temporary fluctuation in the course of the battle.

(2) When the station in a more advanced position would be rendered useless by the enemy fire.

d. Important obstacles in effecting forward displacements are—

(1) Enemy artillery fire.

(2) Destroyed or impassable roads.

(3) Congested roads or roads reserved for the advance or relief of combatant troops.

(4) Darkness.

e. (1) The collecting unit commander, accompanied if possible by the ambulance unit commander concerned, makes a reconnaissance of the route or routes forward and of the vicinity in which the collecting station is to be reopened.

(2) The officer directing the litter bearer service is informed of the new location for the station and the hour at which the movement of patients thereto is to start. He regroups his bearer service to meet the new situation.

(3) Medical supplies are replenished as necessary.

(4) Aid stations are notified by field messages of the location of the new station and when it will open.

(5) The station is cleared of any accumulation of wounded.

(6) Equipment and supplies are packed and loaded.

(7) The advance to the new site is made at the hour and by the route prescribed in the order.

(8) The proper authority is informed as soon as the new station is opened.

■ 49. DIVIDING COLLECTING UNIT FOR TACTICAL EMPLOYMENT.—*a.* The collecting station equipment is so made up and carried

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that the war strength companies can be divided into two approximately equal parts, each one of which is able to function on a limited scale as a collecting unit in combat.

b. Occasions may arise when such a division of the company is desirable or necessary as in the following situations:

(1) When a force is on a detached mission which does not require a complete collecting company, or for which a complete company can not be spared.

(2) When a force is fighting on an extended front against a weak enemy, in a delaying action, or is holding defensively a wide front.

(3) When one or more terrain features divides the zone of action into two areas more or less inaccessible to each other.

(4) When only part of a collecting company is required for an advance, flank, or rear guard.

c. The company is so divided that each half contains its proportionate share of officers, equipment, and the functioning subunits of the company.

■ 50. RELIEF OF COLLECTING UNIT AT STATION.—*a.* When a collecting unit at station is to be relieved, orders are issued designating the organization for the relief, the date and the hour relief is to be completed, route by which the relieving unit will approach the station, and the elements of the old unit to remain in the area for the guidance of the new. Guides are detailed to meet the new unit. This is especially necessary in night reliefs.

b. Upon receipt of the order, the commander of the relieving unit or an officer designated by him proceeds to the unit he is to relieve for arrangement of details and a thorough reconnaissance of the entire area covered by the unit he is relieving. He takes over all maps of the sector and all property which is to be exchanged. He familiarizes himself with all sector orders. He must note especially the following important points:

(1) Location of all aid stations and the routes thereto.

(2) Location of each relay post and advanced ambulance loading post (if any).

(3) Wheeled litter carrier routes.

(4) Location of the ambulance station.

(5) Source of water supply and purity of the water.

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(6) Source of fuel.

(7) Characteristics of enemy artillery fire and his habits relative to the use of gas.

(8) Areas which come under enemy observation.

c. The relief of the litter bearers conforms to the principles governing such operations. No relief should be carried out without leaving important elements of each section being relieved in position to aid the incoming litter bearers during the first few hours. The men so left are used in giving information of the area and in guiding groups from place to place until the new personnel are thoroughly familiar with the terrain and the peculiarities of the enemy artillery on this portion of the front.

■ 51. COLLECTION IN FAST-MOVING ATTACKS.—*a. General.*— The development of matériel and tactics permitting attacks to be made at speeds of 20 to 30 miles per hour, over broad fronts and to depths measured in miles instead of yards, makes it necessary to revise the technique of collection. The basic field medical service of today was developed to support foot troops. Its capabilities are seriously strained by the considerable increase in the mobility of foot troops through motorization, and it fails completely to meet the unusual requirements of armored forces.

b. Governing factors.—(1) An armored force rarely will remain immobile in hostile territory for any length of time, except at night. Collection must be accomplished in minimum time and frequently on a moving axis. Any installation capable of rendering effective service in collection will require more time to establish and displace than will be available in the average situation.

(2) The necessity for additional medical attention between first aid on the field and care and treatment in a clearing station is in direct proportion to the length of time intervening between these two services. Since, with foot troops, in the usual situation there is a long carry by litter bearers between the administration of first aid and the placing of the casualty aboard an ambulance, the need of a collecting station is real. But, if the casualty can be loaded on the ambulance on the field, he can be delivered at a clearing station in much less time than that required by a litter squad to carry him 800 yards; and the need of an intermediate station disappears.

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(3) When casualties are numerous, as in the case of the combat of foot infantry, it is necessary, in the interest of economy, to direct them along constantly converging chains of evacuation (see par. 11*g*). The casualty rate in armored forces, except in a disaster, can never approach that of foot infantry, and a certain proportion of casualties will continue in their vehicles until a lull in the action. For these reasons, the evacuees of an armored force are more of an individual than a mass problem.

c. Collection on a moving axis.—A small group of ambulances, with a litter squad for loading, may be designated to follow the axis of each combat unit (armored regiment or battalion, as the situation indicates) in order to take over casualties from unit medical detachments as soon as possible, thereafter delivering them to the clearing station without a stop.

d. Decentralized collection.—Unit medical detachments may be reinforced with ambulances and litter squads of the collecting company, and the responsibility for evacuating their own casualties to the clearing station be passed to the commanders of units so reinforced.

SECTION IV

AMBULANCE EVACUATION

■ 52. ORGANIZATION.—Only in the medical regiment are ambulances organized into autonomous ambulance companies; in all other divisional medical units, ambulance elements are integral components of collecting companies. But, while the role of division ambulances has come to be considered a part of the operation of collection, the technique of ambulances is sufficiently specialized to warrant its consideration in a separate chapter.

■ 53. FUNCTIONS.—*a. General.*—The ambulances of the division medical unit furnish the transportation (described below) within the division area. They are not employed normally to evacuate casualties *from* the division; this is a function of ambulance units of higher echelons. However, in special situations, a division may have to assume temporarily the responsibility of the evacuation of its clearing station(s); and, in such case, division ambulances are used

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for the task. The ambulances of the division medical unit must not be confused with the organic ambulances of certain medical detachments in the division, notably those of the artillery.

b. In other than combat situations.—The transportation of evacuees from dispensaries to the agency designated to receive the patients of the division.

c. In combat.—(1) *Primary.*—(*a*) The transportation of evacuees from collecting stations (and, occasionally, certain aid stations (see par. 47*k*)) to the clearing station.

(*b*) The transportation of litter wounded from advanced ambulance loading posts to collecting stations.

(*c*) Emergency care and treatment of sick and injured en route.

(2) *Secondary.*—(*a*) The transmission of messages from one medical unit to another along the assigned routes of evacuation.

(*b*) The transportation of medical supplies from the division medical dump to units farther forward.

(*c*) The transportation of medical personnel, particularly of collecting units, to and from battle stations.

■ 54. ORDERS.—Orders to ambulance units may specify the exact route, or routes, to be used, or they may list certain available routes and leave the final selection to the discretion of the ambulance commander. In either event the ambulance commander must be informed of all traffic restrictions that may affect his operations.

■ 55. RECONNAISSANCE.—Whenever practicable, ambulance commanders should reconnoiter all routes available or likely to become available within their zones of operation. Such reconnaissance is not alone for the purpose of selecting, or familiarizing themselves with, initial routes, but also for securing information of alternate routes in the event that changes in the situation may indicate, or require, the abandonment of the initial route.

■ 56. AMBULANCE PLAN.—The ambulance plan should include—

a. The initial ambulance route, and possible alternate routes.

b. Locations of the ambulance station (of ambulance com-

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panies only), of relay posts, of control points, and of advanced ambulance loading posts.

c. Distribution of ambulances among tasks and among the several posts.

d. Provisions for supply and maintenance of transport.

e. Provisions for relief and messing of personnel.

■ 57. AMBULANCE ROUTES.—The following considerations govern the selection of ambulance routes:

a. Availability.

b. Physical characteristics such as the surface, width, and grades of roads, and the passability of cross-country routes.

c. Other traffic on same routes or portions thereof.

d. Relative length, compared with other possible routes.

e. Proximity to terrain features or installations that may draw enemy fire, or intersections likely to be interdicted.

f. General protection from enemy observation and fire.

g. Cover for concealment of movement, or for ambulances at rest.

■ 58. CONTROL.—*a. Ambulance station.*—(1) Ambulance companies establish an ambulance station in combat, wherein are located the company CP and the housekeeping and motor maintenance facilities of the company. The basic relay post (see par. 59*a*(3)) also is located at the ambulance station in the average situation.

(2) The ambulance station must be on, or immediatly adjacent to, the route used by the ambulances of the company. It should be beyond the range of hostile small-arms fire, and be protected from flat-trajectory artillery fire. Concealment is most desirable, with cover and hard standings for the transport. Sites near other installations, likely to invite hostile fire or air attack, should be avoided. A location between one and two miles in rear of the collecting station is optimum. The site should be large enough to accommodate the CP, message center, motor park(s), kitchen, and bivouac.

b. Ambulance platoons and sections.—Ambulance platoons and sections that are parts of collecting units have no integral housekeeping or motor maintenance facilities, and hence establish no ambulance station. The platoon or section CP is established at the point where ambulances best

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may be controlled—ordinarily at the basic relay post. The technique of ambulance control is the same as employed by ambulance companies.

c. Message center.—The message center is established at the side of the route used by ambulances so that they may be examined without causing them to leave the route. It is operated by the message center clerk, and its functions are—

(1) To receive, dispatch, and record all messages to and from the units.

(2) To act as a clearing house for all messages and supplies carried by the ambulances of the unit for other units. The destination of such messages and supplies is checked at the message center, and, if the ambulance upon which they arrive be not proceeding directly to such destination, they are placed upon the proper ambulance. This is the rule in the case of messages and supplies en route from rear to front, since ambulances returning from the clearing station normally stop at the basic relay station. (See par. 59*c*.)

(3) To stop and examine each ambulance en route to and from the clearing station, entering the following data in the unit "log" in each case:

(*a*) Serial number of the ambulance.

(*b*) Name of the driver.

(*c*) Hour of arrival or departure of the ambulance.

(*d*) If the ambulance be carrying patients, the number *each* of litter and sitting patients.

This log serves two purposes: it is a current record of the distribution of the ambulances of the unit; and it is a check on the number of casualties evacuated to the clearing station. (See app. IV for form for log.)

■ 59. AMBULANCE SHUTTLES.—*a. Definitions*—(1) The *ambulance shuttle* is a method of operating ambulance service in combat. It consists of one or more ambulance loading posts, one or more ambulance relay posts, and such ambulance control points as may be required. Its purposes are to keep an empty ambulance at each loading post at all times, to prevent congestion of ambulances at any one place, and to facilitate the control of ambulance traffic. The dispersion of ambulances in a shuttle reduces losses from any single missile, and prevents traffic tie-ups in places where maneuver room is restricted.

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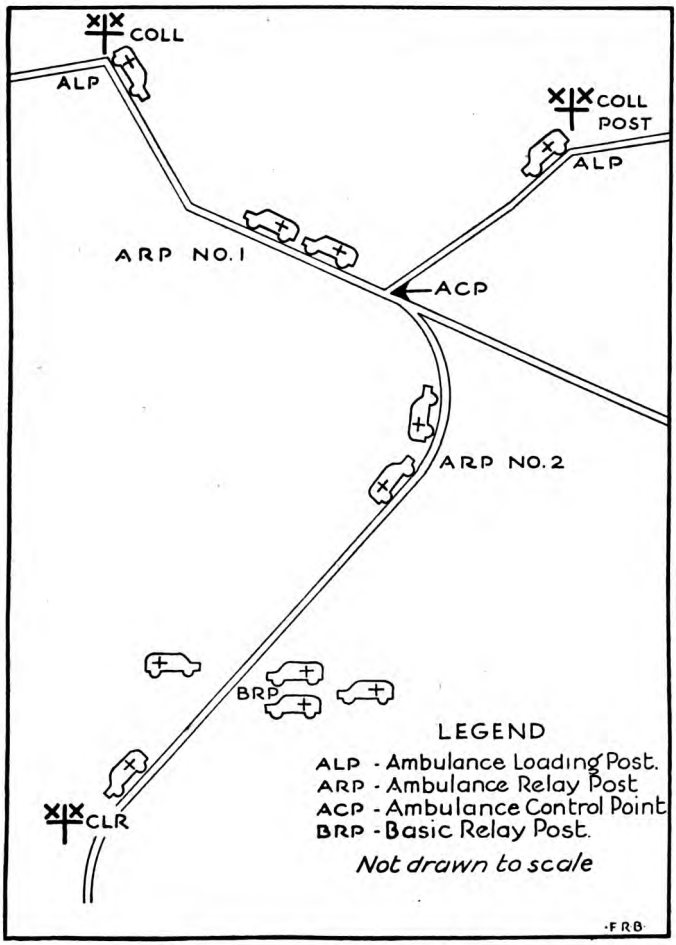


FIGURE 12.—Ambulance shuttle (schematic).

(2) *An ambulance loading post* is a point in the shuttle, normally the point farthest forward, where one or more ambulances are stationed, ready to receive patients for transportation. Ambulance loading posts are established by am-

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bulance units, but the loading of patients is normally done by collecting personnel.

(3) An *ambulance relay post* is a point in the shuttle where one or more empty ambulances are stationed ready to advance to replace an ambulance which has left the next post toward the front, whether it be another relay post or a loading post. Relay posts are numbered from front to rear.

(4) The *basic relay post* is that relay post farthest to the rear where the bulk of the unemployed ambulances, or such as remain after all other relay posts have been provided for, are stationed. Insofar as facilities for ambulances are concerned, the requirements of a site for the basic relay post are the same as for an ambulance station and ambulance companies ordinarily locate their basic relay posts at the ambulance station. Ambulance platoons and sections select similar sites for their basic relay posts.

(5) An *ambulance control point* is a point at a cross road or road junction where an ambulance route divides into two or more routes to different loading posts. It is operated by a noncommissioned officer or private of the ambulance unit. This soldier, knowing which route each loaded ambulance has followed, directs its replacement moving forward to that route. This maintains the proper number of ambulances in each spur of the shuttle.

(6) An *advanced ambulance shuttle* is an ambulance shuttle which is operated between a collecting station and one or more loading posts farther forward. Its purpose is to relieve litter squads of the collecting unit of all or a part of their task. In collecting companies which include ambulance elements, the collecting unit commander directs the establishment of the advanced shuttle. When the supporting ambulance element is autonomous, the collecting unit commander requests the ambulance unit commander to establish the advanced shuttle. In case of disagreement as to the feasibility of the action, the collecting unit commander must appeal to the next higher common commander—usually the regimental commander.

b. Establishing ambulance shuttle.—(1) *General.*—The establishment of an ambulance shuttle may begin at either end. When the ambulance unit transports the collecting unit via the ambulance route to the site of the collecting station, the responsible officer makes a reconnaissance on the journey for-

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ward, selects the locations of relay posts, and drops from the convoy on its return journey the proper number of empty ambulances at each post selected. If the convoy does not travel the entire ambulance route prior to the establishment of the ambulance station, the responsible officer reconnoiters the remainder, returns, and leads forward the proper number of ambulances to establish each relay and loading post selected.

(2) *Location of relay post.*—The following features are desirable in the location of a relay post:

(*a*) Hard standing which does not interefere with the passage of ambulances en route.

(*b*) Cover for concealment of ambulances at the post from ground and aerial observation.

(*c*) Unobstructed view of the ambulance route; clearly visible to ambulances en route.

(*d*) Protection from direct fire.

(*e*) Ample distance from terrain features or other installations that may invite hostile fire or air action.

(3) *Distances between relay posts.*—The number of relay posts and the distances between them will vary with the situation. The primary purpose of the shuttle being to keep an empty ambulance at each loading post at all times, the first relay post should be near enough the loading post to permit a loaded ambulance to be replaced without delay. Distances between succeeding relay posts will depend upon suitable locations, the total length of the shuttle, the rate at which ambulances are loaded, and the number of ambulances that it is desirable to keep forward of the basic relay post. In general, relay posts should rarely be located nearer each other than 500 yards, nor farther apart than 1,500 yards.

(4) *Number of ambulances at each relay post.*—(*a*) Obviously, the minimum number of ambulances allocated to a relay post is one. The maximum number depends upon the situation. There are disadvantages in allocating a single ambulance to a relay post: the post either must be plainly marked or a soldier in charge must be stationed there, else drivers may pass it inadvertently; it permits of no transfer of messages or supplies to ambulances that will arrive at the loading post sooner; and one missile may destroy the entire post. These disadvantages are largely obviated by allocating two ambulances to each relay post. More than two is

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rarely indicated, except at the basic relay post.

(*b*) Whenever more than one ambulance is stationed at a relay post, including the basic relay post, they must be dispersed sufficiently to prevent more than one ambulance being put out of action by a single missile.

c. Operation of shuttle.—(1) *General.*—(*a*) An ambulance is loaded at a loading post and starts to the rear. As it passes the first relay post, the forward ambulance in that post moves at once to the loading post; the second ambulance in the first relay post moves to replace the first in the forward position in the post, and this shift continues until all ambulances in the post have moved forward one position.

(*b*) As the loaded ambulance on its way to the rear passes the second relay post, the forward ambulance in that post moves forward and occupies the rear position in the first relay post; and the other ambulances in the second relay post shift their positions one place forward as described above. This same operation is repeated as the loaded ambulance passes each relay post, including the basic relay post, on its journey to the rear.

(*c*) When the loaded ambulance has discharged its patients, usually at the clearing station, it returns to the basic relay post and takes station.

(2) *Control.*—A noncommissioned officer or other qualified soldier should be placed in direct charge of the basic relay post since the number of ambulances stationed there and the necessity for dispersion may make control of this post difficult. If personnel can be spared, there are advantages in placing a soldier in charge of each relay post; the transfer of messages and supplies is thereby facilitated, and control is improved generally. However, if more than one ambulance be allocated to each relay post, an additional soldier in charge is not absolutely essential. Well-trained drivers are able to operate without other supervision.

(3) *Forwarding messages and supplies.*—For the delivery of messages on the way to the rear see paragraph 58*c*. Messages and supplies on the way to the front are expedited by the following procedure: the message center removes such messages and supplies from ambulances reporting to the basic relay post and places them on the first ambulance proceeding thence toward the front. As the latter ambulance reaches the next relay post, such messages and supplies are

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transferred to the ambulance occupying the forward position in the post, and are similarly transferred to the leading ambulance in each relay post. The soldier in charge of an ambulance control point examines all messages and determines the destination of all supplies passing his post en route to the front. If necessary, he retains them in his possession until an ambulance passes his post destined for the proper loading post. Ambulances are not diverted from their proper routes to make such deliveries. Urgent messages, and supplies urgently needed, are not forwarded through the shuttle.

■ 60. OPERATIONS.—*a. Responsibilities of unit commander.*—An ambulance unit commander is responsible for all phases of the activities of his unit. The more important of these responsibilities are—

(1) Establishment, supervision, control, and termination of the ambulance service furnished by his unit.

(2) Provision of shelter, facilities for messing, and opportunities for resting to the personnel of his unit.

(3) Maintenance of the transport of his unit, including its protection from enemy action.

(4) Supervision of the operations of his unit as an agency of communications and of delivery of supplies.

(5) Emergency treatment of patients committed to the care of his unit.

(6) Transmission of timely information to his immediate superior concerning the situation within his unit.

b. Absences of unit commander.—Proper performance of his many duties will require the unit commander to be absent from his CP much of the time. Before so absenting himself, he must notify the message center of his probable whereabouts.

c. Allotment of tasks.—Whenever the general mission of the unit comprises two or more component tasks, or whenever only a portion of the means of the unit is required for the unit task, tasks should be allotted to prescribed subordinate elements of the unit, such as platoons or sections, rather than to detachments improvised from ambulances of two or more elements.

d. Plans and orders.—(1) The dependency of ambulances upon routes and the possibility of denial, at any time, of their use by the enemy require an ambulance unit commander

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to have, at all times, at least one alternate plan that can be placed in operation without delay. He must have a working knowledge of all available routes in his zone of action, and plans for their adaptation to his requirements. His plans must include provision for the movement, in either direction, of the termini of his ambulance routes.

(2) The orders of an ambulance unit commander usually are issued orally or in the form of written messages to his subordinates.

e. Liaison.—Since normally the ambulance unit is the connecting link between the functions of collecting and clearing, close liaison with the two units charged with those functions is necessary. Personnel for such duty is very limited in the smaller ambulance units and some may have to be borrowed from other elements of the collecting company. Whenever possible, liaison should be maintained as follows:

(1) *With collecting station.*—A junior officer or a noncommissioned officer of the ambulance unit is stationed at the collecting station. His principal duties are:

(*a*) To supervise the operation of the forward end of the ambulance shuttle. It must be remembered, however, that the loading of ambulances, including the determination of numbers to be carried in each load, is a responsibility of the collecting unit.

(*b*) To keep the ambulance unit commander informed of the situation at the collecting station.

(*c*) To supervise the property exchange. (See par. 7*b*.)

(*d*) To transmit, to the proper agency in the collecting unit, messages and supplies brought forward by ambulances.

(2) *With clearing unit.*—A noncommissioned officer of the ambulance unit is stationed at the clearing station. His principal duties are:

(*a*) To exercise general supervision of ambulances during their stay at the clearing station. The unloading of ambulances at this point is a responsibility of the clearing unit.

(*b*) To supervise the property exchange. (See par. 7*b*.)

(*c*) To deliver to returning ambulances such messages and supplies as they are to carry to the front.

(*d*) To inform the ambulance unit commander of any changes in the clearing plan.

f. Emergency treatment of patients en route.—All drivers and assistant drivers are trained in first aid and carry the

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individual equipment of the medical soldier. It is their duty to render such first aid to patients en route as may be required. In addition, when a loaded ambulance is checked at the message center, a medical officer, when practicable, or a noncommissioned officer should inspect the patients to ascertain any need for emergency treatment. Such technical measures are necessarily of limited scope, but an ambulance unit is responsible for rendering such emergency treatment as is possible with the means at hand.

g. Protection af ambulances and patients.—Ambulances are no more sacred than other military means; nor are the lives of patients more precious than those of effectives. When necessary to the accomplishment of the mission, both must be exposed to danger. However, all practicable measures must be pursued at all times to minimize the danger of destruction of ambulances and the further injury of patients. The more important of these measures are—

(1) *Concealment* (see pars. 57 and 59*b*(2)).—Movements may be made at night without lights when daytime movement is impossible.

(2) *Defilade.*—Full use should be made, at rest and in movement, of any protection offered by the terrain.

(3) *Dispersion.*—In convoy and at rest, when exposed to the danger of hostile fire or air action, the distances between ambulances should be increased to the point where serious damage is possible to no more than one vehicle from any one missile.

(4) *Mobility.*—Speed, up to the practical limit of safety, should be employed in crossing exposed stretches. Beyond the limit of safety, it may prove more dangerous than the enemy.

h. Transportation of collecting unit personnel.—When the personnel of a collecting unit are transported by an ambulance unit, the movement is under the control of the ambulance unit commander, unless his unit be a part of the collecting unit. If such details of the movement be not prescribed by higher authority, he determines the route, speed, and arrangement of the convoy, and the point at which the movement must be stopped in the interest of the safety of his vehicles. The trucks of the collecting unit follow at the rear of the vehicles of the ambulance unit.

i. Directing signs.—Whenever practicable, directing signs,

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suitably marked with the unit designation, should be posted at all points along an ambulance route where drivers may become confused. Experience has shown that regardless of the training of drivers, they frequently lose their way in strange country, especially where routes are not well marked. Other suitable signs marking the ambulance station, message center, motor park, and relay, control, and loading posts may be used.

j. Road and bridge repair.—While maintenance of ambulance routes is not a primary responsibility of an ambulance unit, in emergencies, ambulance personnel must make temporary repairs to roads and bridges to prevent interruption of the service. Ambulance units are equipped with simple tools for this purpose.

SECTION V.

CLEARING

■ 61. DEFINITIONS.—*a. Clearing* is the process of disposing of the casualties of a division or comparable unit. It consists of sorting all casualties of the unit, returning to duty such as are immediately fit for full duty, and transferring all other, except the dead, to a medical unit of a higher echelon. It is not to be confused with hospitalization.

b. A *clearing station* is an installation established by a clearing unit for the purpose of discharging the function of clearing.

■ 62. CLEARING UNITS.—*a. Functions.*—(1) *General.*—A clearing unit is necessary to supplement the service rendered by other echelons of the medical service of the division. Collecting stations must not be located too near the front to permit their being equipped for the thorough treatment of shock or for the preparation of patients for extended evacuation. Nor can there function at collecting stations the clerical force necessary in the preparation of reports and returns required by the commander and of the individual records of patients.

(2) *Combat functions.*—A clearing unit is primarily a combat organization. Its principal function is to establish and operate in combat one or more clearing stations at which casualties are received, sorted, given temporary care and emergency treatment and, when indicated, prepared for

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further evacuation and transferred, *at the clearing station,* to a medical unit of a higher echelon, usually an ambulance unit of the army medical service.

(3) *In other than combat situations.*—If a clearing unit be organized and equipped for the purpose, it may undertake limited care and treatment of such sick and injured as will be fit for full duty within a short time (see par. 10). The discharge of this function, however, requires suitable organization and equipment.

b. Functional organization.—(1) The organization of clearing units varies with the type of division medical unit of which they are parts (see par. 19*a*). However, all clearing units are organized functionally into unit headquarters, a technical group, a ward group, and a transportation group.

(2) *Unit headquarters* comprises such commissioned and enlisted personnel as are required for the command and administration of the unit.

(3) The *technical group* comprises the commissioned and enlisted personnel who render technical aid to casualties.

(4) The *ward group* comprises the attendants who care for casualties before and after technical aid has been given.

(5) The *transportation group* comprises the personnel required for the operation and maintenance of the transport.

■ 63. CLEARING UNIT COMMANDER.—*a. General.*—The senior officer of the Medical Corps present for duty with a clearing unit commands it.

b. Duties and responsibilities.—(1) *General.*—The administration, discipline, morale, and training of the company.

(2) *In combat.*—(*a*) Unlike the commanders of other subordinate elements of the division medical service, the duties and resposibilities of the clearing unit commander are restricted largely to the establishment and operation of the clearing station.

(*b*) Keeping higher authority informed of the situation at the clearing station.

(*c*) While the arrangement for evacuation of a clearing station is a responsibility of the division commander, the clearing unit commander should keep the agency charged with the evacuation of his station fully informed of the situation with regard to numbers and classes of transportables awaiting evacuation, and of any anticipated changes in the

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situation. Cooperation in this respect will facilitate the movement of evacuees.

c. Relations with other units.—The only direct contacts of a clearing unit are those normally with division ambulance units to the front, and with ambulance units of higher echelons to the rear. In each case the responsibility for liaison rests with the ambulance units, whose dispositions and movements must conform to those of the clearing station.

■ 64. ESTABLISHING CLEARING STATION.—a. *When established.*—To prevent immobilization of the division medical service, there must be a clearing station ready to receive patients as soon as any collecting station is ready to evacuate patients. In the usual situation, this will be within one-half to one hour after collection begins.

b. Selection of sites.—(1) *Responsibility.*—The number of clearing stations to be established, and their general locations, are elements of the division medical plan. Unless prescribed in detail in the field order of the division medical unit, the selection of the exact site is a responsibility of the clearing unit commander.

(2) *Essential features.*—(*a*) A location on or readily accessible to routes of evacuation, both from collecting stations and to the supporting medical unit of a higher echelon.

(*b*) Space enough for a complete clearing station. A complete station is one of sufficient capacity, either organic or through reinforcement, to clear all casualties that may pass through it. In the selection of a site, the possibility of expanding the initial station must always be considered.

(*c*) Adequate supply of water. If a practicable means of transporting water is available, the source of the water need not be at the immediate location of the station.

(3) *Desirable features.*—(*a*) Beyond the effective range of hostile light artillery.

(*b*) Protection from medium and heavy artillery (rarely completely attainable).

(*c*) Cover for concealment. Concealment of a clearing station is not alone for the purpose of safety. The location of a clearing station affords the enemy a reliable index to other dispositions of the division.

(*d*) Suitable buildings to substitute for or supplement tentage.

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(*e*) Centrally located with reference to the lateral boundaries of the units which the station is supporting.

(*f*) Local fuel supply.

(*g*) Ample hard standings for ambulances and for the unit transport.

(*h*) A road loop to facilitate ambulance traffic.

(*i*) Good drainage and, when tentage must be used, soil suitable for the erection of canvas.

(4) *Undesirable features.*—(*a*) In general, the opposite of the features listed as desirable.

(*b*) Areas that favor the persistence of chemical agents. In general, these are low places and heavily wooded areas. This feature must be carefully weighed against the advantages of concealment and protection from artillery fire.

(*c*) Proximity to terrain features or other installations that may invite hostile fire or air action.

(5) *Average location.*—The average location of a clearing station may be said to be one between 4 and 7 miles in rear of the division front line which combines as many desirable and as few undesirable features as possible with all essential features.

c. Organization and operation.—See FM 8–5.

d. Protection.—(1) While all medical installations are protected by the Geneva Convention, modern warfare has introduced problems not foreseen when that agreement was reached. In the first place, the location of a clearing station is an index to the tactical dispositions of the division, and, for this reason, the division commander will, in many situations, desire that its location be concealed. Since to be protected by the Geneva Convention it must be plainly marked, there can be no compromise between the two considerations.

(2) In the second place, aerial bombing is not always sufficiently accurate to insure immunity to a medical installation when there are legitimate targets in the vicinity; and it rarely will be possible to locate a clearing station at sufficient distances from all such targets to avoid this danger.

(3) It is safe to say that the day has passed when clearing stations could be established under canvas on open terrain. When canvas is used it will have to be erected under trees or carefully camouflaged. Careful concealment of clearing stations will be the rule.

e. Directing signs.—Directing signs should be posted at crit-

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ical points on the ambulance routes, and the military police in the area informed of the exact location of the clearing station.

■ 65. OPERATIONS.—For details see FM 8–5.

a. The ideal situation is that where casualties are admitted largely from collecting units, given such emergency treatment as is necessary, prepared for further evacuation, and promptly turned over to the medical unit of the third echelon which is in support. This ideal rarely is attainable.

b. The flow of casualties is not constant. They tend to arrive intermittently in groups, straining the facilities of the station to provide prompt attention to each. This requires careful sorting in the receiving department, so that priority may be given the more serious cases.

c. A proportion of admissions will be *nontransportables.* A nontransportable is a patient that cannot be evacuated farther without real danger to life or limb. If there be a surgical hospital in immediate support of the clearing station, such cases may be transferred at once to that unit. But, if not, they must be cared for indefinitely in the clearing station.

d. Evacuation of the clearing station is intermittent. For reasons of economy and in the interest of control, army ambulances ordinarily arrive in convoys. Patients must be cared for until disposed of.

■ 66. MEDICAL RECORDS.—*a. Accompanying patient.*—Each patient should arrive at the clearing station with an EMT attached to him. If not, one is made out in the receiving department and there attached to him. Concise records of all treatment given in the clearing station are entered thereon, and the EMT remains with each patient when he is evacuated. They are taken from the dead and those returned to duty, and disposed of as prescribed in FM 8–45.

b. Casualty reports.—Casualty reports are made and forwarded through the division surgeon to the division adjutant at prescribed times. Such reports consist of lists of all admissions by name, with the serial number, rank, organization, cause of admission, and disposition of each patient set opposite his name.

■ 67. DISPOSITION OF PATIENTS.—*a. Transferred from the division.*—These include patients transferred to surgical hos-

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pitals within the division area and to other medical installations farther to the rear. The records of such patients are closed. Their equipment is retained by the supply section. Each must have, attached to his person, an EMT properly made out and with entries complete to date. The loading of the transport for such patients and, in case more than one type of transport be used, the type of transport for each patient is controlled by the evacuation officer.

b. Returned to duty.—Patients not under arrest may be returned to their organizations in one or several ways. The choice of methods depends upon the situation. They may be permitted to return individually, either afoot or on transport returning toward their organizations. They may be held at the clearing station until a group is collected; this group may be returned in charge of a noncommissioned officer—either one who is a discharged patient or another detailed for the purpose. Or they may be held at the clearing station until sent for, either by their organizations or by another agency designated by the division commander. Malingerers and deserters must be placed in arrest and delivered to the military police at the clearing station. A written statement of the alleged offense should accompany each such case. Their individual equipment must be restored to all patients returned to duty.

c. Prisoners of war.—Prisoners of war are disposed of the same as any other patients. If they require further treatment, they are evacuated. Whether or not a guard is furnished is decided by military police or higher authority. When in the clearing station, prisoners of war, who are fit for some duty, should be employed. Their retention for duty is a command decision. (See par. 12*b*(1)(*e*).)

d. Deaths.—All deaths in the station are reported to the evacuation department. This department closes the records of such cases and sends them to the clearing section.

e. Records.—A record of the disposition of all patients, whether by death, evacuation, or return to duty, is maintained in the evacuation department. For a form for the evacuation record see appendix IV. This record is submitted at intervals to the clearing section.

■ 68. EVACUATION OF CLEARING STATION.—*a.* Evacuation of a clearing station is the responsibility of the medical echelon

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next above the division medical service—ordinarily the army medical service. The division surgeon submits to the division G–4 his recommendations concerning the arrangements to be made for evacuating the division clearing station(s), and the latter makes the arrangements of which he approves, with the proper command echelon. In practice it is customary to permit the division surgeon to arrange the details directly with the surgeon of the echelon responsible for this evacuation.

b. Evacuation may be arranged by a schedule of prescribed hours when ambulance convoys will arrive at the clearing station(s), or *on call.* In the latter method, the division surgeon notifies the responsible surgeon on each occasion that evacuation is required, informing him of the numbers and types of evacuees. There is, of course, a time lag between the request for evacuation and the arrival of the convoy, which will vary with the situation but which must always be considered in planning.

■ 69. SURGICAL HOSPITALS.—*a.* Surgical hospitals are mobile units of the army medical service designed primarily—

(1) To provide adequate facilities near the front for major operative procedures necessary to save life or limb and which cannot be postponed until the casualty reaches an evacuation hospital.

(2) To relieve clearing stations immediately of nontransportables (see par. 65) in order to prevent the immobilization of such stations through the accumulation of casualties that cannot be immediately evacuated.

b. Surgical hospitals are located and operated by the army. The division medical plan includes a request for such support, when indicated, and, if approved, the division commander (G–4 acting in his name) will make such request of the army commander. However, the army may provide such medical support without having been requested to do so. The division may be given some responsibility in the selection of the site for the surgical hospital and in moving it into position; but ordinarily control of its operations remains with the army.

c. The ideal location of a surgical hospital is one immediately adjacent a clearing station, so that serious cases can be transferred at once by litter squads. Much of the value

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of a surgical hospital is lost if time and transport are required in this transfer.

d. When a clearing station must be closed and moved without delay, all its remaining evacuees may be transferred to the surgical hospital to await further evacuation. The surgical hospital remains in position until it can dispose of all its patients in a proper manner. It must be remembered that the responsibility for, and control of, a patient passes from the division to the army when he is admitted to a surgical hospital, even though it be immediately adjacent the clearing station in the division area.

■ 70. RETENTION OF CASUALTIES.—There are situations in which it is impossible to evacuate a clearing station such as with the encircling force in pursuit and when the communications of a force are interrupted. If there be no surgical hospital available, the clearing station must retain such casualties for care and treatment until the situation becomes more favorable. If movement of the station becomes necessary during this period, there is the choice only between moving the casualties and leaving them behind, properly sheltered and provided with a care-taking detachment of medical personnel. In camps and in rest areas behind the lines, an evacuation policy may be established providing for the retention of short-duration cases for definitive treatment in the clearing station (see par. 10).

■ 71. CLEARING OF ARMORED DIVISIONS.—*a. Governing factors.*—(1) The division, when operating in enemy rear areas, is in motion a large part of the time except during the hours of darkness.

(2) Communications with supporting echelons frequently are interrupted for varying periods of time. While the administrative sufficiency of the division may be limited to 48 hours, essential supplies, such as fuel, lubricants, and food, may be dropped from airplanes or captured from the enemy, thus extending more or less indefinitely the period in which the division can tolerate interrupted communications. There is no comparable solution of the medical problem.

(3) Security for the service elements of the division, including the division of medical service, must be provided in all directions.

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b. Clearing station.—(1) The clearing station must be as mobile as other service elements of the division. Since the latter are in movement a large part of the time, the clearing station must be on wheels.

(2) While every advantage must be taken of halts, the situation will be unusual in which all the essential facilities of a clearing station can be established on the ground. Tentage for the shelter of casualties is useless. Much of the actual care and treatment of casualties will have to be undertaken when the column is moving, and the operation of this station will not be unlike that of a hospital train.

c. Evacuation.—(1) Evacuation will be accomplished in the normal manner whenever feasible. When communications are interrupted, the division commander has a choice of only three alternatives:

(*a*) Evacuating his own casualties in convoys protected by mechanized vehicles.

(*b*) Carrying his casualties with the division until communications are reestablished.

(*c*) Abandoning his casualties.

(2) When ground communications are interrupted, there remains the possibility of evacuation by air. The feasibility of this operation will depend upon suitable landing fields and proper timing.

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CHAPTER 3

MEDICAL SERVICE IN CAMP AND BIVOUAC

■ 72. DEFINITIONS.—As used herein, a camp is a temporary or semipermanent station for troops, located beyond the radius of activity of hostile ground forces; a *bivouac* is a temporary resting place for troops, without permanent shelter and sanitary facilities and exposed to attack by hostile ground forces.

■ 73. MEDICAL SERVICE IN CAMP.—*a. General.*—The considerations governing the dispositions of troops in a camp are convenience in command and administration, facilities for training, and the adaptability of the terrain to sanitary requirements. For the responsibility of the medical service in connection with the selection and arrangement of camp sites see **FM 8–40.**

b. Priority.—(1) The incidence of sickness in any group of people, including soldiers, is among the most predictable of all events. Every unit of any size will arrive in camp with sick or injured requiring immediate care and treatment. These sick and injured face only two possibilities: proper medical care or unnecessary suffering and increased mortality, both of which are scandalous matters not tolerated in a democracy.

(2) The first requirement in the establishment of any camp is the provision of proper facilities and sufficient medical personnel for the care and treatment of the sick. Medical units, in proper proportions, must be given a high priority in each phase of a concentration.

(3) There have been concentrations in the past in which temporary hospitals were established after concentration had begun, and manned by medical personnel assembled from many posts and stations, few of whom had ever served together before. It is no more reasonable to expect the hastily assembled complement of a hospital to function efficiently at once than it is to expect an infantry battalion, organized one day from detachments of scattered units, to acquit itself with distinction in combat on the following day.

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Regardless of the efficiency of individuals, units must be given time to "shake down." Responsible officers in hospitals must acquaint themselves with the capabilities and limitations of their assistants, and perfect a professional and administrative organization. The period required in "shaking down" is lessened materially by training a hospital complement as a unit prior to the establishment of the hospital. Even then it should be given an opportunity to become acquainted with the new plant (see *c* below) and to arrange its equipment before being required to receive patients. Obviously this does not apply in the case of mobile medical units thoroughly trained to operate under all possible conditions.

c. Physical plant.—(1) Temporary care and emergency treatment of the sick and injured must be undertaken at the time and the place that the patient and the medical service are brought together, regardless of the available facilities. However, this is a responsibility imposed by necessity rather than by professional judgment.

(2) Tentage is not satisfactory shelter for seriously ill or injured patients. Optimum temperatures cannot be maintained under canvas in either hot or cold weather. Dust cannot be excluded, and infection is introduced and spread through this medium. Surgical procedures may not be undertaken with any reasonable assurance of asepsis. The disabled require more conveniently arranged sanitary facilities than can ordinarily be provided in tents. *Tentage is never the shelter of choice for sick and injured.*

(3) Proper definitive care and treatment of patients require the more important facilities of a permanent plant, even though such facilities be installed in existing buildings constructed for other purposes or in temporary buildings erected for hospital use. Large warehouses and other industrial structures usually are poorly subdivided, and are apt to be located in an environment wherein cleanliness is difficult or impossible. While in the absence of more satisfactory buildings such structures may be used temporarily, their selection for extended use can rarely be justified. Few private dwellings are well adapted to hospital use because of poor internal arrangement and, especially, their narrow, steep, or twisting stairways impossible of passage with a patient on a litter. Apartment houses are usually satisfac-

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tory, provided stairways are suitable or that they are equipped with elevators that will accommodate wheeled or other litters. Public buildings, such as schools and courthouses, as a class, are well adapted to hospital use. Ample corridors lead to all parts of the building, stairways are wide, rooms are large, and sanitary facilities are designed to provide for the needs of groups rather than of individuals.

(4) Obviously, civil hospitals are the most ideal of all existing structures, but their exclusive use is rarely feasible because of the requirements of the civil population. Nor, in general, since civil populations make less use of hospitals than do military forces, is their capacity sufficient for any considerable number of troops. The hospitalization of military personnel in institutions operating under civil jurisdiction is an expedient that should be chosen only in emergencies.

(5) In the absence of suitable existing structures, new construction must be undertaken; but, whether the plant be of new construction or in a building adapted to the purpose, so much of the plant as is necessary must be completed, equipped, manned, and ready to receive patients when such patients appear.

d. Sanitation.—Sanitation, in its broadest sense, is the first concern of the surgeon of every unit in camp. In this connection see paragraph 5, and FM 8–40.

e. Training.—Training is the principal activity in a camp. All other essential functions are so organized as to interfere as little as possible with training. The medical service must be organized to provide prompt and adequate care and treatment of the sick and injured and, at the same time, afford the opportunity for proper training of medical personnel. Since casualties in camps are confined to diseases and nonbattle injuries (except in the case of air attack), medical units of the division, at authorized strengths, can be properly trained while discharging their service functions.

f. Attached medical personnel.—(1) *Dispositions.*—The dispositions of the several sections of a regimental detachment will be dictated by the dispositions of the subordinate elements of the regiment. Whenever possible, however, control of all sections should be retained by the detachment commander in the interests of training and administration. This will not interfere in the least with the combined training

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of the battalion sections with their respective battalions. On the other hand, when the medical service of the unit can be centralized in one dispensary, the time available for all training is increased.

(2) *Functions.*—The functions of medical detachments in camp are the operation of dispensaries for the primary treatment of the sick and injured (see par. 30); assisting the surgeon in the prevention of disease and injury by operating prophylaxis stations, instructing all personnel of the unit in hygiene and first aid, and supervising sanitation; and training.

g. Collection.—Since ambulances can operate in all parts of a camp, there is no necessity for collecting units to function in evacuation. For the duties of collecting units in connection with sanitation see par. 41*a*(2). In addition to training, collecting units ordinarily furnish the interior guard for the division medical unit. They are equipped with arms for such duties.

h. Division ambulances.—Division ambulances evacuate the dispensaries of the various units of the division. To insure coordination, this task should be assigned to a particular ambulance unit; and, to facilitate training, the duty should be rotated among the ambulance units. Ambulances should evacuate dispensaries promptly after each sick call and on call at other times.

i. Clearing.—Clearing is primarily a combat function and is not an echelon of the medical service of a camp. Clearing units spend their time in camp in training, and may share the interior guard with collecting units. The clearing unit ordinarily operates the dispensary of the division medical unit. Experience has shown that clearing units cannot be given proper field training if they are required to operate a fixed hospital. Their duties in the field require facility in loading, transporting, unloading, and using their combat equipment, and this cannot be acquired in a fixed hospital. However, certain technical specialists in clearing units may, with profit, be given individual training in the fixed hospital of the camp.

j. Hospitalization (see also *c* above).—A station hospital should be established in, or very near, each camp. Patients from tactical units may be admitted by informal transfer from their unit dispensaries so that they are returned to their organizations when ready for duty. Those requiring

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treatment in a general hospital will ordinarily be transferred formally, and will require replacement.

■ 74. SICK CALL.—*a. Definition.*—Strictly speaking, sick call is a bugle (or trumpet) call. It announces the time for the assembly of all sick and injured, other than those in hospital, for the purpose of reporting to a medical officer. Through long usage, however, the term "sick call" has supplanted older terms, such as "sick parade," for the formation itself.

b. Personnel reporting at sick call.—The following enlisted men report at sick call:

(1) Those who have been seen previously by a medical officer and officially excused from all or a part of their duties because of some disability, but who have not been admitted to hospital for treatment.

(2) Those who have been seen previously by a medical officer and are undergoing observation or treatment without being excused from any part of their duties. Such cases may not be required to report at each sick call, but only at intervals prescribed by the responsible medical officer.

(3) Those still on a duty status who have a disability and who have not yet consulted a medical officer concerning it.

c. Hour of day.—Sick call is always on the regular list of calls in camp, which includes reveille, mess call, fatigue call, drill call, retreat, tattoo, taps, and others. It may be held any number of times during the day, but ordinarily never more than twice. The hours for sick call are fixed by the commander, but the surgeon has a responsibility in advising him thereon. The optimum hour for holding sick call depends upon several factors such as the physical condition, morale, and routine of the command, and the climate and epidemiological environment. The following considerations must be weighed in arriving at the decision:

(1) Military duties should be interfered with as little as possible. This indicates hours before scheduled duties begin or after they end.

(2) Sick call before scheduled duties begin has the advantage that the new sick will be sorted out early in the day and before they are required to do any duty. It has the disadvantage that the sick report is invariably heaviest when sick call is held at this time, and for these reasons:

(*a*) Some men, tired on rising or feeling the effects of

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some indiscretion of the previous evening, will interpret a disinclination toward duty as illness and have their names placed on the sick report. An hour or two of exertion usually cures such cases, and they are seen much less frequently when sick call is held at a later hour.

(*b*) Time is unavoidably consumed by the routine of sick call. A certain type of soldier, realizing this, will have his named placed on the sick report, knowing that he will be returned to full duty but expecting to miss some part of his duty by attending sick call.

(3) Sick call after recall has sounded (in either the morning or the afternoon) has the advantage that soldiers with insignificant disabilities, real or fancied, rarely will sacrifice their own free time to attend the formation. There is the danger, however, that men who become sick early in the day may await treatment unnecessarily; but this danger may be obviated by arranging that unit commanders send the obviously sick or injured, whenever detected, to the medical officer for treatment, reserving for sick call the less serious cases. Such an arrangement requires the cooperation both of unit commanders and of unit surgeons.

(4) The decision as to whether to hold sick call once or twice a day should be based upon—

(*a*) Sick rate. When the sick rate is low, one sick call a day is sufficient for the care and disposition of routine cases.

(*b*) State of discipline and training of the command. Recruits report sick oftener than older soldiers, because of lack of seasoning, nostalgia, and the novelty of free medical attention; and they are apt to forget to have their names placed on the sick report at the proper time. A second sick call later in the day will obviate much straggling into the dispensary with complaints that should await sick call.

d. Procedure in unit.—(1) Each soldier desiring medical attention reports that fact to his first sergeant and requests that his name be entered on his company sick report.

(2) At the proper time, such soldiers are assembled in the company and marched to the dispensary under command of a noncommissioned officer. The latter carries with him the company sick report and presents it to the medical officer holding sick call when the sick of his company are called for.

e. Procedure in dispensary.—(1) A medical officer, designated by the unit surgeon, conducts the sick call assisted by

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a medical noncommisioned officer or clerk.

(2) The sick of the various companies are called for in sequence—either in the order of their arrival at the dispensary or in any other sequence desired.

(3) When his company is called, the noncommissioned officer in charge of the sick of that company presents his sick report to the clerk. The clerk calls the names from the sick report, one at a time. As his name is called, each soldier steps forward and presents himself to the medical officer.

(4) The medical officer examines each case and indicates to the clerk the disposition (hospital, quarters, duty) and the line of duty status of the case. The clerk makes the proper entries in the sick report.

(5) As they are examined, cases are segregated by the following classes:

(*a*) Those to be returned to duty at once. If they are to be given medicine, prescriptions are given them which are filled in the pharmacy.

(*b*) Those to be held until the completion of the routine sick call for a more comprehensive examination. Entries opposite the names of such, in the sick reports, are postponed until disposition has been determined.

(*c*) Those to be treated (such as the dressing or redressing of an injury, or the application of a drug to the nose or throat) and then returned to duty. Other medical personnel may operate such treatment departments during the course of the sick call.

(*d*) Those admitted to the hospital. Except in emergencies, such cases are retained in the dispensary until collected by the division medical service or other agency designated to deliver patients to the hospital.

(6) After disposing of the sick of each company, and assuring himself that the entries in the sick report are correct, the medical officer signs the report and the clerk returns it to the noncommissioned officer charged with its custody at sick call. When further examination is required to determine the disposition of any case, that sick report must be retained in the dispensary until the decision is made. When there is doubt as to the line of duty status of any case, an interrogation mark (?) is a satisfactory entry until the point is determined. Decision must be made, however, prior to the final disposition of the case.

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(7) The name of a member of a company who is excused from duty because of sickness or injury is entered in the sick report each day until he is returned to duty or ceases to be a member of the company. His disposition is entered each day at the dispensary. It is the duty of the medical clerk to check the entries in each sick report against the pervious day's entries in order to detect the omission of the name of any remaining case.

(8) The names of officers excused from duty by reason of illness or injury must be entered in the sick report of their organization just as in the case of enlisted men but officers ordinarily report at the dispensary for treatment at hours other than sick call.

(9) After the sick of his company have been disposed of, the noncommissioned officer in charge of the detail collects such as are to be returned to duty immediately and marches them back to the company. If his sick report is completed, he takes it back with him; otherwise it is returned to the company later.

f. Medical examinations at sick call.—(1) *Purpose.—The primary purpose of sick call is merely to sort the disabled from those who are fit for duty.* All examinations at sick call are directed solely toward this end. Diagnoses of the exact nature of the disabilities, if any, are made after sick call is ended.

(2) *Thoroughness.*—The medical examination at sick call is sufficiently thorough to establish whether or not the soldier is fit for duty—but only that thorough. It is very poor practice to devote an inordinate amount of time to any one case with the result that others are kept waiting for long periods. In cases of doubt, the soldier is held until all cases have been seen at sick call, and then examined carefully at leisure. If doubt still exists after a thorough examination, *the soldier must be given the benefit of the doubt.* It is better to admit a hundred soldiers to sick report who are fit for duty than to send one to duty who is sick.

g. Medical care and treatment at other times.—Soldiers cannot be expected to regulate the onset of illness or the incurrence of injury by the schedule of calls; and, regardless of the hour of sick call, or how many sick calls are held daily, there will be cases that must be cared for at times other than at sick call. In well-trained commands, these

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cases will be comparatively few in number; but their need, nevertheless, is urgent. Whenever practicable, his company sick report should accompany every patient to the dispensary, whether he comes at sick call or at another time. In emergencies the patient is sent without the sick report, which should then be sent, with a proper entry, to the dispensary without unnecessary delay.

■ 75. PROPHYLAXIS STATION.—*a. General.*—The establishment of a prophylaxis station is in the first priority when a command reaches camp. In large camps, prophylaxis stations may be operated by camp overhead. Nevertheless, all division medical personnel should be trained thoroughly in the administration of venereal prophylaxis, against the day when such function must be assumed by each unit of the division.

b. Location.—A prophylaxis station should be so located as to be convenient without being unduly conspicuous. Many soldiers will abstain from the treatment either if it requires an effort to reach the station or if a visit thereto becomes a matter of common knowledge.

c. Physical arrangements.—Venereal prophylaxis is a medical procedure and must be given in surroundings compatible with its nature. Dark, dingy rooms housing mops and trash cans, and parts of latrines set aside for the purpose, are most unsatisfactory. Such arrangements convey, most properly, an impression of filth and infection, encourage attendants to be careless and slovenly, and cause the soldier to regard the treatment lightly, if not with active disgust. The room should be comparable to a surgical dressing room in location and appointments, kept equally clean, and equipped with instruments, utensils, and towels that both look and are clean. Only among such surroundings is the average soldier impressed with the dignity and efficacy of his treatment.

d. Attendants.—(1) Attendants must be thoroughly trained. Given improperly, the treatment may be painful or even injurious. Attendants must be physically clean and neatly dressed. They must employ aseptic technique in all stages of the treatment wherein it is possible. They must regard the treatment as a serious responsibility and realize that carelessness may result in a venereal infection that would have been prevented by careful attention to duty. They must preserve a dignified and impersonal manner toward the pa-

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tient; many patients regard such treatment as a peculiarly personal matter and not a proper subject for efforts at humor.

(2) As may be expected, the majority of American soldiers are fastidious about operations upon their person. They resent a facetious, indifferent approach to venereal prophylaxis, and often will avoid reporting for a treatment that offends their sense either of propriety or decency.

■ 76. MEDICAL SERVICE IN BIVOUAC.—*a. General.*—The dispositions of troops in bivouac are governed by considerations of security, secrecy, and future tactical employment. Their arrangement usually differs from that in camps, tactical units being more widely dispersed and security detachments operating at some distances from the bivouac area proper. Necessity for secrecy may impose restrictions upon medical operations. For the medical service of an outpost see paragraph 77.

b. Attached medical personnel.—Battalion sections are ordinarily attached to their respective battalions and, depending upon the situation, may or may not operate battalion dispensaries. The regimental dispensary may be able to serve one or more battalions in addition to the headquarters, but tactical considerations will prohibit soldiers wandering any distance in search of medical care.

c. Collection.—A collecting station is not established in bivouac. (See also par. 77.)

d. Evacuation.—Division ambulances evacuate dispensaries. This mission ordinarily is assigned to one ambulance unit (either the ambulance platoon of a collecting company or an ambulance company, depending upon the type of division medical unit), and may be rotated among such units. Depending upon the situation, dispensaries may be evacuated at prearranged hours, on call, or by both methods.

e. Clearing.—The disabled must be evacuated from the division area as in any situation in the presence of the enemy; so a clearing station must be established for that purpose, although only so much of its equipment is set up as the immediate situation requires.

■ 77. MEDICAL SERVICE OF OUTPOSTS.—*a. General.*—(1) An outpost is a security detachment posted to protect the main body from hostile ground observation and against a surprise attack. The distance that it operates from the main body

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depends upon its strength, composition, and mission, and upon enemy capabilities. This distance is usually sufficient to protect the main body from hostile small-arms fire, and may be great enough to prevent the enemy's artillery from bringing effective fire upon the main position.

(2) There may be but one outpost operated under central control; there may be two or more outposts, each a separate command operated under central control or the various units of the command may each outpost their own positions or areas with local security detachments. The details of the medical service of an outpost will depend upon the organization, size, and character of the outpost.

b. Security.—Local security detachments are furnished medical service by the battalion sections of the units from which they are drawn.

c. Attached medical personnel.—Battalion sections are attached to their respective battalions. Dispersion of elements may indicate the increase in the number of company aid men, using litter bearers for the purpose and requiring each company to evacuate its casualties to the aid station or an ambulance loading post (see also *d* below). If elements of the battalion be detached, the attached medical personnel are proportioned among the several elements. Aid stations are not established until the necessity therefor arises.

d. Collection.—A collecting station is not established specifically to support an outpost unless the outpost becomes engaged and its mission requires it to hold its position. In this event the outpost line becomes a line of resistance and the medical service becomes that of a defense. However, units on outpost ordinarily cover such extended fronts that some reinforcement of their attached medical personnel may be necessary. Such reinforcements are drawn from collecting units and attached to the outpost. The specific employment of these reinforcements will be determined by the outpost commander advised by his staff surgeon.

e. Evacuation.—Division ambulances may evacuate the outpost upon call. It is usually preferable, however, to attach ambulances to the outpost for this purpose. Such attached ambulances are especially useful during the withdrawal of an outpost under fire.

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f. Clearing.—The clearing station of the division serves the outpost.

g. Medical service in withdrawal of outpost.—The general procedures of medical service in retrograde movements apply. (See ch. 7.) The wide dispersion of elements, and the rapidity with which they withdraw under ordinary conditions, make collection of caualties difficult; but they also operate to reduce the number of casualties. If the withdrawal be slow and interrupted by intervals during which the advance of the enemy is resisted seriously, aid and collecting stations may be established in part and a medical service established comparable with that of defense. However, when the withdrawal is rapid, time does not permit the establishment of medical stations. Ambulances move along convenient axes, and litter bearers carry casualties laterally to the ambulances. The withdrawing combat troops should be issued litters and, when not engaged in combat, should assist in the removal of casualties to the ambulances.

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CHAPTER 4

MEDICAL SERVICE ON MARCHES

■ **78. General Conduct of Marches.**—*a. Distribution of troops.*—A command may march in one or more columns. When in the presence of the enemy, each column ordinarily includes combat teams of infantry and field artillery, with supporting units of other arms and the services, and is organized into a main body and one or more security detachments. Still other security detachments may operate under the control of the force commander.

b. Security detachments.—Security detachments of marching units consist of cavalry, reconnaissance detachments, and advance, flank, and rear guards. The use of an advance guard is habitual when in the presence of the enemy, regardless of the direction of the march, and other security detachments are employed as the situation indicates.

c. Reconnaissance units.—(1) A reconnaissance detachment has no permanent organization; it must be improvised to meet the needs of a particular situation. Generally speaking, it consists of a detachment armed with rifles and machine guns, and transported in motor vehicles. It may be reinforced with truck-drawn artillery and other troops. In general, with the possible exception of cavalry, reconnaissance detachments operate at greater distances from the main body than other security detachments.

(2) A reconnaissance troop is an organic element of the triangular infantry division. It is a mechanized unit of fixed organization whose principal subordinate elements are a troop headquarters and three platoons, each equipped with scout cars.

(3) A reconnaissance battalion is an organic element of the armored division. It is also a mechanized unit with prescribed organization.

d. Advanced guard.—An advance guard is a security detachment which precedes and covers the column on the march. It is normally composed of troops taken from the column it is protecting; and it operates under orders of the column

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commander until a condition arises for coordination by the next higher commander.

(1) The duties of an advance guard are—

(*a*) To guard against surprise and to obtain information.

(*b*) To push back small bodies of the enemy.

(*c*) To delay the enemy's advance in force long enough to permit the main body to prepare for action.

(*d*) To initiate intensive reconnaissance when the enemy is encountered on the defensive.

(*e*) To remove obstacles, to repair roads and bridges, and to facilitate in every way posible the uninterrupted march of the main body.

(2) The strength and composition of an advance guard vary with the strength of the command, the mission, the situation, and the terrain. In the infantry division, it invariably includes infantry; in the cavalry division, it invariably includes cavalry; and these basic units may be reinforced with artillery and other troops. The strength of the infantry component of an advance guard will vary between a small fraction and as much as one-third of the total infantry strength. In cavalry units the strength of the cavalry component will vary similarly.

(3) An advance guard is organized into a support and a reserve. The support precedes the reserve, and is divided into support proper and the advance party. The advance party sends out a point which precedes it on the march.

e. Flank guard.—A flank guard is any body of troops which is sent out by the commander of the main force as a special security detachment to protect his flank during the march. It may vary in strength from a small force of one arm to a well-rounded force composed of all arms. Its organization and employment depend upon the situation. Flank detachments or patrols are sent out by unit commanders for the protection of their own units.

f. Rear guard.—A rear guard protects the rear of a marching force. It relieves the main body from the necessity of engaging in combat by holding the enemy at such a distance that his weapons of longest range cannot be effectively employed against the main body. The strength, composition, and employment of a rear guard vary between wide limits, depending upon the mission, the terrain, the road net, and attitude and capabilities of the enemy.

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g. Main body.—The main body is organized in different ways, depending upon whether tactical employment, comfort of the troops, or other considerations are governing. In the presence of the enemy, it is invariably organized in a way that will facilitate its development for combat. This requires combat teams of infantry and artillery, with their normal supporting troops, to be placed near each other in the columns rather than that all infantry be grouped together, all artillery follow in another group, and other units be arranged by branch. Service elements normally are placed at the rear of a column.

■ 79. MEDICAL SERVICE OF SECURITY DETACHMENTS.—*a. General.*—The organization and operation of the medical service of a security detachment will vary widely with the strength, composition, mission, and zone of operations of the security detachment. Certain general procedures apply, but even these must be interpreted in connection with the special elements in each situation. The more important of these procedures are—

(1) In every security detachment, elements as large as a regiment should be accompanied by their medical detachments; those as large as battalions, by their medical section; and others by a proportionate, or even larger, share of the attached medical personnel of the unit from which they are taken.

(2) *Unless medical contact can be maintained between the security detachment and the main body, division medical troops must be attached to the security detachment and the responsibility for the evacuation of his command decentralized to the security detachment commander.*

(3) The strength and composition of the reinforcing medical troops are determined by—

(*a*) The strength of the security detachment.

(*b*) The mission of the security detachment, and the probable enemy reaction thereto. If serious combat is a possibility more medical service will be required.

(*c*) The zone of action of the security detachment. The greater the distance it operates from the main body, the more independent must it be of the main body. If, within a reasonable time, the main body will traverse the zone of operation of the security detachment, the medical reinforce-

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ments need not be so great. The bulk of the casualties of the security detachment may safely be left, with or without caretakers, for the main body to evacuate, reducing thereby the need of ambulances in particular.

(4) Facilities for clearing are not ordinarily attached to a security detachment smaller than a brigade. The casualties of smaller security detachments are cleared through the clearing station of the main body or, if it is more convenient, through other medical installations in the area.

b. Cavalry.—Detachments of cavalry as large as a regiment should have, and those as large as a brigade must have, a suitable proportion of a medical squadron attached.

c. Reconnaissance detachments (see *a* above).—The organization and employment of reconnaissance detachments varying so widely, none but general doctrines may safely be stated.

d. Advance guards.—The main body may be expected to follow the advance guard within a reasonable time. The march casualties of the advance guard may be disposed of through the march collecting posts (see par. 80*b*). However, in some situations, the advance guard may be expected to engage in serious combat before the main body can be developed. In this event there may be a considerable delay before the medical support of the advance guard can be undertaken by the division medical service, and some collecting personnel and ambulances should be attached to the advance guard in order to insure prompt support of its attached medical personnel. Such attachments are in addition to those made for the purpose of establishing march collecting posts, and they should revert to the control of the division medical service as soon as march conditions cease. (See also par. 80*b*(2).)

e. Flank guards.—The main body cannot be expected to traverse the zone of operations of a flank guard (see *a* above).

f. Rear guards.—Depending upon the situation, the medical service of a rear guard will be that of an attack, a defense, a withdrawal, or a delay in successive positions. (For further details consult the index for the medical service of such operations.) Since the general operation of a rear guard is a retrograde movement, time becomes an important factor, and the medical service should be augmented accordingly. (See also *a* above.)

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■ 80. MEDICAL SERVICE OF MARCHING COLUMNS.—*a. General.*—Attached medical personnel administer first aid along the route. Much of this can be done during halts. When a medical soldier falls behind performing such duty, he hastens to rejoin his unit when he has finished. Casualties are disposed of as follows:

(1) If the casualty is able to continue the march—

(*a*) Without further assistance, he is sent to rejoin his unit.

(*b*) With some assistance, he is given such assistance as relieving him of all or part of his heavy equipment and arranging for his transportation on some vehicle of the unit train. His equipment, if he continues the march on foot, may be placed on a unit vehicle, in an accompanying ambulance, or distributed among his abler comrades.

(2) If the casualty is unable to continue the march, he walks, is carried, or is transported in a vehicle, as the case may be, to the next march collecting post, and there transferred to the division medical service.

b. Collection.—(1) *March collecting post.*—A march collecting post is a station along a route of march where attached medical personnel may transfer to the division medical service such casualties as are unable to continue the march. Each is operated by one or more soldiers of a collecting unit, and is equipped with litters, blankets, dressings, and simple medicines. A supply of potable water is most desirable, although this may have to be furnished in containers. The site must be adjacent the route of march, and should provide some comfort to casualties, such as shelter or shade. If the road net permits of ambulances using routes other than those used by marching columns, march collecting posts should be located so as to facilitate the use of such routes. (See *c* below.)

(2) *Establishing march collecting posts.*—(*a*) The sites for march collecting posts are selected in advance and announced in the march order. The number of posts established depends upon the length of the march, the road net, the physical condition of the troops, and the weather. In general, they need not be closer than every mile or two, and should not be farther apart than every 4 or 5 miles. Because of their more rapid rate of march and means of transportation available to each soldier, march collecting posts ordinarily are not used with cavalry columns (see (5) below).

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(*b*) A detachment of collecting personnel, normally transported in ambulances, is attached for march control only to the advance guard. This detechment marches in rear of the reserve of the advance guard and drops off, at the site of each designated collecting post, the personnel and equipment to establish that post. When any ambulance of this detachment drops the last of its load, it remains at that particular collecting post and reverts to the control of the division medical unit. This detachment must not be confused with reinforcements for the advance guard from the division medical unit.

(3) *Operating march collecting posts.*—Although a march collecting post is a simple installation and only very simple procedures may be undertaken, the general principles of the operation of a collecting station apply. (See par. 45.)

(4) *Closing march collecting posts.*—Each march collecting post is closed when the rear of the column approaches. An ambulance unit or a sufficient detachment therefrom marches near the rear of each column to gather the personnel from the closed posts.

(5) *Other methods of march collection.*—When for any reason, the establishment of march collecting posts is impracticable, march casualties must be collected and evacuated by one of two methods.

(*a*) Casualties are dropped by the wayside by attached medical personnel, and collected and evacuated by a detachment of collecting personnel and ambulances marching at the rear of the column.

(*b*) Ambulances are attached to regiments or smaller units; and casualties are carried with such organizations until such time as they can be transferred to the division medical service.

c. Division ambulances.—(1) The task of evacuating march collecting posts is allotted to one or more ambulance units. To insure better control, the ambulances used in establishing march collecting posts should come from the unit charged with their evacuation, but it is not essential that the ambulances used in gathering the personnel from the closed stations come from the same unit. The latter duty may be given to an ambulance unit marching near the rear of the column.

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(2) The road net may force ambulances to use, for evacuation of the march collecting posts, the same routes used by marching columns, but whenever possible this should be avoided. However, when other routes are used, provision must be made for the evacuation of such casualties as may be dropped at places other than march collecting posts.

d. Clearing.—The clearing station already established (or, if none were established, one established at the previous camp or bivouac) will serve for the early stages of a march. As the distance between the marching columns and the clearing station increases, it must be displaced by echelon to a more suitable location. Ordinarily, not more than one such displacement will be required in any one day of march although, if the enemy is encountered, a new location may be indicated at once.

■ 81. MARCH DISPOSITIONS OF MEDICAL UNITS.—*a. General.*—(1) The procedures set forth in this paragraph apply only to such medical units, or elements thereof, that are *not* engaged in the medical service of the march. Nor are they intended to restrict any dispositions that may be desirable in marches conducted solely for the purpose of training.

(2) The application of one fundamental is essential: *Medical units must be so disposed in marching columns that they may enter combat without delay in the support of such units as they are expected to support.* If separated in the column from the units they are expected to support in combat, medical units will experience great difficulty in establishing contact after development has commenced, and may fail altogether in support. For this reason battalion sections must march with their respective battalions, and elements of the division medical service must be so placed in columns as to facilitate contact with the combat teams which they will support if and when the enemy is encountered.

b. Attached medical personnel.—(1) If there is more than one medical officer with a unit, the surgeon marches with the commander and the others with the bulk of the proper medical section. If there is but one, he marches with the bulk of the section.

(2) Battalion sections, less company aid men, march in the rear of their respective battalions but in advance of the battalion train. Company aid men follow their respective

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companies. The detachment headquarters marches in rear of the regiment but in advance of the train.

(3) Medical vehicles march with the trains of their respective units. The medical vehicles of attached medical personnel carry combat equipment. Battalion sections cannot function efficiently for any length of time with the individual equipment carried on the persons of the officers and men. Litters are required at once, and medical chests are required as soon as an aid station is established. For this reason the medical vehicles of each battalion section should accompany the vehicles transporting the heavy weapons and extra ammunition of that battalion, and should remain with them at all times. The medical vehicles of headquarters sections accompany the vehicles transporting the equipment of their regimental headquarters.

c. Division medical unit.—(1) The proper medical support for each major combat team should follow it, and may be attached to it for march control. Such dispositions minimize delay in establishing division medical service in the event of combat.

(2) Clearing units should march together, preferably in rear of one of the center columns. In the usual situation, this will place them near their probable location if they are required to establish station.

(3) Headquarters, or headquarters and service companies should march in the same serial with clearing units.

(4) All other considerations being equal, detachments of the division medical service used to reinforce security detachments and to provide medical service for the march should not be taken from the support of a combat team that will probably become involved in combat immediately upon contact.

■ 82. MARCH CONTROL OF MEDICAL UNITS.—*a.* Basically, when in the presence of the enemy, a division marches as two or more reinforced combat teams. Each combat team is a subordinate command under division control. If a combat team marches in two or more columns, each column is a subordinate command of that particular combat team. After forming these combat teams, there will usually remain certain elements which must be organized into a special column, or columns, under division control. Each column may operate

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directly under division control or all such columns may be placed in one subordinate command. Headquarters and service, and clearing elements of the division medical unit are usually placed in these special columns. Collecting and ambulance elements are usually placed in the combat team columns.

b. Division medical units or elements thereof engaged in the collection and evacuation of march casualties operate directly under division control, except that detachments engaged in establishing march collecting posts are placed under column commanders for march control only. (See par. 80*b*(2).) Once such collecting posts are established, they are operated under division control.

c. All elements of the division medical service not attached to security detachments or engaged in collection and evacuation of march casualties are placed under column commanders. So long as march conditions prevail, they cannot be operated by the commander of the division medical unit until they have been released by the division commander from such march control. When march conditions cease, such as in entering combat or arriving in camp or bivouac, a division order announces that fact which, unless otherwise specified in the order, releases all division medical units from march control.

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CHAPTER 5

MEDICAL SERVICE IN THE ATTACK

■ 83. GENERAL CHARACTERISTICS OF ATTACK.—An epitome of the offensive would show that the attack provides for the following measures:

a. Covering forces push in rapidly to reconnoiter the main hostile position, its flanks, and its weak localities, and to find the terrain most favorable for attack.

b. Weak localities are exploited while strong localities are masked and isolated.

c. (1) *Attack units,* under cover of supporting fire and smoke, and taking advantage of favorable features of the terrain, press forward, disregarding what happens on other parts of the battle front. These attack units do not attempt to maintain alinement with like units on their flanks. Each attempts, by taking advantage of the terrain, to outflank the defending areas.

(2) *Local reserves* are disposed in depth to reinforce the leading units and to prevent their being cut off and isolated.

d. The attack is made with all available strength. The mass of the means is disposed in depth behind the front chosen for the main attack. Fire and smoke are employed to neutralize the enemy's defended localities.

e. General reserves are held available to exploit the successes, to hold the ground gained, and to carry on the action against countermeasures of the enemy.

■ 84. TYPES OF ATTACK.—Attacks are classified with respect to purpose, depth of advance planned, degree of coordination, scheme of maneuver, and amount of preparation by the defender.

a. Purpose.—In the execution of an attack the hostile front is engaged to hold the enemy troops in position; this operation constitutes the holding attack. A strong attack is then organized and directed against a selected objective believed to be vital to the defender. It is provided with such means and is directed and conducted to insure the maximum

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chance of success. The latter is the main attack. Thus all offensive combat develops into main and holding attacks.

b. Depth of advance.—With respect to restrictions placed upon the depth of advance in any attack, such attack is limited or unlimited. The holding attack is usually a limited attack. The main attack may be limited or unlimited, depending upon the mission.

c. Coordination.—An attack begun in accordance with a prepared plan which prescribes a definite mission for each element of the force is called a coordinated attack. When conditions preclude complete development and units are employed successively as they become available and without waiting to prepare a coordinated attack, the action becomes a piecemeal attack.

d. Scheme of maneuver.—(1) *Penetration.*—A penetration is a frontal attack which contemplates piercing the enemy defense in sufficient width and depth to rupture completely the hostile position. The initial break-through is followed by an attack to envelop one or both of the flanks thus created.

(2) *Envelopment.*—(*a*) An envelopment consists of attacking both the hostile front and one or both flanks. If both flanks are enveloped the operation is called a double envelopment. The attack against the hostile front seeks to fix the enemy. The enveloping attack overpowers the opponent by striking him in flank. Enveloping attacks seek to avoid the organized battle position of the defender and to strike, with the main effort, at a place or places where he is least prepared, either by organization of the ground or the disposition of his forces, or both, to resist the attack. An envelopment may be directed at any part of the flank of the hostile position. It may be designed to strike an immediate flank, not far from the front of the holding attack. In such a case considerable coordination between the main and holding attacks is required, including the prescription of a boundary between the zones of the two attacks. It may be designed to strike deep in the enemy rear and at such a distance from the holding attack that no boundary between the two is necessary. Or, it may be directed at any point between these two extremes.

(*b*) Envelopments are sometimes classified as wide or close-in. Although the use of these terms implies a distinction based upon the distance between the main and holding

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attacks, or upon the angle between their respective directions, it must be understood that neither distance nor direction is the determining factor in the essential differences between enveloping attacks. The important point is the amount and kind of coordination that is necessary.

(*c*) Close control, coordination, and supervision of both the holding and enveloping attacks by the commander of the whole force; detailed orders; designation of a boundary between attacking forces; and centralized control of supporting troops, including medical, are characteristic of the close-in envelopment.

(*d*) In wide envelopments, the use of mission orders, less centralized control and coordination, omission of a boundary between forces, and attachment of supporting troops to one or the other of the forces is usual.

e. Preparation by defender.—(1) *Surprise attack.*—A surprise attack consists of an ambuscade, aerial attack, or other sudden onset made against a hostile force caught unawares.

(2) *Meeting engagement.*—A meeting engagement results from the contact of two hostile forces neither of which is fully developed for combat. Either or both forces may attack or defend.

(3) *Attack against enemy deployed for defense.*—An enemy deployed for defense occupies a position but has not had sufficient time to organize it.

(4) *Attack against organized position.*—An organized position comprises an organized battle position protected by outposts. The elements of fire, as well as observation and obstacles, are arranged to complement and supplement each other to a high degree. The effectiveness of all of these elements is further increased by artificial means such as construction of defensive works and demolition of routes of approach.

(5) *Attack against defensive zone.*—A force in a determined defensive attitude is disposed in a defensive zone composed of successive positions arranged in depth and frequently connected by switch positions. The degree of organization is much greater than in the case of an organized position.

■ 85. CHARACTERISTICS OF ATTACK INFLUENCING MEDICAL SERVICE.—*a. Type of attack.*—The type of attack (see par. 84) influences—

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(1) The number of casualties, and their distribution in time and space.

(2) The allocation of medical means.

(3) The location of medical installations.

(4) The movement of medical units.

b. Surprise.—Surprise is a most important factor in the success of an attack. Preparations must be as nearly secret as possible. This requirement frequently will prevent the development of medical troops and the establishment of the larger medical installations until just prior to, or even after, the start of the attack.

c. Planning.—The attacker has the initiative and, so long as he holds it, directs the course of the action. Except in uncoordinated attacks, action is planned in advance. Comparable advance planning of the medical service is essential, and, to effect this, all essential information must be available to the responsible medical officers.

d. Exploitation of success.—Except in limited attacks, when the enemy is expelled from his position the success gained is exploited in order to prevent his organization of a new defense on a rearward position; to force him to retreat; and finally, by energetic pursuit, to turn the retreat into a rout and destroy him. This characteristic of the attack requires medical planning, and provision of medical means for the pursuit. (See sec. III, ch. 8.)

■ 86. MEDICAL DOCTRINES OF ATTACK.—*a.* Attack from the medical standpoint consists of the forward movement of casualty density areas into the hostile position; medical installations advance in support.

b. Mobility is the salient requirement of medical service in attack.

c. The ability of medical installations to move depends on their timely evacuation by supporting medical troops.

d. Unit commanders are responsible for the collection of their casualties at unit aid stations.

e. Collecting elements evacuate aid stations, not terrain.

f. The vital link in the chain of evacuation lies between the aid station and the collecting station.

g. Collecting stations are located to support the casualty density areas of the attack.

h. Collecting stations may be split laterally when the com-

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bat units are expected to make so limited an advance that they can be supported from initial locations.

i. Casualties from combat units attacking over a wide front will be slow coming into aid stations and collecting stations because—

(1) The length of litter haul is great.

(2) The hostile fire that prevents the advance of combat elements retards the collection of casualties.

■ 87. ATTACHED MEDICAL PERSONNEL IN ATTACK.—*a. With infantry units.*—(1) *General.*—Movement is one of the two principal means of infantry action—the other being fire—and, in the attack especially, infantry exploits to the maximum degree possible in each situation its power of maneuver. Movement of combat elements increases the difficulty of medical service, both in maintaining contact and in removing casualties from the field. Since the effectiveness of its support ceases when it loses contact, each medical element of an infantry unit must subordinate other considerations to that of maintaining contact with its unit.

(2) *Battalion medical sections.*—The battalion being the basic combat unit of infantry, battalion medical sections are attached to their respective battalions.

(3) *Deployment.*—(*a*) *Development.*—Before reaching the zone of hostile artillery fire, march columns are broken up into smaller columns which march to designated assembly positions. Depending upon the situation, a battalion may remain in one march column, although moving cross country, until it reaches the assembly position; or it may break up into company or even smaller columns before reaching the assembly position. During development, the battalion medical section, less company aid men, marches at the rear of the battalion. As the battalion breaks up into smaller columns, litter squads are deployed to cover the entire battalion front.

(*b*) *Assembly area.*—An assembly area is an area prescribed by a higher commander for the assembly of a unit for final preparations for the attack. Unit commanders regain control of scattered elements and organize their commands for combat. Packs are dropped, extra ammunition issued, reconnaissances and plans completed, and orders issued. Here the battalion surgeon receives the battalion

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order, completes his plans and issues his own orders, and causes extra dressings to be issued to company aid men and litter bearers. Whenever possible, medical vehicles should be brought as far forward as the assembly area. Under favorable conditions they may be taken even nearer the line of departure. In any event they should accompany the other vehicles of the battalion train.

(c) *Approach march.*—From assembly positions, troops advance in the approach march. Units march in smaller columns at increased intervals and distances, and make full use of cover and defilade while moving toward the line of departure. Litter squads are deployed to cover the widening battalion front, and the remainder of the section, less company aid men, marches along the axis of the advance in extended order. The battalion surgeon remains with the battalion commander as long as possible in order to keep himself informed of developments in the situation.

(4) *Line of departure.*—A line of departure is designated by a higher commander for the purposes of coordination of the attack. Units move forward to the attack from the line of departure at a designated time. Initially, this movement may be a resumption of the approach march, but when the effectiveness of hostile fire makes it necessary for the infantry to return the enemy's fire in order to continue the advance without excessive losses, the advance by fire and movement is begun. This is termed *advancing the attack,* and it is at this point that the character of the medical service changes from that of the approach march to one of combat.

(5) *Company aid men.*—Company aid men are reported to their respective companies prior to development, and remain with them throughout (see par. 33).

(6) *Litter squads.*—Unless contraindicated by other considerations, litter squads are deployed initially across the battalion front on the basis of the strength of the assault echelon, the number of units therein, and the task allotted each unit. The initial distribution of litter squads is modified as the situation changes. If elements of the battalion are held in reserve, whenever possible, a proportionate reserve of litter squads should be held to support them when they are committed. Litter squads follow the assault echelon as closely as is consistent with reasonable safety, taking

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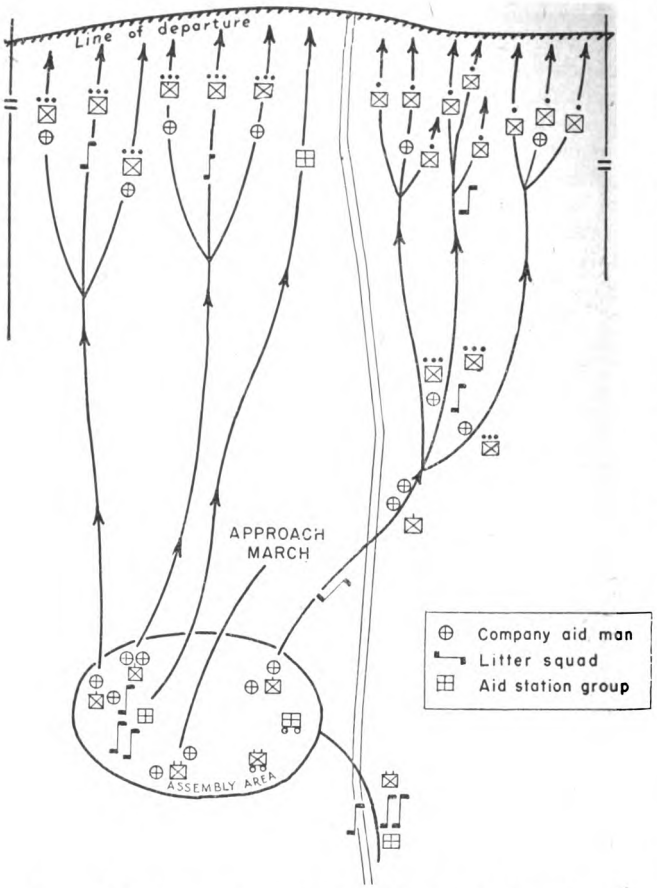


FIGURE 13.—Approach march of attached medical personnel (schematic).

full advantage of all available cover and defilade. For further details of their employment see paragraph 47.

(7) *Aid station.*—(*a*) The aid station is not established, or is only partially established, until the need therefor can be foreseen, or when there is slow progress or no progress at all. In the early stages of an attack there may not be

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a single aid station fully established in the regiment. However, each unit surgeon observes the terrain as he advances, making tentative selections of sites against the time when he must establish his aid station. When established, only such part of the aid station is set up as appears to be required, and it must be moved forward, by echelon if necessary, as soon as the advance of the combat elements leaves it out of supporting position.

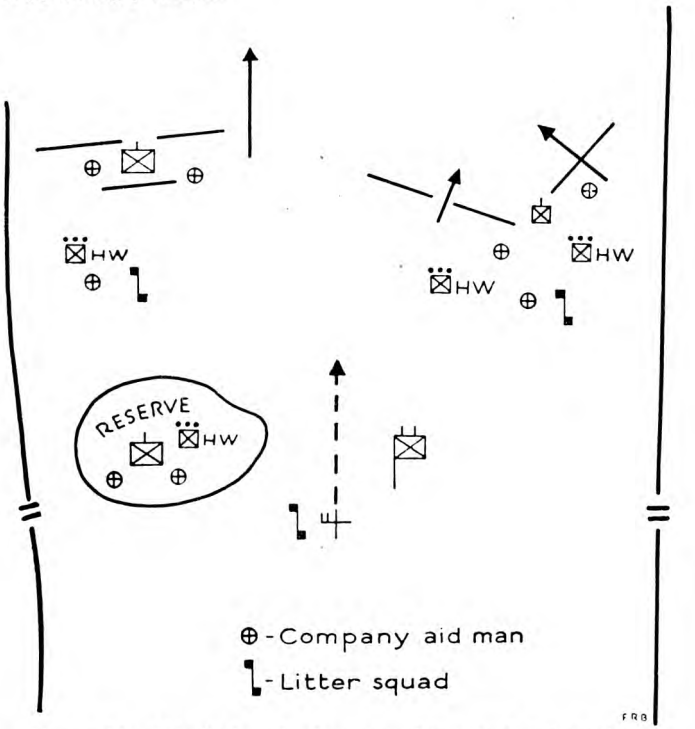


FIGURE 14.—Attached medical personnel in attack (schematic).

(*b*) During such periods as there is no aid station established, litter squads carry litter wounded, and direct walking wounded to the designated axis of advance of the aid station group, where they are treated, made comfortable, and left in a protected location for the supporting medical echelon to

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evacuate. For further details of the operation of the aid station see paragraph 31.

(8) *Reserve battalions.*—Ordinarily all battalion medical sections are attached to their respective battalions, including those initially in reserve, prior to the attack. The confusion of battle, and the movements of forward elements in the attack made it almost impossible to withdraw from elements already engaged any medical personnel to accompany reserve battalions into action. For this reason, unless urgently necessary, no medical personnel should be taken from reserve battalions to reinforce battalions already committed; and, if the formal attachment has already been made, such employment is subject to the decision of the regimental commander. For the operation of the regimental aid station to serve elements in reserve see paragraph 31.

b. With artillery units.—(1) *General.*—The tactical mobility is greater than that of infantry, but artillery does not combine movement with fire. Movement ceases when it becomes actually engaged, and the operations of its attached medical personnel do not vary with the type of the attack. During changes of position during combat, the medical service is that of the march (see ch. 4). Artillery is usually placed well forward initially in the attack, and is echeloned less in depth than in the defense. In successful attacks it is advanced by echelon to insure close support of the infantry.

(2) *Battalion medical sections.*—Battalion medical sections are attached to their respective battalions, and battery aid men are with their respective batteries.

(3) *Battalion surgeon.*—The battalion surgeon must keep abreast the situation in order to close his aid station in time to accompany the battalion in a change of position.

(4) *Aid station.*—Aid stations are established, at least partially, whenever the battalion occupies a position.

(5) *Reserve battalions.*—The fire power of artillery being so important to the advance of the infantry, and the great tactical mobility of artillery permitting it to be withdrawn from action in one position and recommitted elsewhere with minimum delay, artillery is not ordinarily held in reserve, although it may reserve its fire while occupying a position.

c. With armored units.—(1) Except in the case of the infantry components fighting on foot, the attached medical personnel of which function like those of other infantry

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units, the fighting unit is a mechanized vehicle. For considerations of protection and security, such vehicles rarely remain at rest but are in constant motion until disabled. Attacks are rapidly organized and pushed through at high speed. With only relatively brief pauses for reorganization, units either push forward to exploit success or withdraw. The unit medical service must render first aid and start the evacuation of casualties—

(*a*) In the case of disabled vehicles, as soon as the vehicle can be reached by the attached medical personnel.

(*b*) In the case of casualties occurring in vehicles continuing in action—

1. The casualty may be dropped from the vehicle and picked up from the ground by attached medical personnel as soon as they can reach him; or
2. The casualty may continue in the vehicle until the attack is suspended for the purpose of reorganization, and, during this pause, be removed from vehicle by attached medical personnel.

(2) Battalion sections are attached to their respective battalions.

(3) Ambulances are organic equipment of the attached medical personnel and are employed in primary collection from the field whenever practicable.

(4) No company aid men are allotted to the fighting vehicles. The combat personnel are especially well trained in first aid.

■ 88. DIVISION MEDICAL SERVICE IN THE ATTACK.—*a. General.*—The difficulties encountered by the division medical service in the attack are associated with—

(1) The heavier casualty rate. In general, the attacker may be expected to suffer heavier casualties than the defender until the defense is disrupted and disorganized.

(2) Maintenance of contact with the medical detachments of attacking units. Attacking units make no attempt to maintain alinement with like units on their flanks. Each attempts, by taking advantage of the terrain, to outflank defended areas. Thus, there frequently is no regular battle line upon which the division medical service may adjust its dispositions. Contact with aid stations becomes an individual problem with each aid station. Some aid stations may be-

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come so far advanced that their evacuation is most difficult. while the holding up of units on their flanks may prevent the advance of collecting stations.

(3) Maneuver. The main attack is usually launched at a flank of the defender in order to avoid, if possible, the better organized portions of his position. This maneuver increases the area occupied by the attacker and, if it be wide, may require the duplication of medical installations.

b. Attack in meeting engagement.—In a meeting engagement the time available for medical planning is considerably reduced, and there is rarely time for detailed reconnaissances prior to the issuing of orders. Orders, both those received and those issued, are apt to be in fragmentary form. Insofar as the medical command is concerned, boundaries between units may be in doubt, the locations and formations of attacking units uncertain, and friendly artillery positions and other important locations unknown. Communications are slow and uncertain. So far as possible, these difficulties are obviated by assigning missions to the subordinate elements of the division medical unit, and leaving to those subordinate commanders the decisions concerning the details. An effective reserve of medical means must be retained until the situation is clarified, when adjustments of the medical service may be made. Most important to its employment in a meeting engagement are the dispositions of the division medical unit on the march (see par. 81).

c. Planned attacks.—When there is time available to plan the medical service for the attack—

(1) Adequate reconnaissance are made, detailed plans drawn, and complete orders issued.

(2) Subordinate elements are moved to their initial battle positions prior to the launching of the attack.

(3) Personnel are afforded every opportunity to rest.

(4) Supplies are replenished.

(5) Contact with medical detachments is established early.

■ 89. COLLECTION IN THE ATTACK.—*a. General.*—The general nature of the operation of collection does not differ in the attack from other forms of combat. (See sec. III, ch. 2.)

b. Liaison.—Whenever possible and practicable, liaison agents should be reported to medical detachments prior to the launching of the attack. In meeting engagements this

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will usually be impossible, and liaison agents must be sent forward to locate aid stations that are already established. (See also par. 88*a*(2).)

c. Litter bearers.—Initially, aid stations may not be established, and casualties may have to be evacuated from the axes of advance of the combat elements. If movement is rapid, the bearers of the battalion sections may not have cleared the field thoroughly, and the bearer squads of the collecting unit may have to search the field. As the attack succeeds, and resistance becomes weaker, ambulances may be pushed well forward to lessen the burden upon litter bearers.

d. Collecting station.—(1) Only so much of a collecting station should be established as is required or for which immediate need can be foreseen. When established, it should be well forward in order to forestall the necessity for early movement as the combat troops advance. Until it is established, the collecting station section advances along a designated axis so that it maintains contact both with its own litter bearers and with the supporting ambulance unit. When the combat elements, supported by the collecting unit, are operating on a wide front, it may become necessary either to operate two collecting stations or to establish a collecting post, or posts, toward one or both flanks.

(2) When movement of a collecting station is necessary, it is ordinarily moved by echelon. A fraction—usually about one-half—is closed, loaded, moved to the new location and reestablished. As soon as it is operating and information of the new location has reached all dependent agencies, the old station may be closed and this remaining fraction moved to the new location, provided all the casualties of the latter have been evacuated.

■ 90. DIVISION AMBULANCES IN THE ATTACK.—Ambulance service in the attack is normal. Advanced ambulance shuttles are indicated when movement is rapid and when enemy resistance weakens to the point of permitting their use with comparative safety. Ambulances may also be used in the movement of collecting stations.

■ 91. CLEARING IN THE ATTACK.—*a.* The clearing station should be established well forward—4 or 5 miles from the line of departure, when feasible.

b. In meeting engagements, and when enemy covering forces

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must be pushed in and the position developed before the attack can be fully planned, it will be necessary to establish a clearing station, initially, behind the forces so engaged. When the plan for the attack is developed, it may be found that the initial location of the clearing station is not suitable. In such an event the station must be moved, by echelon, to a suitable location.

c. In other situations, the main attack may be launched at such a distance from the holding attack that no single location for a clearing station is satisfactory to all elements of the division. The station must be split, in such situations, and two clearing stations operated.

■ 92. MEDICAL EFFORT IN SPECIAL TYPES OF ATTACK.—*a. Main and holding attack.*—(1) In the formulation of the medical plan, an analysis of the division tactical plan is first made to determine the location of power areas, the casualties to be expected in them, and the allotment of medical support to them. The major casualty area of the division will be in the zone of the main attack. The combat strength, in men, of units assigned to each attack measures its relative importance to the commander and the probability of its advance, and allows the surgeon to allot his medical means, particularly collecting units, in rough proportion to the allotment of combat elements, and to the casualties that may occur. The main attack which should make the greatest advance should therefore receive greatest support.

(2) The major casualty areas will be in the zones of the principal effort; the lesser areas in the zones of the secondary attacks. The strength, frontage, and probability of advance of the combat units in each effort again measure their relative combat importance and their requirements of medical support. The division surgeon must, therefore, have knowledge of each combat team's plan of operation in order to determine its areas of casualty concentration to help him locate the collecting stations within it.

(3) The principal effort of the secondary attack usually represents the major casualty density area in the zone of action. The reserve will usually be used in the furtherance of this effort. This effort has power; it usually attacks on a narrow frontage in a compartment of terrain. This canalization of power will be met by enemy fire; unit aid stations

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will be unable to advance in support of other units unless relieved of their casualties by the collecting elements.

(4) When the secondary attack is analyzed it may be deduced that battalions attacking over a broad front against the enemy's prepared position will incur few casualties because of the dispersion of troops; that the casualties will be slow in getting to the aid stations because of long distances of litter-haul, and because the same fire that checks the advance of troops inhibits casualty collections; that the aid stations will advance little or not at all because the dispersion of combat power over a wide front will probably prevent any great advance of the battalions they support; that this latter deduction must be correct since this attack is the secondary effort.

(5) The collecting station for the secondary attack is located in close support of the principal effort. Should the collecting company be split laterally, with part placed behind the secondary effort and part behind the principal effort, it is practically impossible for either of the parts to advance. Since the secondary attack moves forward along the axis of its principal effort which is the potential area of greatest concentration of casualties, the collecting station must be prepared to advance in echelon in support of the attack. This it can hardly do if it is split. Such location of the collecting company does not mean that the secondary effort goes unsupported. The collecting company discharges its responsibility in this case by sending litter squads to move cases from the aid stations back to ambulance loading posts, from which the casualties are transported to the clearing station. The exact location of the collection station in the area of principal effort will then be determined by the technical characteristics of desirable sites for collecting stations given in paragraph 44.

(6) The collecting station for the main attack is located after an analysis of the plan of attack and an analogous process of deduction. The formation for the attack of the combat teams, the line of departure, the character of enemy resistance, the size of reserves, and the probable area of its employment must be considered in locating the collecting station. If the outer regiment or combat team is echeloned to the rear, the collecting station will be located initially in the support of the inner regiment or combat team. If regi-

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ments or combat teams attack abreast and the principal effort is made by the outer regiment or combat team, the collecting station will move toward that area. Reserve collecting elements will usually be committed to support the moving flank.

(7) Clearing stations are located under the considerations indicated in paragraph 64.

b. In close envelopments.—(1) *General.*—Medical service in close envelopments conforms to the considerations just discussed. The special characteristics of medical service are considered below.

(2) *Character of medical operation.*—The medical service is disposed to give preferential support to the principal effort and to displace its installations, when necessary, toward or along the axis of advance of combat elements. Casualties will be heavy in those units of the principal effort near the hostile organized positions and slow coming in until the attack gets home.

(*a*) *Collecting elements.*—Locations and operations are normal. (See par. 44.) Reserve collecting elements will usually be employed during the conduct of the attack to support the widening front of the envelopment or to relieve the elements initially active. Each collecting station advances in echelon, as required, to maintain collection.

(*b*) *Ambulance elements.*—Allotment and operations are normal. Reserve ambulances will be utilized in the later stages of the attack to evacuate the extending flank of the envelopment or to participate in a pursuit.

(*c*) *Clearing station.*—The clearing station will be established with one station initially active. Clearing stations will "leapfrog" forward in support of the principal effort and in its zone.

c. Penertation.—(v) *General.*—Medical service in this form of attack conforms in general to what has been given.

(2) *Character of medical operation.*—The prepared fires along the front of the enemy position will fall heavier on the troops massed for the penetration. Hostile counter attacks in the later stages of the attack may be severe. The attack will probably progress slowly, initially, with heavy casualties and rapidly when the position has been ruptured. Collection will be slow, initially, but more rapid as the attack progresses favorably. If the attack fails, many casualties will be captured and collection limited until after dark. Ambulance

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evacuation will be slow and difficult because of damage to the roads in our own and enemy areas.

(*a*) *Collecting elements.*—Normal location and operations obtain. Reserve elements will be employed in support of the main attack to pass through the elements in operation, or to reinforce them during the conduct of the attack.

(*b*) *Ambulance elements.*—Normal allotment and operations obtain.

(*c*) *Clearing elements.*—Location and operations are normal. The forward displacements of the clearing station may be difficult if there is extensive road damage and may require establishment in an intermediate location until a motor road has been provided.

d. In wide envelopment.—(1) *General.*—The medical service of this form of attack departs from the normal in certain important respects because of the special tactical characteristics of the operation.

(2) *Character of medical operations.*—The medical service subdivides for combat by moving the bulk of its means to the rear of the wide envelopment to support the main attack while the remainder stays with the secondary attack. Since the line of departure, the formation of the attack, and the boundaries between units in the main attack are not known until the commander making the principal effort has formulated his plan of attack, initial positions for medical units are chosen in rear of the infantry assembly areas. The stations may be partially established to care for casualties resulting from the march; from artillery fire in the assembly area; and during the approach march. When the principal effort begins, these installations advance to battle positions. Casualities in the secondary attack will be slow coming in because of the wide unit frontages and disposition of personnel. In the principal effort they may be light if the enemy is surprised and the advance is rapid, or heavy if the advance is slow against substantial resistance. A reserve of collecting and ambulance elements is kept on hand or assembled to support a pursuit in case of hostile withdrawal. The control of widely separated elements of the medical service will be a serious problem to the respective medical commanders.

(*a*) *Collecting elements.*—Normal distribution and operations obtain. The collecting station for the principal effort may not be set up completely when the attack begins unless

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the infantry elements move out in assault formations; otherwise, it will remain prepared to move to close support when contact with the enemy in strength is made. The reserve elements will be used to support the widening front of the envelopment during the attack.

(*b*) *Ambulance elements.*—Normal allotment and operations obtain.

(*c*) *Clearing elements.*—Clearing elements, less a small reserve in support of the secondary attack, will move to the rear of the wide envelopment and set up a clearing station with one station initially active. This station will not displace until it becomes easier to move the station to the patient than to move the patient to the station. The surgical hospital will usually be moved to the location of the clearing station with the principal effort.

■ 93. COLLECTION AND CLEARING IN ARMORED DIVISIONS (see also par. 71).—*a. Medical operations.*—Except such collections as are made in support of infantry elements fighting on foot, collections in armored divisions must necessarily be largely from the field. Mechanized units move too rapidly to permit the assembly of casualties first in aid stations and then in collecting stations before delivering them to clearing stations. Dependent upon the situation, collection may be accomplished either by deploying the ambulances of the collecting unit across the front and having them follow the assaulting tanks at a distance consistent with reasonable safety, or by reinforcing unit medical detachments with ambulances of the collecting companies and decentralizing collection and primary evacuation to such reinforced units.

b. Clearing in armored divisions.—In armored divisions the method of clearing will vary widely with the situation. In limited objective attacks the clearing station will be established on the ground and remain fixed throughout the action. In unlimited attacks, and especially in exploitation of success in enemy rear areas, considerations of security make it necessary that the clearing station remain sufficiently mobile to keep within the area occupied by the division at any time. This will preclude any elaborate arrangement on the ground; and such casualties as cannot be evacuated must be moved with the station or else abandoned.

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CHAPTER 6

MEDICAL SERVICE IN DEFENSE

■ **94. General Characteristics of Defense.**—*a.* The characteristics of defense vary so much with the type of defense, the terrain, and the situation that extensive generalizations are unsafe. However, it may be said that defense consists essentially in repulsing the attack of an enemy by impeding his progress in every way open to the defender, such as by the use of natural and artificial obstacles, and by bringing to bear upon him the destructive action of the weapons of the defender when the enemy comes within their ranges.

b. Artillery and other supporting arms play a most important role in defense, but, as in most forms of combat, the decisive role ultimately falls to the individual soldier armed with the rifle. Infantry defends its position by employing all the weapons at its disposal; it does not rely solely upon artillery fire for the repulse of the hostile attack. As the enemy comes within range, the heavy infantry weapons, including those of units in reserve, are brought into action. As the enemy draws closer, the light weapons of the infantry engage in the fire until finally the enemy is stopped or is driven back with the bayonet.

c. If the enemy succeeds in penetrating the defense, he is expelled by one or more counterattacks. If the rupture of the position be slight, local reserves are employed in the counterattack. If these fail, or if the rupture were so great as to make their use impracticable, the counterattack is made by general reserves. These are limited attacks and are not to be confused with counteroffensive operations. (See par. 104.)

■ **95. Types of Defense.**—*a.* A defense which contemplates the holding of a specified area, position, or front against hostile attacks with no planned intention of employing a counteroffensive to gain a decision in the immediate future is termed a *passive defense.*

b. A defense which at the time it is assumed contemplates a decisive counteroffensive at the earliest favorable oppor-

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tunity is termed a *defensive-offensive*. It differs from a passive defense only in the intention of the commander. The commander's mission may demand offensive action but circumstances, such as not being favorably developed for attack or awaiting the arrival of additional means, requires him to postpone his offensive until his situation improves.

c. Special types of defense, such as delaying actions and defense of river lines, are treated in subsequent chapters.

■ 96. DEFENSIVE POSITIONS.—For the degrees of organization of a defensive position see paragraph 84*e*. A complete defensive position includes a battle position and an outpost.

a. Battle position.—A well-organized battle position comprises an organized belt of terrain bounded on the front by the main line of resistance and on the rear by the regimental reserve line. The organization embraces a series of mutually supporting defensive areas, with trenches, obstacles, and emplacements for individual weapons. The defensive areas are distributed irregularly and in depth throughout the organized belt, which normally has a depth between 800 and 1,800 yards.

(1) *Main line of resistance.*—The main line of resistance is that organized and occupied defensive line upon which the first determined effort is made by light weapons to stop the enemy. It is not a continuous line of defensive works, nor is every part of it occupied by soldiers. On the other hand, it is a series of distinct, but mutually supporting, centers of resistance. Nor are these centers of resistance located on a regular line. While the main line of resistance follows a general direction, each center of resistance is so located that it takes full advantage of the local terrain, not only in the defense of that particular sector, but also, with its own fire, to support the centers of resistance to either flank and to deny to the enemy the intervening unoccupied ground. This results in minor irregularities in the main line of resistance, the degree of which depends upon the terrain. Each center of resistance is defended by one battalion or a comparable unit.

(2) *Regimental reserve line.*—The line of the battle position, determined by the combat locations of the regimental reserves, is termed the regimental reserve line. This is the last organized line in front of the artillery, and it must be

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held until the higher commander can act. Elements on the regimental reserve line may be held mobile in readiness to counterattack or to occupy one of several positions previously selected and organized, or they may be posted initially for the defense of selected points. The organization and defense of the regimental reserve line follows the same general principles that apply to the main line of resistance.

b. Outpost.—The outpost position of a large force, such as an army, is usually organized; that of smaller forces are rarely so. For a general discussion of outposts see paragraph 77.

c. Frontages.—The frontages assigned to units in the defense vary with the terrain and the time and means available to the enemy. Against a very strong attack, an infantry battalion on average terrain can hold not to exceed 1,500 yards. In situations which do not permit of powerful artillery and tank support of the attacker, a battalion may defend a front between 2,000 and 2,500 yards; and upon fronts which are not active or are on particularly strong terrain, this frontage may be increased to about 3,500 yards. On average terrain, and under favorable conditions, a square division may defend, against a strong attack, a front of not to exceed about 16,000 yards. The triangular division may defend a proportionately shorter front.

■ 97. CHARACTERISTICS OF DEFENSE INFLUENCING MEDICAL SERVICE.—It is not to be expected that all of the following characteristics of denfense will apply to every defense situation. However, the more important, which may be encountered and which will influence the medical service, are:

a. (1) The fortification of a position is limited only by the time and facilities available. Protection, however, is to be sought more in the distribution of defenses in depth and in width, their adaptation to the terrain, and concealment from hostile observation than in the strength of construction.

(2) Medical installations in forward areas should be protected by a degree of organization of the ground comparable to that effected by combat troops. In the more elaborate field fortifications, gasproof dugouts should be constructed for aid stations; and collecting stations, although usually located above the ground or in cellars should be similarly protected. From this upper limit of protective construction, the

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amount of organization will vary downward to fox holes for company aid men and litter bearers, and improvement of the aid station site with logs, stones, or other materials at hand.

(3) When the plan of a field fortification contemplates such sharp turns in trenches or other features that will make the removal of patients by litter impossible, it is the duty of the unit surgeon to bring the matter to the attention of the unit commander.

b. The width of the sectors assigned to infantry units varies with the defensive strength of the various parts of the position, the relative importance of the sectors, the degree of control required, and the number and strength of units available for the entire defense. In the allotment of medical means this distribution of units in the defense must be considered, both as concerns attached medical personnel and the division medical service.

c. The occupation of a defensive position is preceded by a more or less detailed reconnaissance as permitted by the situation. In general, medical planning can be more thorough and more detailed in defense than in attack.

d. If contact with the enemy has not been made, the command is usually developed into an assembly position preliminary to the deployment for the defense.

e. The defense, no less than the offense, must, whenever possible, act with the effect of surprise. This affects the location and degree of concealment of medical installations, and the movement of medical units.

f. (1) Whenever practicable, the defense is conducted along mobile lines. Mobility is acquired, among other ways, by distribution of forces in depth and by holding out reserves. Operative considerations may, however, require a rigid defense of certain critical sectors.

(2) The distribution of forces in depth, as well as the possibility of enemy penetrations of the position without actually disrupting it, requires that medical installations be located, in general, farther toward the rear than in the attack. If certain sectors are to be defended rigidly, the medical service of those sectors may be planned accordingly.

g. The counterattack is the decisive element of defensive action. It is seldom feasible to hold a defensive position merely by passive resistance. All medical elements must be prepared to support a counterattack upon short notice.

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Counterattacks may be launched without delay to forestall the enemy's consolidation of his gains. Within the battle position, counterattacks are made ordinarily with local reserves, but, when the regimental reserve line has been seriously disrupted, general reserves are employed.

h. The occupation of the defensive position by large units is, wherever practicable, covered by outposts located at sufficient distance from the main line of resistance to prevent the occupying forces from being taken under observed fire by hostile light artillery. The situation determines whether the outposts retain their position after the occupation of the main line of resistance has been completed, and whether the outposts shall make a determined resistance to the advance of the enemy. The medical service of outposts is an important item in the medical service of the defense, particularly when outposts are expected to resist.

i. When the situation permits, mobile covering detachments operate well in front and toward exposed flanks of the defensive position. Medical service must be provided for such security detachments.

j. Persistent gas has especial defensive value. This will affect casualties among enemy prisoners of war, and may involve units in counterattacks.

■ 98. MEDICAL DOCTRINES IN DEFENSE.—Medical doctrines in defense may be summarized as follows:

a. A reserve of collecting elements is held out initially to support the commitment of the division reserve; and in rough proportion to it.

b. Collecting elements may be split laterally in position defense because the collecting stations will not generally be required to displace.

c. The division clearing station is established and kept mobile by frequent evacuation by a higher echelon so it may be moved away from a flank seriously threatened by the enemy.

d. Medical dispositions in defense are based on the assumption that the position will be held. The dispositions to be made in case of an unsuccessful defense and a consequent withdrawal have to do with another type of operation. (See ch. 7.)

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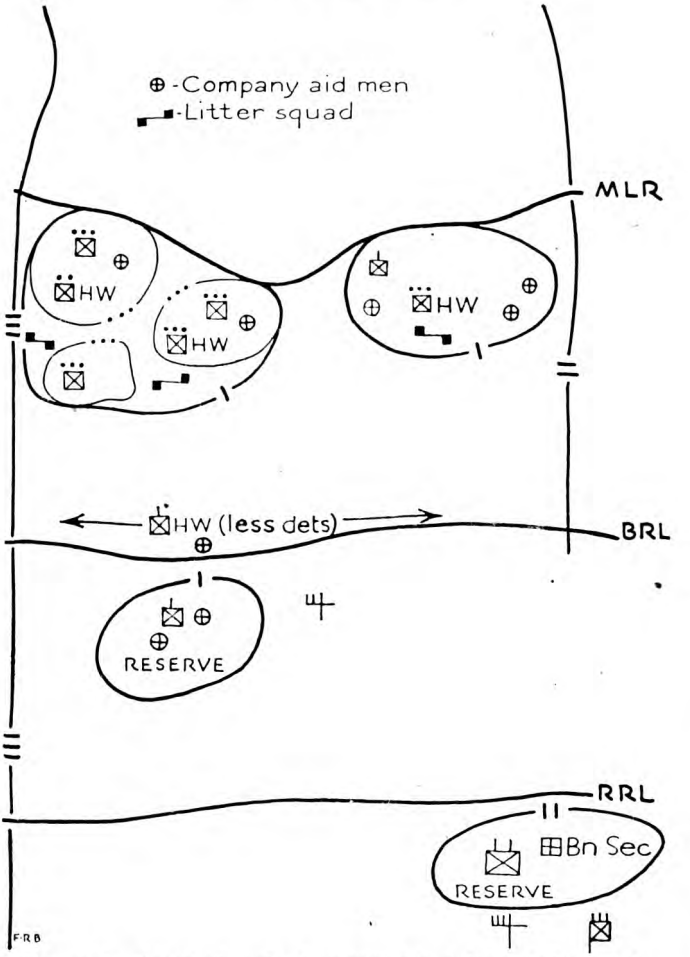


FIGURE 15.—Attached medical personnel in defense (schematic).

e, The evacuation lag may reach considerable proportions in operations of this type.

f. Evacuation of the veterinary collecting station and the clearing station by a higher echelon is as essential in defense action as in other more mobile operations.

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■ 99. ATTACHED MEDICAL PERSONNEL IN DEFENSE.—*a. With infantry unit.*—(1) *General.*—Except when counterattacking, infantry in the defense is relatively fixed in position. Both local and general reserves may be moved from time to time, but the units engaged in the fire fight indulge in little movement. This permits of a greater degree of initial organization of the medical service than in the attack. Casualties will occur in well-defined areas the locations of which are known in advance.

(2) *Battalion medical section.*—The battle position consisting essentially of a series of centers of resistance, each being occupied and defended by a battalion in the usual situation, battalion medical sections are attached to their respective battalions.

(*a*) *Company aid men.*—The allotment of company aid men depends upon the situation. The organization of a center of resistance varies with the terrain and other factors. It consists of one or more (usually two and sometimes three) strong points, each occupied normally by a rifle company. The strong points are further divided into combat groups of rifle platoons or small elements. The routine allotment of two company aid men to each company in defense cannot be justified. The organization of any particular strong point may be such that more than two company aid men, rarely less, will be required. On the other hand, the heavy weapons company may be so distributed throughout the center of resistance that it cannot effectively employ company aid men, but can be provided such medical service by the aid men of the rifle elements in the same localities. Each center of resistance must be reconnoitered and studied by the responsible surgeon with a view to distributing his medical means to the best advantage.

(*b*) *Litter squads.*—The same considerations affecting the allotment of company aid men, also determine the distribution of litter squads (see (*a*) above). The probable areas of casualty density, the garrisons of the several strong points, the distances from the aid station, the characters of the litter routes, and the requirements of the reserve must all be considered. Litter squads take their assigned posts and organize them for their own protection during periods of inactivity. They also increase the protection of their litter routes as much as time and facilities will permit.

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(c) *Aid stations.*—To avoid being involved in minor penetrations of the center of resistance, the battalion aid station is usually located somewhat farther to the rear than in the attack. However, the terrain and other considerations may force the location of the aid stations well forward. The exact site is determined by the individual characteristics of each center of resistance and the situation. For those units occupying defensive positions, the aid station is completely established, but it is kept mobile with those units held in mobile reserve. (See (3) below.) When established, the protection offered by the terrain is increased as much as possible by artificial means.

(3) *Detachment headquarters.*—When the regimental reserve is kept mobile for employment in rapid counterstrokes, rather than being deployed on the regimental reserve line as a blocking force, the regimental aid station may be established to serve it until such time as it is committed. (See par. 31*a*(1).)

b. With artillery units.—When artillery is in position, its medical service is the same regardless of the character of the operations. (See par. 87*b*.) In defense, artillery is distributed in greater depth than in the attack, although this affects the areas occupied by large forces of artillery more than it does the size of individual battalion positions. In general, artillery positions are more stable than in attack, although movement may be required for protection or for the support of counterattacks by general reserves.

c. Deployment (see par. 97*d*).—The medical service during deployment for the defense is the same as in any deployment (see par. 87*a*(3)).

■ 100. DIVISION MEDICAL SERVICE IN DEFENSE.—*a. General.*—In general, because of fewer casualties, better opportunity of planning, more time for installing, and less movement of combat elements, the medical service of the defense is less difficult than that of other operations. However, difficulties may be encountered in—

(1) Hostile artillery and air action in rear areas. The attacker ordinarily has superiority in artillery and he directs much of his effort toward disorganizing communications in rear of the battle position. Movement of casualties may be interrupted, or even denied during daylight hours.

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(2) Support of counterstrokes (see par. 97*g*). A counterstroke may be launched without delay, and medical reserves must be held in proper proportion and located advantageously to support such actions. If the counterattack be delayed for thorough planning and organization, proportionately more time is available for medical preparation.

(3) Preservation of secrecy. Medical installations, no less than others, furnish the attacker with keys to the arrangement of the battle position.

b. Collection in defense.—(1) *Collecting station.*—(*a*) The location of the collecting station depends upon the depth and general arrangement of the battle position, and upon the terrain. It should invariably be located in rear of the regimental reserve line in order to avoid being caught in minor penetrations of the position; and this will place it, in the average situation, between 1,500 and 2,500 yards in the rear of the main line of resistance.

(*b*) The degree to which a collecting station is established in the defense is proportionate to the organization of the position and the deployment of combat elements for the defense in its front. If the position in its front be thoroughly organized and occupied, the station is completely established and protected. Collecting units supporting mobile reserves, however, observe the general rules of collection in the attack. (See par. 89*d*.) When evacuation of collecting stations is irregular, because of enemy interference, the facilities of such stations must be augmented accordingly.

(2) *Liaison.*—Contact with aid stations is established early, and every means is employed to make it effective. Whenever possible, wire communication should be established between the collecting station and the CP of the combat team it is supporting.

(3) *Litter bearers.*—Commanders of bearer elements make thorough reconnaissances of bearer routes and select those offering the greatest net advantages in protection and facility of evacuation. Routes are improved to increase protection, to facilitate the use of wheeled litter carriers and, when practicable, the establishment of advanced ambulance shuttles. An estimate of the situation will indicate the proper allotment of bearer squads to the several aid stations. Provision must be made for the support of local reserves in counterattack.

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c. Division ambulances in defense.—Hostile efforts to disrupt communications in rear of the battle position may make ambulance operations most difficult. Ambulance routes should be selected with this eventuality in mind, and relay posts chosen that will provide the maximum protection. If regular evacuation of collecting stations cannot be maintained, evacuation may be undertaken by convoys, moving rapidly in daylight during lulls in the battle, or under cover of darkness.

d. Clearing in defense.—Clearing in the defense is a normal operation. Because of the relative compactness of a defensive position, rarely will more than one clearing station be required for a division. To escape as much hostile artillery fire as possible, and to avoid being caught in deep envelopments of flanks of the position, it should be located centrally and well to the rear. Protection against hostile air action and the preservation of secrecy may require its concealment. As in the case of collecting stations, enemy interference may prevent the evacuation of the clearing station during daylight hours.

■ 101. VARIOUS DEFENSIVE SITUATIONS.—*a. With secure flanks.*—Since the position is to be held strongly along its front line and general reserves are small in this type of operation, medical units will be committed proportionately in support with small reserves.

(1) *Collecting elements.*—Collecting elements may properly split laterally to operate two collecting stations, since little movement of combat elements is expected, the frontages of infantry battalions will be wide, and litter-haul distances will be great. Reserve elements will usually be employed to reinforce or relieve active units and support any counterattack by the general reserves.

(2) *Ambulance elements.*—Normal operation. The ambulances may operate ahead of collecting stations, at night and during daylight using defiladed routes, in order to reduce the litter haul.

(3) *Clearing elements.*—Normal location and operation obtains.

b. With open flanks.—The medical units made active in support of the initial occupation of the position in mobile

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defense will be few. The remainder will be held in reserve to support the extension of the flank. Installations will be prepared to move away from the hostile envelopment. Reconnaissances will be made for suitable sites to support the extension of the flank(s) and for occupation in case hostile envelopment threatens the initial locations.

(1) *Collecting elements.*—Two stations are generally established initially to support the nose of the position. Any reserves will be located so that they may move promptly to support the extension of the flanks.

(2) *Ambulance elements.*—A portion of the ambulances will support initially the nose of the position. Additional ambulances will support the cavalry and flank covering forces. Ambulance routes to support the extension of the flanks will be reconnoitered.

(3) *Clearing station.*—Normal location and operation obtains. The clearing station is kept relatively mobile with a reserve prepared to move away from hostile envelopments.

c. In offensive-defensive.—(1) *General.*—This operation, which is offensive in character, utilizes the defensive as a temporary measure primarily to asume the counteroffensive. The defense phase may consist of one or several delaying activities, or the mobile defense of a position.

(2) *Medical dispositions.*—(*a*) *Defensive phase.*—The operation of medical units in this phase will be the same as for the type of defensive action adopted. Large medical reserves are held mobile to support both the defense and the counteroffensive.

(*b*) *Counteroffensive phase.*—When the counteroffensive is assumed, medical installations and dispositions are adjusted to support the type of offensive action planned by the commander. The operation of the medical service will then be similar to that in an attack. (See ch. 5.)

■ 102. ARMORED UNITS IN DEFENSE.—Regardless of the attitude of the force of which they are parts, the tactics of armored units are almost invariably offensive. They are employed in counterattacks and in harassing operations. For this reason the medical service of armored units is the same in attack and defense (see ch. 5).

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■ 103. OUTPOSTS AND OTHER SECURITY DETACHMENTS.—*a. Outposts.*—The general procedures of medical service of an outpost are set forth in paragraph 77. The medical service of an outpost of a defensive position is further influenced by—

(1) *Mission.*—If the mission requires a determined resistance, the medical service becomes that of any defense.

(2) *Control.*—(*a*) If the several sectors of the main battle position each outposts its own front, the elements of the division medical service supporting such sectors undertake the medical support of the sector's outpost.

(*b*) If, on the other hand, the outpost operates under central control, the medical support must either be operated under central control or attached to the outpost. In either event, the elements of the division medical service engaged in this service should be taken from the reserve and, if attached, upon the termination of such duty should revert to the control of the division medical unit.

b. Other security detachments.—See paragraphs 97*i* and 77 in turn.

■ 104. COUNTEROFFENSIVE.—*a.* The counteroffensive is usually distinguished from the counterattack by the general attitude of the commander. In the counterattack the commander's attitude remains defensive and he assumes the offensive only temporarily, and with limited objectives, as a means of preserving the defense. The defender seeks always to exhaust the enemy's forces with a minimum expenditure of his own. If successful in this respect, the time will come when the offensive force is no longer able to act aggressively and the initiative may pass to the defender. If, at this juncture, the defender seizes the initiative and undertakes aggressive action against the enemy, he is said to have passed to the counteroffensive. When the defense has been assumed initially with no planned intention of general offensive action later, such an operation is described as a counteroffensive assumed from a passive defense. When, however, the counteroffensive was planned when the defense was begun, the operation is described as an active defense. (See par. 95*b*.)

b. In either case the medical service is that of the attack. The only difference between the two types of counteroffensive,

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insofar as medical service is concerned lies in the degree of planning. In the active defense, plans for the offensive are made in advance and suitable reserves held to support the attacking forces. In the counteroffensive assumed from the passive defense, the medical service must be reorganized without delay and proper dispositions made for the attack. This is difficult at best, and the division surgeon should be informed as early as possible of the plan of the commander.

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CHAPTER 7

MEDICAL SERVICE OF RETROGRADE MOVEMENTS

	Paragraphs
Section I. General	105–107
II. Withdrawal from action	108–111
III. Delaying action	112–114
IV. Retirement	115

SECTION I

GENERAL

■ 105. DEFINITIONS.—A *retrograde movement* is any movement of a command to the rear or away from the enemy. Such a movement may be further classified as follows:

a. A *withdrawal from action* is the operation by which all or part of a deployed force executes a breaking of contact with an enemy force in order to initiate some other action. To constitute a withdrawal from action, however, the retrograde movement must be made pursuant to the will of the commander. (See *c* below.)

b. A *delaying action* is an operation designed to prevent the uninterrupted advance of an enemy. The underlying doctrine in the execution of a delaying action is to gain time without fighting decisive engagements.

c. A *retirement* is a retrograde movement in which a force seeks to regain freedom of action, the movement being part of a well-defined plan which has for its purpose the refusal of decisive combat under the situation that exists at the time. Military usage makes a distinction between a *retirement* and a *retreat*. When a force making a retrograde movement retains freedom of action, the movement is generally referred to as a retirement. Such a movement conveys the impression of full coordination and command control. When no such freedom of action exists, primarily in a movement necessitated by an unsuccessful engagement with the enemy, the movement is generally referred to as a retreat.

■ 106. GENERAL MEDICAL CONSIDERATIONS.—The medical problems involved in retrograde movements vary between wide

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limits, depending upon the type of operation, the enemy reaction, and the general situation. A daylight withdrawal, for example, is a very different operation than a retirement after contact has been broken. It is impossible to lay down rules that are equally applicable to all types of retrograde movements made under all conditions, but there are certain factors that must be considered in the medical planning of any retrograde movement. The more important of these factors are:

a. Time factor.—The number of casualties removed from any battlefield is a function of *time* and *means*. In stabilized situations and in the advance, time is important only as it affects the physical well-being of the injured—it is not vital to the eventual accomplishment of the task. In retrograde movements, time approaches the vanishing point, and its influence in the equation can be taken only by means. This is to say that, as available time decreases, either means must be increased or casualties must be abandoned. There is no other solution to the equation.

b. Casualty rate.—Depending upon the type of operation, the enemy reaction, the terrain, and the weather, the casualty rate may be very heavy or may be negligible. All other factors being equal, so long as an aggressive enemy maintains contact with and denies freedom of action to the force making the retrograde movement, such operations are the most costly in casualties of all military operations; and the possibility of heavy losses must always be considered in medical planning. The principal reason for this lies in the danger of having to move under unrestrained hostile fire. Movement under fire always increases casualty rates, but, in the attack, routes and rates of movement may be adjusted to minimize this danger, and the fire of the attacker greatly decreases the effectiveness of enemy fire. Unless a retiring force retain a comparable degree of initiative, hostile fire can be directed with great effect. The actual number of casualties will also depend, of course, upon the proportion of the retiring force in contact with the enemy; but those factors will determine the rate in those security detachments and other elements that are within the radius of hostile action.

c. Evacuation.—(1) Evacuation is more difficult than in other types of operations because the direction and weight

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of combat coincide with the direction of evacuation and impede it; because the rearward movement of combat elements uncovers successive echelons of medical installations and precipitates crises in their operations; because communications and control are difficult; and because the enemy may wreck the most carefully prepared plan. Routes of evacuation ordinarily will be congested with troops and matériel.

(2) Moreover the measures necessary to cope with the factors impeding evacuation during retrograde movements lie largely beyond the scope of medical authority, and, if evacuation is to be accomplished successfully, positive action must be taken by the commander to facilitate the task, such as the inclusion of ambulances in the list of priorities of movement, provision for the transportation of slightly wounded to the rear on cargo vehicles, and clear-cut directives to subordinate commanders defining their responsibility in the collection and evacuation of their casualties.

(3) Medical troops are included in field forces for the sole purpose of permitting the troops of the arms and other services to devote their entire attention to their own missions without being distracted by the necessity for attending to their casualties. When provided in sufficient strength, medical troops are able to fulfill this function without assistance. However, the strength of medical troops required in any situation varies so widely with the factors of time and casualty rate that, were a number provided that would be adequate in all situations, there would be a great waste of means in most situations.

(4) In no other maneuver is time such a critical factor in medical service as it is in a retrograde movement. This would indicate augmentation of the medical troops, and ordinarily it is feasible to reinforce the medical units in forward areas from division medical units in reserve. However, there is another important consideration: In a retrograde movement it is usually desirable to keep as few troops in contact with the enemy as are necessary to allow the main body freedom of action. Any reinforcement of troops in forward areas, including medical, tends to defeat this end, increases the number of casualties, and adds to the congestion.

(5) The number of medical troops required in forward areas is in indirect proportion to the amount of assistance

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in evacuation that can be rendered by troops of the arms and other services. *While the procedure of permitting troops of the arms and other services to fulfill their combat functions without handicapping them with the care of their casualties must be preserved,* it must be remembered that troops moving rapidly to the rear are not engaged in combat. They can assist, at such times, in the removal of their casualties; and it is at such times that time is most critical. When they are forced to stop and engage the pursuing enemy, movement is suspended, time becomes less critical, and the medical service will require less assistance. A judicious application of such technique in a retrograde movement will result in evacuation of all casualties without interfering with combat elements and without great reinforcement of the medical troops in forward areas.

d. Abandonment of casualties.—Casualties that cannot be evacuated must be abandoned. There is no middle course. Medical service is not alone in the responsibility of preventing the capture of casualties but shares it with the commander as his agency for caring for his casualties. The decision to abandon wounded to the enemy cannot be passed silently to the medical service by default. (See pars. 11*h* and 107.)

e. Medical installations.—(1) *Locations.*—A series of successive locations from front to rear should be planned in advance for every medical installation involved in the movement. Since the general direction of movement is toward medical installations, initial locations should be farther to the rear (i. e., with reference to the enemy) than in other types of operations. Whenever practicable, division medical installations should be established in echelon toward the rear; and, in any event, the next rear location should be occupied with an installation ready to function before a forward location is abandoned.

(2) *Completeness.*—Since time is such an important factor, every effort must be made by all medical echelons to evacuate all medical installations promptly and regularly, so that it will not become necessary to set up elaborate installations.

(3) *Sorting casualties.*—Special care and discrimination in the sorting of casualties, with respect to the type of transport required, will facilitate evacuation.

(4) *Displacement.*—Frequency of displacement will be de-

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termined by the rate of movement of the force, the terrain, and considerations of security. Medical installations should be displaced before they are in danger of becoming involved in rear guard actions. Displacement may be by echelon within units or by leap-frogging complete units.

f. Medical service of security detachments (see par. 77).—More than in the advance, it is usually very important that the main body not become involved in combat. For this reason the missions of security detachments ordinarily will require them to engage in serious combat if the enemy become too aggressive; their medical services must be planned accordingly.

g. Medical service in retirement.—As defined herein, retirement is an operation in which the main body has broken contact and regained freedom of action. It is then conducted much as any march and the medical service is that of a march. However, the march may be forced, and the time factor critical, both increasing the number of march casualties and decreasing the time available for evacuating them; this will require augmentation of a normal march medical service.

h. Future operations.—The operations to be undertaken at the completion of the retrograde movement must be considered in planning the service for movement, especially in the later phases.

■ 107. MEDICAL DOCTRINE IN RETROGRADE MOVEMENTS.—From the foregoing general medical considerations flow the following general doctrines:

a. The decision to abandon wounded is a command decision.

b. Litter bearers and ambulances from the division medical service may reinforce unit medical detachments.

c. Installations of the division medical service are successively echeloned to the rear.

d. The operation and movements of the elements of medical regiments, squadrons or battalions will usually be decentralized to subordinate commanders. Control is maintained by designating the initial and final positions and routes of withdrawal.

e. Timely clearing of the clearing station of patients by higher echelons is indispensable to its mobility.

f. Wounded will be carefully sorted according to transportation requirements.

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g. Litter cases will have priority in ambulances.

h. Walking wounded may be moved to the rear on non-medical vehicles or required to walk.

i. Medical personnel and supplies will be left with wounded abandoned at any medical installations.

SECTION II

WITHDRAWAL FROM ACTION

■ 108. CLASSIFICATION.—*a.* A withdrawal from action is classified as a daylight withdrawal when initiated during the hours of daylight, and as a night withdrawal when initiated during the hours of darkness.

b. The withdrawal from action begins when combat troops or service elements begin movement to the rear. The movement to the rear of reconnaissance parties or small security detachments is not the commencement of a withdrawal from action.

■ 109. DAYLIGHT WITHDRAWAL.—*a. General.*—A withdrawal by daylight involves such heavy losses and so great a degree of disorganization that it is usually preferable to hold out at all costs until nightfall and effect the withdrawal under cover of darkness (FM 100–5). It is rarely attempted except under strong hostile pressure, and then only to save the command from destruction.

b. Characteristics influencing medical service.—(1) The commander, who orders the withdrawal, designates a rearward position on which the troops will prepare for a renewal of resistance or under the protection of which the troops may be assembled for further retrograde movement.

(2) The commander, who orders the withdrawal, selects a suitable covering position and details, from any available reserves, a mobile covering force to occupy the covering position and to cover the withdrawal of the troops engaged. For details see FM 100–5. Local commanders also may designate and place in position local covering forces to assist the troops on the firing line to break off contact and make their way to the rear. It may be necessary to sacrifice a covering force in order to save the bulk of a command.

(3) Infantry units in contact with the enemy move straight to the rear in deploying lines until completely disengaged.

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They then move, usually in approach march formations, to unit assembly areas previously designated. The commander, who orders the withdrawal, assigns zones or routes by which subordinate units are to reach the rearward position.

(4) The artillery with the main forces supports the front-line units while they are engaged in breaking off the action. In some cases, batteries or individual guns may have to be attached to local covering forces remaining in contact. Artillery generally displaces to the rear by echelon. The artillery of the main body may continue the support of the covering forces indefinitely, or it may, after the initial stages, take its place in the march columns. The medical service with artillery units is normal.

(5) Secrecy is seldom possible in a daylight withdrawal.

■ 110. NIGHT WITHDRAWAL.—*a. General.*—A rearward position is designated as in the case of the daylight withdrawal (see par. 109*b*(1)). The withdrawal of the greater part of the troops commences at nightfall. Only weak elements, known as the *covering shell* or *screen,* are left in contact with enemy.

b. Characteristics influencing medical service.—(1) While the rearward position is protected by a covering force designated by the commander, who orders the withdrawal, the first stages of the withdrawal are covered only by the covering shell, which consists of small detachments formed from troops nearest the enemy and well supplied with automatic weapons, ammunition, and pyrotechnics. The covering shell engages in activity throughout the night to create the false impression of continuing the defense or of intended renewal of the attack on the following day. It maintains normal fires and engages in active patrolling. Shortly before dawn it withdraws secretly and makes its way to the main body.

(2) When a night withdrawal is followed by a retirement which continues through daylight, a rear guard is constituted.

(3) The withdrawal is executed on a broad front; troops retire in small columns and, after passing the covering position, are assembled into larger units at designated initial points. Because of much less enemy interference, the assembly of units into march columns is usually accomplished much nearer the front than in the case of daylight withdrawals.

(4) A part of the artillery is left in position to support the

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covering shell. The artillery with the main forces is usually withdrawn by echelon in time to take its position in the march columns.

(5) Secrecy is of the utmost importance.

■ 111. MEDICAL SERVICE IN WITHDRAWAL. *a. Covering forces* (see pars. 77 and 103).—Since time ordinarily is an adverse factor and casualties may be heavy, the medical support of a covering force should be generous.

b. Attached medical personnel.—(1) *With infantry.*—(*a*) Suitable detachments are made to local covering forces remaining in position. In the initial stages of the withdrawal, between the time of breaking contact and the formation of march columns, the general principles of unit medical service are those of the approach march. (See par. 87*a*(3)(*c*)). The single great difference lies in the influence of the time factor. The operations of clearing the field and of collection must be combined. Aid stations cannot be established during the movement; wounded are given first aid and taken directly to the nearest axis of evacuation (see *c* below).

(*b*) In daylight withdrawals especially, it will be absolutely necessary to reinforce the attached medical personnel of infantry. The dispersion of elements due to the extended order, the probable heavy casualty rate, and the lack of time make it impossible for the medical sections to accomplish their task without assistance. These reinforcements can be had from two sources. Bearer elements of collecting units should be so employed insofar as they can be spared from other pressing requirements. However, such reinforcements from medical units may prove inadequate, and, in the initial stages of any withdrawal, litters should be issued by medical sections to the infantry companies, and the personnel of these companies must assist in the evacuation of their own casualties. This action on the part of the infantry will not interfere with combat functions since, during movement, they are not engaged in a fire fight. When movement must be suspended for this purpose, their combat function, of course, becomes paramount.

(*c*) When march columns are formed, the unit medical service becomes that of the march (see ch. 4).

(2) *With artillery.*—Suitable detachments are made to the

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elements of artillery units attached to covering forces. Other unit medical service is normal.

c. Collection.—(1) If established at all, collecting stations must be located in rear of the general line of battalion assembly areas. Any stations operating forward of that line must be closed prior to the initiation of the withdrawal and moved to the rear at the earliest possible moment.

(2) Advanced ambulance shuttles are operated on all practicable axes of evacuation during the initial stages of withdrawal. The ambulance loading posts are in motion, keeping generally abreast the withdrawing infantry elements. Wounded are brought to such axes, loaded into ambulances, and evacuated. If no collecting stations are established, such casualties are taken directly to the clearing station. These moving ambulance loading posts are almost indispensable in the initial stages of a withdrawal from action. If, however, it is impossible to operate them, casualties must be carried to the assembly areas. Even the majority of the walking wounded will require assistance, since they will be unable to maintain the pace of the able-bodied.

d. Division ambulances.—Ambulances must ordinarily be attached to covering forces, including the covering shell. The advanced ambulance shuttles are operated in connection with collection. (See *c* below.)

e. Clearing.—During the initial stages of a withdrawal the clearing station already in operation will serve. Every effort must be made to have it evacuated promptly and kept relatively free of patients by the supporting medical unit of the higher echelon.

f. Medical service of rearward position.—The medical service established for the rearward position depends upon the plan of the commander. If resistance is to be renewed on this position, the medical service is set up for the defense. If, however, this position is merely an assembly position from which retirement is to begin, the medical service will be planned for the retirement.

SECTION III

DELAYING ACTION

■ 112. CLASSIFICATION.—Delaying actions may vary from holding a single position at all costs (in which extreme case

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the element of avoiding a decisive engagement may disappear) to the employment of mere negative measures such as demolitions and road-blocks. In general, delaying actions can be classified as delaying action on a single position or on successive positions.

■ 113. ON SINGLE POSITION.—*a. General characteristics.*—Delaying action on a single position is similar to a passive defense but with the following essential differences:

(1) The intention of the commander is to remain in position only for a limited time, after which he will withdraw.

(2) Units occupy relatively wide fronts and the position is not usually as well organized as in sustained defense.

b. Medical service.—The medical service is that of defense, with complete plans for withdrawal in readiness.

■ 114. ON SUCCESSIVE POSITIONS.—*a. General characteristics.*—(1) Successive positions from front to rear are selected in advance. The distance between such positions will vary with the terrain and the situation, but, in general, they are far enough apart that the enemy cannot attack more than one position without displacing his artillery forward. When practicable, they are selected sufficiently far apart to permit a night withdrawal from each.

(2) The zone in which the delay is to be effected is subdivided into sectors the boundaries of which are extended to the rear initially to include the first two delaying positions, and later the final position. A tactical unit is assigned to each sector. When operating on a broad front, operations are frequently decentralized to combat team commanders.

(3) Units occupy extended fronts; security detachments may operate on the flanks; and the plans for withdrawal are made when the position is occupied.

b. Medical service.—(1) *In position.*—(*a*) *Attached medical personnel.*—Operations normal, in general. The extended fronts may require some dividing of aid stations.

(*b*) *Collection.*—Collecting units are assigned to sectors corresponding with the units which they normally support. If operations are decentralized to combat teams, collecting units should be attached to their respective combat teams. Since each collecting unit must support troops in two positions at one time, collecting units must be divided. Collec-

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tion when in position is, in general, a normal operation. The locations of collecting stations will depend upon the terrain and the distance between positions. Extended fronts, the defensive nature of the operation, and the intention of withdrawing indicate locations well to the rear. Advanced ambulance shuttles must be used to the limit of practicability.

(*c*) *Division ambulances.*—Operations normal, in general. It may be necessary to attach some to front line units occupying isolated positions.

(*d*) *Clearing.*—Operations normal, in general. The clearing station should be located well to the rear and, when practicable, so placed that it can support two positions without displacement.

(2) *During withdrawal.*—See paragraph 111.

SECTION IV

RETIREMENT

■ 115. GENERAL CONSIDERATION.—Following withdrawal, if retirement continues after daylight, a rear guard is usually forced to protect the majority of the main force. Initially, this rear guard consists of the general covering force, reinforced if necessary. When there is likelihood of attack by mobile troops against the heads of retirement columns, advance guards are detailed.

a. General.—When the retirement is short, enemy pressure permits, and the covering force for the withdrawal is sufficient for the protection of the movement, the medical operation is that of a withdrawal from action. When the retirement is long and a rear guard is employed, medical service will be required for march collections in the marching main body and for the action of the rear guard.

b. Medical operations.—(1) Medical units not required to support the rear guard action or to perform either normal or forced march collection, will be moved ahead of the troops to the next bivouac or the new position, whichever is nearer. Ambulance and collecting elements will march between the main body and the rear guard prepared to support the latter's action.

(2) The support of the rear guard action is similar to that of delaying action. Collecting stations will be set up when

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required and displaced in echelon. If authority for ambulance movements to the rear cannot be secured, additional ambulances will be required to transport wounded until they can be moved to the clearing station at the next halt. Medical support of the flank guards conforms in general to that indicated for rear guards. The medical service of all security detachments depends upon the nature of their employment, which may take the form of a defense, delaying action, or counterattack. The medical support given such security detachments must be generous.

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CHAPTER 8

SPECIAL OPERATIONS

		Paragraphs
SECTION I.	Attack of river lines	116–117
II.	Defense against river crossings	118–120
III.	Pursuit	121–123
IV.	Other special operations	124–127

SECTION I

ATTACK OF RIVER LINES

■ **116. GENERAL CONSIDERATIONS.**— *a. Definitions.*— As used herein, the attack of a river line refers to the forced crossing of an unfordable stream that cannot be crossed with foot-bridge equipage alone. The term "river line" signifies the water's edge on the defender's side of the stream.

b. Phases of operation.—An attack against a river line may be divided into three phases:

(1) Preparation of the crossing.

(2) Operation of actually crossing the river by means of ferrying and bridging.

(3) Continuation of the attack to obtain possession of the controlling terrain on the defender's side of the river.

■ **117. CHARACTERISTICS INFLUENCING MEDICAL SERVICE.**— *a. General.*—(1) Medical service in the attack of river lines, while conforming in general to the medical doctrines of offensive operations, presents certain unusual problems resulting from the presence of the river. Ferrying and bridging facilities exercise a considerable influence on medical operation in the movement of medical elements, supplies and casualties. Medical service in this operation concerns itself with the support of the combat units during the advance to the river line; during the passage of the river and the capture of the initial objective; during the operations incident to the seizure of the intermediate objective; and during the attack to gain the bridgehead. The medical problem is further complicated by the necessity of supporting the feint, if any, and the main and secondary attacks which may be located some distance, one from the other. Rigid economy in the commit-

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ment of medical elements must be observed to insure adequate support for the main attack, the principal casualty concentration area of the operation.

(2) Collection and evacuation are unfavorably influenced by darkness and confusion if the attack is carried out at night. Many wounded will be overlooked by litter bearers during the initial attack during darkness and will have to wait until daylight enables litter bearers to locate and remove them to a medical station.

b. Advance to river.—(1) There will normally be few casualties during the approach march of combat elements to the river front, unless the movement is discovered by the enemy. Casualties occurring in the march columns are handled in the usual way. March collecting posts may be set up along the main roads to care for sick and injured.

(2) By the end of this initial phase, aid, collecting and clearing stations should be established in normal support of the area of each crossing. Litter bearers from the supporting collecting elements should be in readiness near each ferrying site. Ambulances should be advanced as close to the river as feasible, to locations defiladed from direct fire.

c. Crossing river.—(1) The unit medical detachments of infantry are ferried across the river with their battalions and set up aid stations near the river. Casualties are collected at the aid stations by the unit medical elements and held until they can be sent back on empty returning boats.

(2) Litter bearers from the supporting collecting elements remove the casualties from returning ferries and carry them to ambulances or to the collecting station for further movement to the clearing station.

(3) By the time the infantry elements reach the first objective and the river is free from small-arms fire, collecting elements should be advanced to the farther bank to collect casualties from the advancing aid stations and remove them to the ferries for further movement to the rear. Collecting stations should be advanced closer to the river as soon as hostile fire permits.

d. Advance to intermediate objective.—(1) During this phase collecting elements continue collection from advancing aid stations and the removal of patients to the ferries. Collecting stations are ferried over as circumstances allow and set up on the farther bank. Patients continue to be re-

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turned by ferry to the near bank where they are loaded in ambulances and sent to the clearing station. The clearing station may displace forward closer to the river during this phase.

(2) It is desirable to advance ambulance and clearing elements across the river as soon as conditions permit. An early priority for movement over the ponton bridge is to be sought. The movement of these elements by ferry may be authorized when bridging is unduly delayed.

e. Seizure of bridgehead.—During this final phase, medical units are pushed across the river as rapidly as possible and resume normal conditions of operation on the farther bank. Clearing stations may be called on to care for numbers of casualties destined for movement out of the division, pending the establishment of ample bridge facilities and the resumption of normal evacuation by the rearward supporting medical echelon.

SECTION II

DEFENSE AGAINST RIVER CROSSINGS

■ 118. GENERAL.—A division utilized in defense of a river line may employ either of two types of defensive action, according to the situation: the cordon defense or the mobile defense. The medical doctrines for defensive operations apply to these types of defense. The casualty density area may comprise the whole front area and the casualties will be proportionate to the intensity of the enemy effort.

■ 119. CORDON DEFENSE.—*a.* The medical service of cordon defense is similar to that of the defense of a position whose flanks are secure. The initial allotment of medical elements to active support will be in rough proportion to the combat elements initially committed. The locations and operation of these active medical units conform, in general, to those in the defense of a position with secure flanks. Medical units held in reserve will be used to reinforce active units and to support the commitment of the division reserve in counterattack.

b. The collection of casualties from the field and from unit aid stations and their evacuation to the clearing station may be greatly hampered or precluded for considerable periods of time by the violence of the hostile attack. Lulls in the combat

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will be utilized to speed up collection by pushing ambulances forward. In certain cases, little collection and evacuation may be possible until night falls or the enemy attack is repulsed. In either event, reserve collecting and ambulance elements will be moved up to clear the forward areas.

■ 120. MOBILE DEFENSE.—*a.* The characteristics of medical service in this type of river defense are similar to those of the mobile defense of a position. In the readiness phase of the defense, medical support will be required for the weak forces outposting the whole river frontage. During the conduct of the defense phase, the commitment of local reserves in the second defensive zone to halt the enemy advance and disclose the location of his main attack will require a proportionate commitment of medical units in support. During the counterattack phase the full resources of medical service will be committed, with the bulk in the area of the counterattack of the division, which wil be the major casualty concentration area in the division sector. The division surgeon must keep constantly informed of the developments in the situation and the tactical plans to maintain mobility of medical service and avoid premature commitment of medical reserves which should be retained to support the division counterattack.

b. The collection and evacuation of casualties will be difficult during the two phases preliminary to the counterattack and the possibility of the capture of some of the wounded by the enemy must be faced.

c. Collecting elements will be committed sparingly in the initial phases and will be located well to the rear. This will require long litter haul except where ambulances can be used ahead of the collecting stations. The clearing station will be set up in a central location well to the rear.

d. When the commander decides on the time and area of the division counterattack, active units may be redisposed and reserve units moved forward to give closer active support to the decisive action impending.

SECTION III

PURSUIT

■ 121. GENERAL CONSIDERATIONS.—When an enemy is forced to retreat, victory is completed by an immediate and vigorous

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pursuit. Direct pressure against the retreating forces is combined with an outflanking or encircling maneuver designed to place our own troops across the enemy's lines of retreat. In the conduct of a pursuit, all arms and units are pushed to the extreme limit of their physical endurance. Losses and fatigue are not permitted to interfere with the prompt start and vigorous prosecution of the pursuit.

■ 122. MEDICAL SERVICE OF DIRECT PRESSURE FORCE.—The direct pressure is maintained by elements in contact with the enemy at the time pursuit is instituted. Reserves may also be committed in the direct pressure. The medical service is that of a fast-moving attack. Because of the enemy's disorganization, if not demoralization, severe battle losses are not to be expected, but fatigue will contribute to the casualty rate.

■ 123. MEDICAL SERVICE OF ENCIRCLING FORCE.—*a. General.*—One or more encircling forces are hurriedly organized, usually from general reserves, and dispatched around the enemy's flank to a designated position in which it may block his retreat. During this movement an encircling force follows routes at such a distance from the enemy flank that it will not become seriously engaged before reaching its objective. The encircling force may consist of horse cavalry, or of infantry and artillery in motor vehicles.

b. Attached medical personnel.—Normal operations obtain.

c. Collection.—A suitable detachment of collecting personnel is attached to the encircling force.

d. Division ambulances.—Division ambulances are attached to the encircling force.

e. Clearing.—Until secure communications can be established between an encircling force and the medical agencies supporting the direct presure force, it will be impossible to clear the encircling force of its casualties. However, provision must be made for the temporary care and treatment of such casualties by attaching to the encircling force a detachment of clearing personnel with suitable unit equipment. This detachment will establish and operate a temporary hospital in rear of the position occupied by the encircling force and undertake the definitive treatment of the sick and injured until such time as they can be evacuated.

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f. Supply.—Because of uncertain communications, the encircling force should carry with them sufficient medical supplies to last until communications can be established.

SECTION IV

OTHER SPECIAL OPERATIONS

■ 124. NIGHT OPERATIONS.—*a. General.*—The increasing effectiveness of aviation and mechanized forces is making it more and more necessary to conduct military operations under cover of darkness or fog. Even when not in contact with the enemy, night marches are now the normal procedure. Night operations may be classified as—

(1) Those carried out behind covering forces (for example, marches).

(2) Operations unprotected by other troops (for example, attacks and withdrawals). For the medical aspects of a night withdrawal see paragraph 111.

b. Night attacks.—(1) Night attacks are always limited objective attacks. They are made with small forces—often with only a battalion and rarely with more than a brigade. The troops participating, including service elements, are usually trained in a rear area for each particular operation. Each officer and man wears some distinguishing mark which can be easily recognized in the dark.

(2) Secrecy is most essential. The attacking force is deployed nearer to the enemy than in a daylight attack. While artillery support may be provided, the infantry does not engage in a fire fight as in a daylight attack but advances rapidly and closes with the bayonet. Upon reaching its objective, the infantry consolidates its position but rarely exploits its success.

■ 125. MEDICAL SERVICE OF NIGHT OPERATIONS.—*a. Behind covering forces.*—The medical service of night marches and of development under cover of darkness differs little in general principles from that of similar operations in daylight. Control is difficult at night, and some decentralization of medical responsibility will usually be necessary. The necessity for strict secrecy will retard and otherwise handicap medical service.

b. Night attacks.—(1) *General.*—The attack will be of

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short duration; success or failure will be determined usually within an hour. If the attack fails initially, it is very difficult to effect, before daylight, the reorganization necessary to renew it.

(2) *Training.*—The medical troops participating should be as well trained in the special operation as the combat elements.

(3) *Attached medical personnel.*—(*a*) Company aid men are attached to the companies. If the objective is near enough to the line of departure, aid stations should be established on the line of departure as soon as the attack is launched. Otherwise the aid station groups follow the axis of the attack and establish stations when and where indicated.

(*b*) Litter squads are easily lost. The attack moves so rapidly and its result is determined so quickly that, rather than have individual squads follow the assault echelons, it is preferable to deploy the litter squads under control and have them systematically search the field after the combat elements have moved on. When the field is cleared, the aid station is moved to the new position.

(4) *Collection.*—Considerations of secrecy will ordinarily prohibit the establishment of a collecting station prior to the launching of the attack. However, the site should be selected in advance and liaison agents reported to the various medical sections. As soon as the attacking force "jumps off," the collecting unit may move into position and establish station.

(5) *Other medical service.*—Other division medical service is normal.

■ 126. PROTECTION OF LINES OF COMMUNICATION.—The troops engaged in the protection of lines of communication are usually organized like, and operate similarly to, security detachments.

■ 127. MOUNTAIN WARFARE.—*a. General considerations.*—The first World War demonstrated that prolonged fighting on a large scale could take place in mountainous terrain in spite of the seemingly insuperable difficulties that had to be overcome. The lack of communications makes supply and evacuation particularly difficult. From necessity, the main operations are usually along the principal roads found in the valleys. The absence of lateral communications may make

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central control impossible, and medical service may have to be decentralized to the several columns.

b. Medical service.—The terrain and the situation will require modifications in method, but the general principles of medical service apply. Until they can be brought to motor roads, casualties may have to be evacuated by various improvised means such as by cacolet, travois, or aerial tramway. The use of collecting stations may not be feasible in many situations, and casualties will have to be prepared at aid stations for extended evacuation. Since operations in mountains move very slowly, this duty can be undertaken by attached medical personnel.

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CHAPTER 9

CHARACTERISTICS COMMON TO CORPS AND ARMY

128. GENERAL.—This and the following chapters deal with the medical service provided in the corps and the army. While the medical services of the corps and of the army differ in scope and in details of organization, the two have some features in common. To avoid repetition this chapter is devoted to the broad general aspects of the medical service common to both echelons. The special aspects of each will be discussed in succeeding chapters.

129. ECHELONS OF MEDICAL SERVICE.—The echelons of medical service do not correspond with the echelons of command and are not to be confused therewith. A single echelon of command, as for example the army, may include as many as three echelons of medical service. The several echelons of medical service are as follows:

a. First echelon medical service is that provided by attached medical personnel to every unit of every arm and service (except medical) of the size of a battalion or larger, whether such unit is an element of a division, a corps, troops, army troops, or GHQ reserve; or whether it is a separate command not a part of a larger tactical or administrative unit. Thus, first echelon medical service is to be found in every echelon of command.

b. Second echelon medical service comprises the collection of casualties from the dispensaries and aid stations of the first echelon and their concentration in one or more clearing stations operated by the second echelon. It is a function of division, corps, and army medical service.

c. Third echelon medical service comprises the evacuation of the clearing stations of the second echelon, with the transfer of the evacuees to, and their hospitalization in surgical or evacuation hospitals operated by the third echelon. Third echelon medical service is not a normal function either of division or of corps medical service, but is usually reserved to army medical service.

d. Fourth echelon medical service includes the evacuation of the evacuation hospitals of the third echelon with the

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transfer of the evacuees to, and their hospitalization in general hospitals. It is a function of the medical service of the theater of operations.

e. If there is further evacuation of casualties to the zone of the interior, such service constitutes a *fifth echelon* of medical service and is a function of GHQ. (See FM 100–10.)

■ 130. EVACUATION POLICIES.—*a. Definition.*—The decision habitually to retain for definitive treatment within a command any class or group of casualties is the evacuation policy of that command.

b. Bases upon which established.—(1) *Duration of treatment.*—(*a*) Expected duration of treatment is the only practicable basis upon which the evacuation policy of a corps or army can ordinarily be established. Such a policy provides that all such cases that may reasonably be expected to be fit for full duty within a specified time shall be retained for definitive treatment, and all other cases evacuated from the command.

(*b*) Obviously such classification cannot be made with exactitude, and some patients retained initially will require reclassification and evacuation later. Even so, the sorting of casualties on this basis will lower materially evacuation requirements.

(2) *Expected result.*—Other bases are used in higher echelons but are rarely practicable in the corps and army. In the AEF, for example, the basis was the expected result rather than duration of treatment. Only such cases were evacuated to the zone of the interior as were expected to be unfit for further military service.

(3) *Class of disease or injury.*—Another basis is the class of disease or injury. A policy based upon this provides that only certain types of disease, such as communicable, shall be retained or evacuated; or that only certain types of injuries, such as fractures, head injuries, injuries from chemical agents, etc., shall be retained or evacuated.

c. Nontransportables.—Regardless of any established evacuation policy, there is usually a small proportion of patients who cannot be transported without grave added danger to life or limb. These patients are termed nontransportables although obviously the term is relative. In the absence of a specific directive from the commander, the disposition of nontransportables is a medical decision.

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d. Decision.—The establishment of an evacuation policy is a command decision which may, at any time, be modified or abolished by the commander. It is the responsibility and duty of the surgeon to advise the commander in this matter.

e. Factors considered in establishing policy.—(1) *Mobility of medical service.*—The medical service of a command must, whenever possible, as a whole, be kept as mobile as the command. Medical installations of mobile commands should never be permitted to become immobilized through the accumulation of unevacuated patients.

(2) *Mobility of command.*—Mobility is a relative, not an absolute, quality. The mobility required of the medical service depends upon the mobility of the command; a corps, as a whole, moves less rapidly than one of its divisions; and the army, as a whole, moves less rapidly than any of its subordinate elements. Corps and army medical installations, therefore, need not be as mobile as those of divisions, although the corps medical service should be more mobile than that of the army.

(3) *Anticipation of movement.*—Because of size and complexity, corps and armies must anticipate movement for longer times than must divisions. Several hours ordinarily are required in the case of corps, and the time may run into days in the case of an army. This allows the medical service time to evacuate retained cases in the higher echelons.

(4) *Transportability of short duration cases.*—The physical condition of short duration cases, excluding those the outcome of which is fatal, is ordinarily such that they can be moved readily and rapidly whenever complete evacuation of a medical installation is necessary.

(5) *Reduction of turnover in organizations.*—Until he has become familiar with his new organization, and his new commander has come to know his capabilities and limitations, a replacement rarely is as effective as the veteran whose place he takes. This is especially true in corps and army troops in which the proportion of technical specialists is high. Efficiency will be promoted by any practicable means by which the turnover of personnel can be reduced.

(6) *Reduction in replacement administration.*—For every casualty evacuated, two men must be moved—the casualty to the rear and his replacement to the front. Obviously, then,

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for every casualty that can be returned to his organization within a reasonable time, the movement of two individuals is made unnecessary.

(7) *Reduction in evacuation requirements.*—Every effort must be made to avoid loading the chain of evacuation beyond its peak of efficiency through evacuation of patients whose conditions justify their return to duty at an early date. For reduction in evacuation requirements see (8) below.

(8) *World War experience in short duration cases.*—The sources of error in the following data lie largely on the side of conservatism since cases frequently recovered en route or in intermediate installations where administrative difficulties precluded their immediate return to duty. For this reason many cases were retained on sick report longer than they would have been had they been treated within their own commands. In support of this contention it is submitted that the average duration of treatment of all cases of sickness and nonbattle injuries in the first World War was—

(*a*) In the United States where local treatment was the rule, 20 days.

(*b*) In the AEF, where a considerable proportion was evacuated, 27 days.

Duration of treatment in the AEF

Percentage of patients			Returned to duty in—
Sick and nonbattle injuries	Gunshot wounds	Gas casualties	
			Day
5.35	0.10	1.97	1
10.25	.33	3.95	2
14.75	.66	5.94	3
18.91	1.09	7.94	4
22.74	1.60	9.94	5
26.28	2.20	11.94	6
29.56	2.86	13.92	7
32.60	3.59	15.89	8
35.42	4.37	17.84	9
38.05	5.20	19.77	10

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131. PREVENTIVE MEDICINE.—*a. Definition.*—Preventive medicine includes all measures directed toward the prevention of disease and injury. The term *sanitation* is synonymous but common usage has largely restricted it to the control of environment as distinguished from personal hygiene and control of the individual.

b. General considerations.—(1) The conservation of mobilized manpower is one of the basic missions of the medical service. This is accomplished by the prevention of disease and injury, and by the repair of such disability as arises out of failure of prevention.

(2) Physical condition is a critical factor in the combat efficiency of troops. Military history offers numerous examples of battles that were lost and campaigns that failed solely because of sickness among the soldiery. The physical strain in modern warfare has increased the importance of physical condition. Situations will arise in every war in which the health of troops must be subordinated, for a time, to military necessity, but consistent disregard of the health of troops will, as it always has in the past, lead to disaster.

c. Responsibility.—(1) *Commanding officers.*—Commanding officers of all grades are responsible for sanitation and for the enforcement of the provisions of sanitary regulations and orders within their organizations and the boundaries of areas occupied by them. Generous use should be made of the technical knowledge and advice of Medical Department officers but commanding officers retain full responsibility for the initiation and enforcement of suitable measures for the correction of sanitary defects.

(2) *Medical Department.*—The Medical Department is responsible for investigating, reporting on, and making recommendations relative to all matters affecting the health of the Army, including the location of camps and stations, the source and methods of purification of the water supply, the methods and efficiency of waste disposal, the food supply and the sanitation of messes, the suitability of clothing and housing of troops, efficiency of training in personal hygiene and sanitation, the elimination of insects, and all other measures for the prevention or control of disease.

d. Prevention of disease.—See FM 8–40.

e. Prevention of injury.—(1) *Nonbattle injuries.*—Carelessness in the handling of animals and matériel is productive of

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a high injury rate. The surgeon should examine the admissions to sick report, by cause by organization, to determine the sources of avoidable injuries; study, in collaboration with organization commanders, the causes of injuries; and advise his commander regarding measures to reduce accidents.

(2) *Battle injuries.*—Battle injuries can be reduced without interfering with the primary missions of troops. One notable example of this type of prevention is the steel helmet. The high proportion of head injuries in the first World War, due to the combined effects of fragmenting missiles and trench warfare, led the medical services of all armies to suggest that measures be taken to protect the head. The gas mask is another example. It is a responsibility of the medical service to study this problem.

f. Inspections.—It is a staff responsibility of the surgeon to insure, by inspections and reports that the directives of the commander in the field of preventive medicine are being enforced in all subordinate echelons.

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CHAPTER 10

MEDICAL SERVICE OF THE CORPS

■ 132. DEFINITION.—The term *corps* is used to designate two entirely different types of military organization—administrative and tactical. When used in connection with administrative organization, it refers to a group of personnel with common characteristics, training, and missions, such as the Coast Artillery Corps, the Army Air Forces, and the Medical Corps. When used in connection with tactical organization, however, it refers to the highest subordinate echelon of command in an army and is commonly designated as an army corps. Unless specified in each instance, the latter definition obtains throughout this manual.

■ 133. GENERAL CHARACTERISTICS OF CORPS.—*a. General functions.*—The corps is primarily a tactical unit of execution and maneuver. It is an agency for the coordination of the tactical operations of such divisions as may be assigned to it, directing their actions and supporting them with additional means at its disposal.

b. Organization and special functions.—(1) The permanent organization of a corps consists of a headquarters and certain corps troops. Divisions are not permanent components of a corps.

(2) *Corps headquarters.*—The command posts of the chief of artillery and engineer are usually established at or near the forward echelon of corps headquarters.

(3) *Corps troops.*—Permanently assigned to the corps are units of—

(*a*) *Cavalry.*—One regiment of horse and mechanized cavalry for reconnaissance, security, and such other cavalry missions as may be required.

(*b*) *Field Artillery.*—To undertake fire missions associated with the action of the corps as a whole; to engage in counterbattery and interdiction fires, so as to permit the bulk of the division artillery to devote its efforts to direct support of the infantry and to reinforce the fires of the division artillery. The corps artillery includes a field artillery brigade composed

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of a headquarters, a headquarters battery, two regiments of 155-mm howitzers, one regiment of 155-mm guns, and an observation battalion.

(*c*) *Coast Artillery Corps (antiaircraft).*—To provide antiaircraft protection to the divisions and to corps troops and installations. The corps antiaircraft artillery consists of one antiaircraft regiment and one separate battalion of 37-mm antiaircraft guns.

(*d*) *Corps of Engineers.*—Two regiments of combat engineers and one topographic company to perform engineer tasks in the corps area in rear of division boundaries; to undertake in division areas special tasks beyond the capabilities of division engineers; to reinforce division engineers; and for mapping.

(*e*) *Army Air Forces.*—An observation group of three squadrons for reconnaissance and other observation missions for the corps or its divisions.

(*f*) *Signal Corps.*—A signal battalion to construct, maintain, and operate the signal communications of the corps.

(*g*) *Military Police.*—One military police company to control the corps area in rear of division boundaries, and to relieve the divisions of their prisoners of war.

(*h*) *Ordnance Department.*—For the supply and maintenance of the ordnance matériel of corps troops, and for the maintenance of division ordnance. Ordnance troops include a headquarters detachment and three medium maintenance companies.

(*i*) *Quartermaster Corps.*—A service company, a gasoline supply company, a light maintenance company, and two truck companies for the supply of corps troops; for the maintenance of corps and division motor transport; and to supplement division motor transport, when necessary.

(*j*) *Medical Department.*—A medical battalion for the second echelon medical service of corps troops. The battalion comprises a battalion headquarters detachment, three collecting companies, and one clearing company.

(4) *Divisions.*—(*a*) Divisions are assigned to and relieved from a corps by the army commander. The number of divisions assigned to a corps varies with the situation and the mission. The number may be changed during the course of any operation, divisions being added or taken away as the situation indicates.

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(*b*) The type army corps is one of three divisions. Because the type corps is used generally in instruction, it must not be inferred that the corps is a fixed unit of this size. The principal characteristic of the organization of a corps is its flexibility with respect to the number of divisions that it controls.

■ 134. ADMINISTRATIVE RESPONSIBILITY OF CORPS.—*a. General.*—The corps, when part of an army, is not a link in the chain of supply, evacuation, and replacements for its divisions, except in the supervision of requisitions for and allocations of ammunition and personnel. (See FM 100–10.) Its trains normally carry no reserve supplies for its divisions. Its administrative functions are limited to those incident to the requirements of corps troops. When a corps is detached from the army for both operations and administration, it becomes in effect a small army with all the administrative functions normally performed by the army. In such a situation it requires a considerable reinforcement in service units. (See ch. 11.)

b. Personnel.—The strength returns of divisions pass through corps headquarters, since strength is an important limiting factor in tactical operations. Replacements are ordinarily allocated to the corps, and the corps indicates the distribution desired among corps troops and the divisions. Except those for corps troops, however, such replacements are not reported in person to the corps, but are reported directly to the divisions in the numbers, grades, and branches indicated by the corps commander.

c. Supply.—Supplies that are intimately associated with tactical operations, such as ammunition and engineer materials, are usually allocated to the corps. The corps indicates their distribution on the basis of the situation and the missions of the several subordinate elements; and, except those destined for corps troops, such supplies are distributed directly to divisions which send their own organic transportation direct to suply points or depots to obtain the desired items.

d. Evacuation.—Unless otherwise arranged by higher authority, or assumed by the corps commander in the interest of tactical success, the responsibility of the corps for medical service is limited to that in connection with corps troops.

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This includes first echelon service in the units of corps troops, and second echelon service by the corps medical unit.

■ 135. GENERAL ORGANIZATION OF MEDICAL SERVICE OF CORPS.—The medical service of the corps is organized into two echelons:

a. The attached medical personnel comprising the medical detachments of the units of corps troops.

b. The corps medical service which, in turn, is composed of—

(1) The headquarters corps medical service, which includes the corps surgeon and his commissioned and enlisted assistants through which he exercises his staff and command functions. (See par. 136*b*.)

(2) The corps medical battalion, which is an element of corps troops.

■ 136. CORPS SURGEON.—*a. Selection* (see FM 8–55).—The corps surgeon is the senior officer of the Medical Corps assigned to the corps medical unit.

b. Staff responsibilities.—For the staff responsibilities common to surgeons of all larger units see FM 8–55. In addition, the corps surgeon must—

(1) Keep the corps commander advised of the medical situation in all divisions of the corps insofar as it exerts any influence upon tactical operations. The corps commander ordinarily has no responsibility in connection with the administrative functions of his divisions, which includes medical service. However, when administrative matters impose limitations upon tactical plans, they come within the proper scope of interest of the corps commander. The corps surgeon must, therefore, keep himself informed and the corps commander advised of the needs of division medical services to meet problems imposed upon them by corps plans.

(2) Be prepared to elaborate the details involved in the discharge of any responsibility for division medical service which may be placed upon the corps commander. When the corps is operating independently, this includes all the functions of the army surgeon (see ch. 11). In other situations, certain responsibilities of army service may be decentralized to corps.

(3) Be prepared to arrange and reinforce division medical services from the corps medical service at such times as reinforcements cannot be had from the army medical service.

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Such action will be of the nature of meeting an emergency since the bulk of the corps medical battalion, in the usual situation, will be occupied with the medical service of corps troops.

c. Command responsibilities.—The corps surgeon commands—not directly as in the case of the division surgeon, but through unit commanders in a subordinate echelon of command—

(1) The corps medical battalion.

(2) All other medical units which may be assigned or attached to the corps and which are not, in turn, assigned or attached to a subordinate element of the corps.

d. Accounted for.—The corps surgeon is accounted for on the returns of corps headquarters.

■ 137. RELATIONS OF CORPS SURGEON TO DIVISION SURGEONS.—*a.* The relations of the corps surgeon to division surgeons depend upon the administrative organization prescribed in the army. Operating as part of an army, the corps has no responsibility for division medical service.

b. When the army decentralizes any of its responsibility for evacuation to the corps, or when, because of its bearing upon tactical operations, the corps commander assumes any control of division medical service, as a staff officer of the corps commander, the corps surgeon exercises technical supervision over division medical services to the extent that the corps commander is interested or responsible. In no case does the corps surgeon exercise command authority over division surgeons.

■ 138. HEADQUARTERS CORPS MEDICAL SERVICE.—*a. General.*—(1) The purpose of the headquarters corps medical service being to assist the corps surgeon in the discharge of his staff duties, it follows that its organization should be based upon the principal functions of the corps surgeon. While no details of this organization have ever been prescribed, the major staff responsibilities of the corps surgeon fall into certain well-defined categories which may be made to serve as the basis of the organization of the headquarters corps medical service.

(2) Listed in succeeding paragraphs are the general functions and responsibilities that may be allocated to divisions or subordinate sections. Limitations in personnel may re-

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quire that two or more major functions be consolidated into one division. Furthermore, the importance of certain functions will vary with the location of the theater of operations and the general military situation, and this may require a redistribution of personnel. For these reasons, no fixed organization can, or should be prescribed, and the discussion that follows is intended merely as a guide to the organization of the headquarters corps medical service.

b. Administrative division.—Routine general administration, personnel administration, coordination of other divisions, and all miscellaneous matters that do not come within the scope of another division.

c. Preventive medicine division.—All matters pertaining to the prevention and control of disease, including supervision of sanitation, hygiene of food and water, field investigations and statistics of diseases and nonbattle injuries. This is an important division under all conditions.

d. Operations and training division.—Medical operations, training of medical troops, evacuation and hospitalization, reports and returns of battle casualties.

e. Dental division.—The corps dental surgeon and his assistants.

f. Veterinary division.—The corps veterinarian and his assistants.

g. Supply division.—Medical supply requirements of corps troops, supply inspection, and, when authorized, the allocation of supplies or supply credits among divisions and corps troops.

■ 139. CORPS MEDICAL BATTALION.—*a. Organization.*—Same as that of the medical battalion of a triangular division. (See fig. 16 and FM 8–5.)

b. Command.—It is commanded by the senior officer of the medical corps assigned and present for duty therewith. The chain of command is corps commander, corps surgeon, and medical battalion commander.

c. Functions.—(1) *General.*—The corps medical battalion furnishes to corps troops a medical service similar to that furnished divisions by division medical regiments or battalions. (See ch. 2.)

(2) *Second echelon medical service.*—It collects the sick and injured from the aid stations and dispensaries of corps

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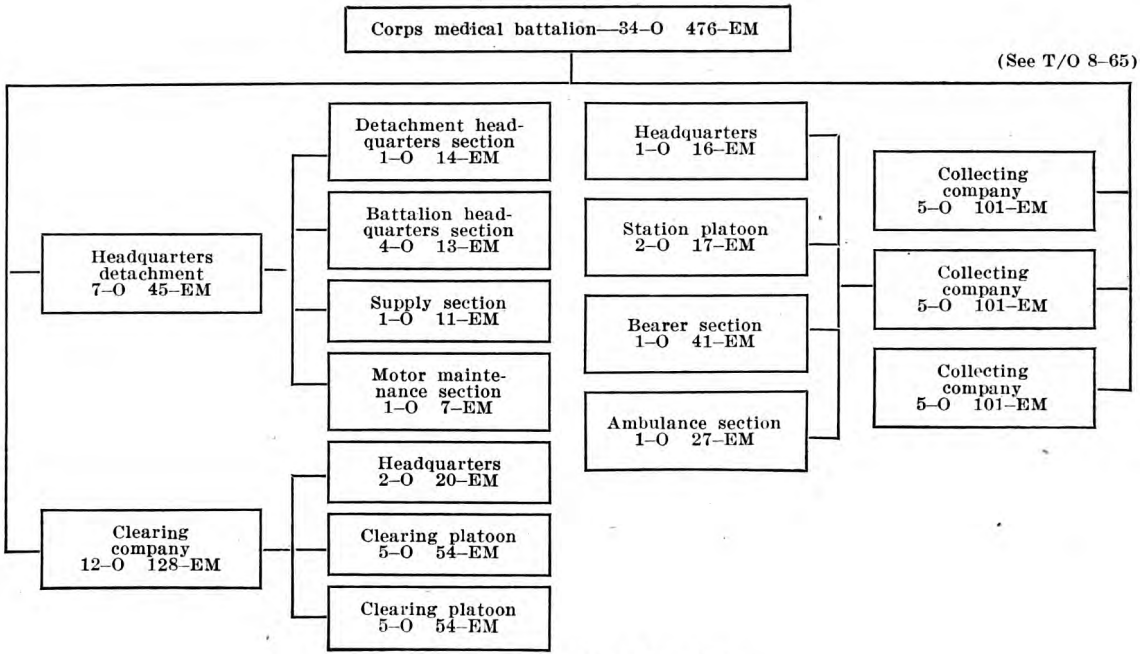


FIGURE 16.—Corps medical battalion.

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troops and evacuates them to the corps clearing station(s). (See par. 140.)

(3) *Medical supply.*—The headquarters detachment of the corps medical battalion includes the operating agency for the medical supply of all corps troops. (See par. 147.)

(4) *Reinforcement of division medical services.*—See paragraph 136*b*(3).

■ 140. ATTACHED MEDICAL PERSONNEL OF CORPS TROOPS.—The medical detachments of units of corps troops correspond both in organization and functions to their counterparts in the division. When their units are engaged in combat they furnish primary combat medical service. When their units are not engaged actively in combat (many units of corps troops are employed habitually in rear areas), they furnish a dispensary service. (For details see ch. 2.)

■ 141. MEDICAL SUPPORT OF CORPS TROOPS.—*a. General.*—The general procedures governing the medical support of units of corps troops are identical with those governing the medical support of units of the division. (For details see ch. 2.) Casualties are given first aid by unit medical detachments, and collected, sorted, and evacuated by supporting medical troops. The details of the latter operations depend upon the location and nature of employment of the unit.

b. Corps troops employed in division areas.—The establishment of more than one chain of evacuation within a limited area is both uneconomical and productive of confusion. For this reason, whether attached to the division or not, units of corps troops operating within a division area normally are supported by that division medical service. However, particularly when such corps units are not attached to the division, the division surgeon concerned must be informed of the presence of the corps units within his area and instructed concerning his responsibilities therefor.

c. Corps troops employed outside division areas.—(1) *Collection.*—(*a*) Since the aid stations and dispensaries of units of corps troops operating in rear areas ordinarily can be evacuated directly by ambulances, the establishment of collecting stations by the corps medical service for this purpose is rarely indicated. Since, however, ambulance elements are incorporated in corps collecting companies, the responsibility for this evacuation rests with the collecting companies.

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(*b*) When collecting stations are established by the corps medical battalion, the same principles of organization and operation govern as in the case of division collecting stations. For details of the employment of collecting units and of evacuation of aid stations and dispensaries by ambulances, see chapter 2.

(2) *Clearing.*—(*a*) Clearing is an essential function of all second echelon medical service. However, the scope of the functions of a corps clearing station may, under certain conditions, be extended to include the temporary hospitalization of short-duration cases. The corps, as a whole, may be expected to move less rapidly than any one of its divisions. This permits the corps medical service to devote more time to the sorting of casualties and, under average conditions, to retain for definitive treatment for a reasonable time such patients as give promise of early recovery. It must be emphasized, however, that the corps clearing station, no less than that of a division, must not be permitted to lose essential mobility through undue accumulation of patients. It is only that the mobility required of the corps medical services is ordinarily less than that required of division medical service that any accumulation of patients in the corps clearing station can be considered. In some situations it may be as imperative to clear the corps of casualties as it is to clear a division. (See pars. 61 to 71, incl.)

(*b*) Corps clearing stations should be located so as to be most convenient to the bulk of the troops they support. The essential characteristics of their sites are the same as those of division clearing stations. (For details see ch. 2.)

■ 142. POSITION OF CORPS MEDICAL SERVICE IN ARMY CHAIN OF EVACUATION.—The corps medical service and division medical services are in the same medical echelon, which is to say that the casualties of divisions normally are not evacuated through corps medical installations but that the casualties both of divisions and of corps are evacuated by the army medical service.

■ 143. SPECIAL EMPLOYMENT OF CORPS MEDICAL BATTALION.—*a. General.*—It must be remembered that the corps medical battalion is designed primarily to furnish second echelon medical service to corps troops, and that its capabilities ordi-

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narily are exhausted by the discharge of that function. However, situations may arise in which other functions of medical service become of greater importance to the corps commander than the prompt evacuation of his casualties from rear areas. In such cases, he may decide to reduce the second echelon medical service of corps troops, or to arrange with the army to take over a part of that function, and to employ a part of the corps medical battalion on other missions.

b. Support of divisions in reserve.—When divisions of a corps are held in reserve, it may be advantageous to collect and evacuate their casualties with elements of the corps medical unit operating under corps control, thus permitting the division medical services to retain full mobility. When this support is undertaken, reports of casualties evacuated must be furnished the divisions concerned.

c. Support of security detachments.—For a detailed discussion of the medical service of security detachments see paragraph 79. When a security detachment is operating under corps control, the corps is responsible for its medical service unless the corps commander specifically places such responsibility upon a lower echelon. Division medical services may be reinforced by the corps in order to provide more medical service for division security detachments.

d. Pursuit.—(1) The rapid assembly of an encircling force often presents difficulties, particularly as regards service elements. The medical elements of an encircling force, other than attached medical personnel, may be furnished from the corps medical unit when withdrawal of such elements from division medical services is not practicable.

(2) As soon as communications are established with the encircling force, it may be advantageous to evacuate this force with ambulance elements of the corps medical unit to a clearing station in rear of the direct pressure force where such casualties can be delivered to the army medical service.

e. Rapid displacements of division clearing stations.—In rapid advances or retrograde movements, clearing elements of the corps medical unit may assist divisions in the establishment of successsive echelons of clearing stations. For such purpose they may be attached to divisions as reinforcements, or when indicated they may be operated under corps control, but coordinated with division medical services.

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■ 144. REINFORCEMENT OF DIVISION MEDICAL SERVICES.— *a. General.*—The normal source of reinforcements for division medical services is the army. The medical needs of the several divisions, as indicated by the situation and their respective missions, are estimated when corps plans are prepared. Any additional medical means required are requested of the army, and, if such medical reinforcements are allocated to the corps, the corps distributes them among the divisions in accordance with their needs as foreseen.

b. Special situations.—When the army is unable to furnish all the medical reinforcements required, or when a necessity arises that could not be foreseen in time for the army to furnish them, parts of the corps medical battalion may be used for this purpose. In this connection see paragraph 151*a*. However, the corps commander ordinarily is not responsible for the evacuation of divisions, and he may hesitate to assume any such responsibility unless the inadequacy of a division medical service is exerting an adverse influence upon its tactical efficiency. In this latter event, division medical service becomes a tactical consideration and hence a matter of proper concern to the corps commander.

c. Organization of reinforcements.— (1) *Army medical units.*—Medical reinforcements furnished by the army ordinarily will be in the form of complete administrative units such as companies. The corps may allocate such complete units to divisions, or may distribute them as indicated in (2) below.

(2) *Corps medical unit.*—Subordinate elements of the corps medical unit may be attached to a division in the form of a complete unit; a smaller tactical unit such as a platoon or section; as detachments of mixed units such as one composed of a litter bearer platoon and an ambulance section; or as detachments of individuals. All other considerations being equal, regardless of how small the reinforcement, command control will be facilitated if tactical organization is preserved in attaching reinforcements.

■ 145. EVACUATION POLICY (see par. 130).—The proper evacuation policy for a corps depends entirely upon the situation. A safe policy will, in any event, be one which provides for retention for treatment of fewer cases than provided for in the army evacuation policy. But even so conservative a

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policy as a 2-day policy will appreciably reduce the number to be evacuated.

■ 146. PREVENTIVE MEDICINE AND SANITATION (see par. 131)— *a. Extent of responsibility.*—The responsibility for prevention and control of disease and injury parallels the responsibility for other aspects of medical service. In general, the responsibility of the corps is limited to corps troops and to such parts of the corps area as lie outside of division boundaries. The army may decentralize to corps the supervision of division sanitation; and when the incidence of disease is reflected in the combat efficiency of a division, it becomes a matter of tactical concern to the corps commander and hence falls within the scope of his responsibilities.

b. Organization.—This phase of medical service is under the direct supervision of the preventive medicine division of the headquarters corps medical service headed by the corps medical inspector. When not required in combat, the collecting elements of the corps medical unit may be employed in the field work incident to sanitation. For the nature and scope of such employment of collecting units see paragraph 41.

■ 147. SUPPLY.—*a. Echelons.*—The corps medical service is concerned with two different echelons of supply: the medical supply of all corps troops, and all classes of supply for the corps medical battalion. The fact that all these supply operations center in the supply section of the headquarters detachment of the corps medical battalion must not be permitted to obscure the sharp distinction, both in responsibility and in scope, between these two functions and the important differences in administration.

b. Responsibility.—(1) *Corps medical supply.*—The corps commander is responsible for all supply of corps troops, and the corps surgeon is his staff officer in charge of medical supply.

(2) *Unit supply.*—Unit supply of the corps medical battalion is a responsibility of the battalion commander, and his staff includes a battalion supply officer (S–4) who is in direct charge of the details thereof.

c. Organization for supply.—(1) *General.*—All supply operations, as distinguished from planning and control, are centered in the supply section of the headquarters detach-

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ment of the corps medical battalion. This section is organized into two distinct groups: one concerned with corps medical supply (see (2) below), and the other with all supply of the medical battalion (see (3) below).

(2) *Corps medical supply.*—The corps surgeon, acting by the authority of the corps commander, plans and controls the medical supply of the corps. His assistant in direct charge of operations is the corps medical supply officer who is, at the same time, the unit supply officer of the corps medical battalion and the commanding officer of the headquarters detachment thereof. Administrative details are handled by the corps medical supply group described in (1) above.

(3) *Unit supply of corps medical battalion.*—The battalion supply officer (see (2) above) is in direct charge, and administrative details are handled by the unit supply group of the supply section of the headquarters detachment.

d. Procurement.—(1) *Corps medical supply.*—Requisitions for medical supplies are submitted through channels by all unit supply officers of corps troops, including the unit supply officer of the corps medical battalion. The corps surgeon, by the authority of the corps commander, approves or modifies such requisitions and sends them to the corps medical supply officer. The corps medical supply officer consolidates the requirements and procures the supplies by one of two methods:

(*a*) He submits through channels a consolidated requisition upon the army medical supply officer.

(*b*) If depot credits have been set up in favor of the corps, he draws directly upon such credits.

(2) *Unit supply.*—The unit supply officer of the corps medical battalion consolidates the requirements of the several subordinate elements thereof by procuring branches (quartermaster, engineer, ordnance, medical, supplies, etc.), and submits, through channels, such consolidated requisitions to the proper branch supply officer of the corps. In the case of medical supplies, and for administrative reasons, he submits, as battalion supply officer, through the corps surgeon to himself, as corps medical supply officer, the requisitions for medical supplies required by the medical battalion. The administrative details are, however, handled by the two separate groups of the supply section of his headquarters detachment. (See *c* above.)

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e. Distribution.—(1) *Corps medical supply.*—Upon receipt of the supplies, the corps medical supply officer distributes to the several unit supply officers the quantities that they have requisitioned.

(2) *Unit supply.*—Upon receipt of the supplies, the battalion supply officer issues, upon memorandum receipt, to the several subordinate elements of the battalion the amounts of the several classes of supplies that they have requested.

f. In combat.—The method of distribution of medical supplies in combat is most informal. Every consideration is subordinated to the objective of keeping medical units supplied. The corps medical dump is established in a central location (usually at, or near, the corps clearing station). Requests for supplies are sent there by ambulances or by special messengers, and no formal procedure is required.

■ 148. PLANS AND ORDERS.—*a. Definitions.*—See FM 8–55.

b. Corps medical plan.—(1) *Responsibility.*—The corps surgeon is responsible for the preparation of the corps medical plan.

(2) *Preparation.*—The basis of the plan is the basic decisions of the commander together with supplemental decisions that may be published by, or obtained from, the corps general staff. The plan is drawn by the operations and training division of the headquarters corps medical service. Tentative decisions required during preparation are made by the corps surgeon, who approves the final form in which the plan is submitted for approval.

(3) *Approval.*—The medical plan is tentative until it has been approved by the corps commander. This approval ordinarily is given by G–4, by the authority of the corps commander. When approved and published in administrative instructions, it becomes the basis for all medical dispositions and is equally binding upon all elements of the command.

(4) *Scope.*—The scope of the corps medical plan is governed by the extent of the medical responsibility of the corps commander. In the simplest case it is limited to the details of the medical supply and evacuation of corps troops only, including such other arrangements as may be necessary to carry out these details. If additional medical means be allocated to the corps, the corps medical plan provides for their employment, either under corps control or by further allocation to divisions.

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(5) *Form.*—Many forms have been proposed for a medical plan. In this connection, however, it must be remembered that the primary purpose of the medical plan is to furnish a draft of instructions pertaining to the medical service for inclusion in the commander's orders. For this reason, the items of the medical plan should follow the form and general arrangement of the order into which they will be drafted, so that each paragraph of the order can be compiled readily by combining, as subparagraphs, the appropriate items of the several staff plans. (See FM 8–55.)

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CHAPTER 11

MEDICAL SERVICE OF THE ARMY

		Paragraphs
SECTION I.	General considerations	149–153
II.	The army surgeon	154–161
III.	Army medical units	162–174
IV.	Medical operations	175–182
V.	Influence of tactical operations upon medical service	183–189
VI.	Supply	190–193

SECTION I

GENERAL CONSIDERATIONS

■ **149. DEFINITION.**—The army is the largest tactical unit in the military forces of the United States, the basic organization of which is prescribed and relatively permanent. Larger tactical commands are formed by grouping two or more armies into a combination designated as a group of armies.

■ **150. GENERAL CHARACTERISTICS OF THE ARMY.**—*a. General functions.*—The army is the fundamental unit of strategical maneuver. It has territorial, tactical, and administrative functions.

b. Organization and special functions.—(1) *General.*—The permanent organization of an army consists of a headquarters and of army troops. Two or more corps, consisting of two or more divisions each, complete the organization. While the organization of an army is no more fixed than that of a corps, the strategical nature of its missions ordinarily precludes frequent or important changes in the organic means allotted to it. However, by varying the allocation of divisions to corps to meet changing tactical situations, the army alters its internal organization as the commander sees fit.

(2) *Army headquarters.*—Army headquarters includes the commander and his commissioned and enlisted assistants. It is organized into two echelons:

(*a*) The *forward echelon* includes the commander and his aides, the general staff section, field artillery section, antiaircraft artillery section, engineer section, aviation section, signal section, ordnance section, medical section, and a chemical warfare section (for tactical matters).

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(*b*) The *rear echelon* includes the adjutant general's section, inspector general's section, quartermaster section, judge advocate's section, finance section, chemical warfare section (for supply and maintenance), and a chaplain's section.

(3) *Army troops.*—Permanently assigned to the army are units of—

(*a*) *Coast Artillery Corps (antiaircraft).*—One antiaircraft brigade of three regiments for the antiaircraft protection of army installations and to augment the antiaircraft artillery of subordinate echelons.

(*b*) *Corps of Engineers.*

1. For general engineer tasks in support of the army as a whole and for reinforcing the organic engineers of subordinate echelons; for such special tasks as bridging, map making, camouflaging, and the supply of water and engineer materials.

2. Army engineer units include—

3 regiments, general service.
6 battalions, separate.
2 companies, dump truck.
2 battalions, heavy ponton.
4 companies, light ponton.
1 battalion, topographic.
1 battalion, camouflage.
1 battalion, water supply.
1 company, shop.
1 company, depot.

(*c*) *Signal Corps.*

1. For the construction, maintenance, and operation of army signal communications of all types; photography, intercepting enemy radio communications and locating their radio stations; and for the supply of signal materials.

2. Army signal units include—

2 single battalions.
1 radio intelligence company.
1 pigeon company.
1 photographic company.
1 depot company.

(*d*) *Army Air Forces.*—One reconnaissance squadron.

(*e*) *Chemical Warfare Service.*

1. For the detection and identification of chemical

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agents; the decontamination of vital areas and matériel; the impregnation of clothing and other matériel with protective agents; and for the supply and maintenance of chemical warfare materials.

2. Army chemical warfare units include—
   1 chemical field laboratory.
   3 chemical decontamination companies.
   1 chemical impregnating company.
   1 chemical maintenance company.
   1 chemical depot company.

(*f*) *Ordnance Department.*

1. For the supply and maintenance of ordnance matériel, including ammunition.
2. Army ordnance units include—
   1 maintenance battalion, consisting of two medium and one heavy maintenance companies.
   2 ammunition battalions, consisting of six companies each.
   1 depot company.

(*g*) *Quartermaster Corps.*

1. For the operation of the general army motor transport, and for the maintenance of all general motor transport in the army; to provide bathing and laundry facilities; and for quartermaster supply.
2. Army quartermaster units include—
   1 regiment, truck.
   1 company, car.
   3 battalions, light maintenance.
   1 battalion, sterilization and bath.
   6 battalions, service.
   1 battalion, gasoline supply.
   1 company, depot (motor transport).
   1 company, depot (supply).

(*h*) *Medical Department.*

1. For the medical service of army troops, and for the evacuation of all subordinate echelons.
2. Army medical units include—
   3 medical regiments.
   10 evacuation hospitals.
   4 surgical hospitals.
   1 convalescent hospital.
   1 veterinary company, separate.
   1 medical laboratory.
   1 supply depot.

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(*i*) *Military police.*—One military police battalion to control such parts of the army area as are not controlled by the military police of subordinate echelons, and to relieve subordinate echelons of their prisoners of war.

(*j*) *Infantry antitank.*—Three antitank battalions.

(*k*) *Headquarters company, field army.*

(4) *Additional army troops.*—Additional troops of any or all arms and services may be assigned from GHQ reserve. This is almost invariably the practice in the case of Field Artillery, as it will be noted in (3) above, that no field artillery units have been provided. Additional army troops are provided as the mission of the army and the situation indicates, and, when provided, they are controlled by their particular arm or service section in army headquarters.

(5) *Corps.*—To the army may be assigned any number of corps greater than one. The type army, used as a basis of organization and for purposes of instruction, is one of three corps, but this must not be construed as fixing the number of corps in an army.

(6) *Divisions.*—Any number of divisions, greater than three, may be assigned to an army. The type army is one of nine divisions—three corps of three divisions each. The army commander assigns divisions to the corps and relieves them therefrom. He may assign all his divisions to corps, or he may retain some directly under his own control without corps organization.

■ 151. ADMINISTRATIVE RESPONSIBILITY OF ARMY.—*a. General.*—The army has full administrative responsibility, including that of supply and evacuation, for all of its component units. It is the next administrative echelon above the division, and it deals directly with divisions in all administrative matters.

b. Personnel.—The army is responsible for all matters affecting the strength, morale, and mobility of its troops. It maintains a relacement depot, or depots, from which it fills the requisitions of its subordinate elements. The strength of replacement depots is maintained at established levels by periodic requisitions on the theater of operations. Replacements are furnished directly to divisions, for units of divisions; to corps, for corps troops; and to units, for army troops. For the responsibility of corps in the allocation of replacements, see paragraph 134*b*.

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c. Supply.—The army is responsible for all classes of supplies, furnished by all arms and services, for its component elements. Each supply arm and service represented in the army maintains one or more depots. The army commander determines the levels of stockage to be maintained in army supply depots. The standard unit of measure of stockages is a day of supply. For a definition of a day of supply see FM 8–55. Levels are maintained in army depots by drawing upon depots in the theater of operations, either by requisition or against established credits. Consolidated requisitions are submitted to the army directly by divisions, for their subordinate elements; by corps, for corps troops; and by units, for army troops. Each such requisition is limited to the supplies furnished by one arm or service, and may further be restricted to one class of supplies. Supplies are distributed through the same channels—delivery ordinarily being made at army depots or railheads. For the responsibility of corps in the allocation of certain supplies, see paragraph 134*c*.

d. Evacuation.—See section IV.

■ 152. MISSIONS OF ARMY MEDICAL SERVICE.—The basic missions of army medical service are to—

a. Relieve corps and division medical services of continued care and treatment of their sick and injured in such a manner that their own organic medical services retain full mobility.

b. Furnish direct medical support to the unit medical services of army troops operating outside the zones of responsibility of corps and division medical services.

c. Collect into army installations, all evacuees in the army area, there to sort them, continue their care and treatment, and prepare such as require it for further evacuation.

d. Reinforce the medical services of divisions in situations wherein they require greater medical means than are organically provided them.

e. Institute and supervise, through proper channels, all practicable measures that can be directed toward the conservation of the physical fitness of the able-bodied.

f. Discharge all functions comparable to the foregoing in connection with the animals of the army.

g. Procure for and distribute to all elements of the army, the items of supply furnished by the Medical Department.

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■ 153. GENERAL ORGANIZATION OF MEDICAL SERVICE OF ARMY.—The medical service of the army is organized into two echelons:

a. The *attached medical personnel* comprising the medical detachments of the units of army troops.

b. The *army medical service* which, in turn, is composed of—

(1) The *medical section of army headquarters*, which includes the army surgeon and his commissioned and enlisted assistants, through which he exercises both his command and staff functions.

(2) *Army medical units*, consisting of those units enumerated in paragraph 150*b*(3)(*h*).

SECTION II

THE ARMY SURGEON

■ 154. GENERAL.—*a. Selection.*—The army surgeon is specially selected and appointed to his position. He should be senior to all other medical officers of army troops, but it is not necessary that he be senior to corps and divisions surgeons. (See FM 8–55.)

b. Status.—The army surgeon is a special staff officer of the army commander, and he also commands certain medical troops. (See *c* and *d* below.)

c. Command responsibilities.—The army surgeon commands all medical units in the army that are not assigned or attached to a subordinate element. He is not, however, assigned to a tactical unit, but is accounted for on the returns of the medical section of army headquarters. (See par. 157.)

d. Staff responsibilities.—See FM 8–55.

■ 155. RELATIONS WITH SURGEONS OF CORPS AND DIVISIONS.—*a. General.*—The relationship of the army surgeon with the surgeons of lower echelons will depend, in large measure, upon the policies of the army commander. In all cases, however, the army surgeon directly supervises all medical service for which the army commander is responsible, and this function requires that he exercise full authority over the technical, as distinguished from the command, aspects of the medical service of lower echelons.

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b. In preventive medicine.—Policies directed at the prevention and control of disease and injury are command decisions. However, the army surgeon must coordinate and direct the technical activities of this nature which are undertaken in compliance with the policies or specific instructions of the army commander. For example, he may prescribe laboratory methods, criteria for diagnosis, and methods of immunization, but he may not, of his own authority, prescribe measures which involve command responsibility, such as quarantine.

c. In treatment of sick and injured.—The army surgeon may prescribe methods of treatment and of preparation of casualties for evacuation to be followed in lower echelons, such as the use or avoidance of certain therapeutic agents, appliances for the means of fixation of fractures, and manner of moving certain classes of casualties. He may define the nontransportables to be retained in surgical or other types of hospitals.

d. In evacuation.—While, in strict procedure, arrangements for evacuation are made through command channels—ordinarily by the G–4's of the interested echelons—the details normally are arranged between the army surgeon and the surgeons of lower echelons. This requires close liaison during periods of active operations. (See par. 178*f*(1)(*d*).)

■ 156. RELATIONS WITH UNIT SURGEONS OF ARMY TROOPS.—The army surgeon exercises technical supervision, but no command control, over the surgeons of units of army troops.

■ 157. RELATIONS WITH COMMANDERS OF ARMY MEDICAL UNITS.—The army surgeon is the immediate superior of each commander of an army medical unit. Each such unit, however, is autonomous in its internal administration and the army surgeon exercises his control through unit commanders. All orders and instructions from a higher to a subordinate unit are given to the commander thereof, and all orders and instructions for any element or elements of a subordinate unit emanate from the immediate commander of such unit. By this means alone are authority and responsibility definitely fixed and the channels of command definitely established.

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■ 158. RELATIONS WITH GENERAL AND SPECIAL STAFF OF ARMY.—See FM 8–55.

■ 159. RELATIONS WITH REGULATING OFFICER.—The regulating officer is the direct representative of the commander of the theater of operations and is responsible only to him. One of the staff assistants of the regulating officer is an officer of the medical corps called the medical regulator, who is responsible for the coordination of evacuation. While the official channel of communication between the army surgeon and the regulating officer is through the army commander, it is almost essential that there be close, cooperative relations between the army surgeon and the medical regulator. The army surgeon should keep the latter informed of the numbers and location of casualties awaiting evacuation, and pass on to him such information of anticipated developments in the medical situation as is permissible. The medical regulator should be the informal contact of the army surgeon with the regulating station in matters of medical supply as well as of evacuation, for although the medical regulator is not concerned with the forwarding of supplies, being on the ground he may be able to expedite the shipment of needed medical supplies and, in an emergency, forward them on hospital trains.

■ 160. RELATIONS WITH CHIEF SURGEON, THEATER OF OPERATIONS.—The relations of the army surgeon with the chief surgeon, theater of operations, are similar to the relations of the division surgeon with the army surgeon (see par. 155). There must be close liaison between the two, with the army surgeon keeping the chief surgeon fully informed of the medical situation in the army, but there are no direct command relations between them. When a communications zone is established, most of the contacts of the army surgeon with the medical service of the theater will be with the surgeon, communications zone.

■ 161. MEDICAL SECTION OF ARMY HEADQUARTERS.—*a. Composition.*—The medical section of army headquarters consists of the army surgeon, his commissioned assistants, and a small enlisted clerical and administrative detachment.

b. Functions.—To elaborate the details, and to supervise the function of the plans and orders of the army surgeon;

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advise the army surgeon, particularly in specialized technical matters; make such inspections as the army surgeon directs; collect and compile information for the army surgeon; relieve the army surgeon of the burden of routine administration; and assist the army surgeon in any other way he may direct.

c. Organization.—No internal organization of the medical section of army headquarters is prescribed, nor can any rigid rule be laid down that will meet the requirements of all situations in which an army may find itself. However, the major functions of the army surgeon should be reflected in any organization which he adopts for his office. The relative importance of these functions may vary with the location of the theater of operations, the mission of the army, and other factors. These factors should determine, in each case, the exact organization and the distribution of the personnel among the subdivisions of the medical section of army headquarters. The following outline is intended only as a general guide, which may be expected to satisfy the requirements of the average situation.

(1) *Administrative subsection.*—To be headed by the executive officer. It may be charged with all routine administration of a general nature, with personnel administration, with all other matters which do not fall within the scope of the responsibilities of another subsection, and with the coordination of the activities of the other subsections.

(2) *Operations and training subsection.*—To be headed by a medical officer specially qualified in the military aspects of medical service. Under average conditions this will be the largest of the subsections since, because of interrelationships, it is preferable to group several of the functions of the army surgeon under one of his principal assistants rather than to divide them among independent operating departments. Furthermore, such an organization is more flexible and more economical of personnel, since operations and training rarely are of equal importance at the same time. The functions of this subsection should include—

(*a*) Training, both of medical units, and of all units in hygiene and first aid; training policies, programs, and inspections.

(*b*) Employment of army medical units; location of army medical installations; assignment of medical tasks; alloca-

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tion of reinforcements to lower echelons; movements of medical units.

(*c*) Evacuation, both of lower echelons by the army medical service and of army installations by higher echelons; evacuation policies.

(*d*) Hospitalization, policies governing the care and treatment of the sick and injured; utilization of existing structures and facilities.

(*e*) Consultants. Because the functions of the consultants assigned to the medical section of army headquarters are largely associated with the care, treatment, and evacuation of the sick and injured, and because experience has shown that it is essential that the activities of the several consultants be coordinated and that their combined activities be harmonized with the military situation, it is preferable that they be assigned to this subsection. Their services, however, must be made available to all other subsections.

(3) *Preventive medicine subsection.*—To be headed by the army medical inspector. All matters pertaining to the prevention and control of disease and injury; supervision of the army medical laboratory.

(4) *Dental subsection.*—Headed by the army dental surgeon; all matters pertaining to dental service.

(5) *Veterinary subsection.*—Headed by the army veterinarian; all matters pertaining to veterinary service.

(6) *Supply subsection.*—To be headed by an officer of the Medical Department specially qualified in supply, but who is *not* the army medical supply officer; all matters pertaining to finance and medical supply, and to all supply for the medical section of army headquarters; supervision of army medical depots; credits in theater depots; supply policies. This is a staff subsection, however, and not an operating agency in supply. (See also FM 8–55.)

(7) *Other subsections.*—The injection of new factors into the medical problem may indicate the creation of additional subsections, either to supervise new functions or to devote more specific attention to old functions, previously allocated to other subsections, which have assumed increased importance. Some examples are a civil affairs subsection to supervise all medical activities among the civil population of occupied territory; a hospitalization subsection, if definitive hospitalization becomes necessary; and a personnel subsec-

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tion, if personnel problems assume sufficient importance to warrant their separation from general administration.

SECTION III

ARMY MEDICAL UNITS

■ 162. CHAIN OF COMMAND.—The chain of command of every army medical unit is from the army commander to the army surgeon to the commander of the army medical unit.

■ 163. SUPPLY.—There is a unit supply officer on the staff of the commander of each larger administrative unit, such as a medical regiment or separate battalion, and a mobile hospital. The unit supply officer, governed by decisions or policies of the unit commander, consolidates the requirements of subordinate elements into unit requisitions upon proper army depots, which requisitions normally are forwarded through command channels. Upon receipt of the supplies, the unit supply officer distributes them in accordance with the requirements. He is the only accountable officer in the unit, the subordinate element commanders who receive the supplies being responsible only, and he maintains no reserve stocks other than a small rolling reserve of medical supplies.

■ 164. COLLECTING UNITS.—*a. Organization.*—Collecting units may include ambulance elements, or they may be composed exclusively of collecting station and bearer elements. Basic collecting units, such as companies, may be incorporated in composite larger administrative units, such as battalions or regiments, or the larger administrative units may be composed exclusively of collecting elements with necessary service elements. (For details see FM 8–5.)

b. Employment.—(1) *In other than combat situations.*—When not engaged in combat, collecting units (except ambulance elements (see par. 165*b*)) may be employed upon interior guard duty, and in the supervision of the sanitation of such portions of the army area as have not been allocated, for sanitary control, to subordinate echelons. Collecting units are not labor units, and their employment in sanitation is limited to instruction and demonstration; to the supervision of the operation of sanitary appliances and installations, such as incinerators, garbage disposal plants, etc.; sanitary surveys; and to furnishing assistance to the medical

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inspector. Employment of collecting units in other than combat must not be allowed to interfere with combat training and readiness for action.

(2) *In combat.*—(*a*) *In support of army troops.*—Army troops engaged within corps or division areas ordinarily will be supported by the local medical service. It will be an unusual situation when ambulances cannot evacuate directly the aid stations of army units in rear areas. For this reason, collecting units rarely will be used in direct support of army troops operating in rear areas.

(*b*) *To reinforce subordinate echelons.*—See paragraph 182.

c. Transport.—Collecting units have sufficient transport to move all of their matériel and part of their personnel. The remainder of the personnel normally is transported by ambulance units.

■ 165. AMBULANCE UNITS.—*a. Organization.*—Ambulance units may consist of platoons within collecting companies, or of companies which are incorporated either in composite medical units, or into larger administrative units composed exclusively of ambulance companies and service elements. (For details see FM 8–5.)

b. Employment.—(1) *General.*—Army ambulance elements routinely provide ambulance service for—

(*a*) Collection of the sick and injured from the aid stations and dispensaries of army troops.

(*b*) Evacuation of army clearing stations, and the local ambulance service that is needed in the evacuation of army mobile hospitals, such as for movements of evacuees from the hospital to the hospital train.

(*c*) Evacuation of the clearing stations of subordinate echelons.

(2) *Allotment of tasks.*—Insofar as practicable, tactical unity should be preserved in the allotment of tasks to ambulance units in order to fix responsibility and insure proper supervision. Two or more tasks may be given to a battalion which it, in turn, should distribute among its companies. A company may allot a task, or a prescribed part of a task, to a platoon or to a section.

(3) *Methods of operation.*—In the collection of casualties from the aid stations and dispensaries of army troops, ambulances ordinarily are operated as single vehicles, or in small

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groups if more than one is required at a time. In the evacuation of division, corps, and army medical installations, however, it is customary to operate ambulances in convoys.

(4) *Attachment to other army medical elements.*—Ambulance elements may be attached to other elements, either to constitute a composite detachment of medical troops for a special purpose, or to assist another medical element in performing a mission, such as the attachment of ambulances to an evacuation hospital to assist in loading hospital trains.

(5) *To reinforce subordinate echelons.*—See paragraph 182.

c. Transport.—Ambulance units have sufficient organic transport to move their personnel and matériel and can, in addition, transport the bulk of the personnel of a comparable collecting unit.

■ 166. CLEARING UNITS.—*a. Organization.*—Army clearing companies may be incorporated into composite medical battalions or regiments, or may be organized into larger administrative units composed exclusively of clearing companies with the necessary service elements. The basic tactical unit is the clearing company. Each company is self-sustaining, and the functions of larger units are limited to administration, training, and the control of clearing stations operated by two or more companies.

b. Functions.—Army clearing companies may be employed to operate clearing stations in support of army troops; reinforce the medical services of subordinate echelons; and, in emergencies, to substitute for surgical and evacuation hospitals.

c. Army clearing stations.—(1) *Location.*—The primary consideration in the location of an army clearing station is convenience to the units that it serves. The number of army clearing stations required will depend upon the distribution of army troops. Under ordinary circumstances, all dispensaries and aid stations of army troops should be within 10 miles of an army clearing station. Ordinarily these stations will be located in that part of the army area that lies in rear of corps rear boundaries, but the situation and distribution of army troops may indicate locations within an area allocated to a corps.

(2) *Site.*—Distance from the front makes protection from artillery fire of relatively minor importance in most situa-

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tions; otherwise, the requirements in site are the same as those for a division clearing station. (See pars. 61 to 71, incl.) The large extent of the army area will usually include a number of suitable locations from which choices can be made, thus permitting local facilities to exercise considerable weight in the selections. Because of this, tentage rarely will be used.

(3) *Organization.*—Each army clearing station may be operated by the clearing company, or two or more companies may be united under one command to operate one clearing station. Additional companies may be added to a station at any time.

(4) *Control.*—Regardless of location, all army clearing stations are controlled by the army surgeon. This control may be direct, or it may be exercised through an intermediate medical commander.

(5) *Operations.*—(*a*) *Source of patients.*—Army clearing stations admit patients from dispensaries and aid stations of units of army troops for which the army medical service is responsible, and receive others by direct admission from the vicinity.

(*b*) *Technical functions.*—To sort all patients admitted, returning to duty such as are fit; to retain for definitive treatment such as fall within the evacuation policy; and to prepare all other patients for further evacuation.

(*c*) *Disposition of patients.*—Patients fit for duty are disposed of as follows:

1. By return to their organization whenever this is feasible.
2. By return to duty in an army replacement battalion of casuals separated from their organizations.
3. Patients requiring no further active treatment, but who are not yet ready for full duty, are transferred to an army convalescent hospital.
4. Patients requiring further treatment are evacuated by army ambulances to an evacuation hospital.

d. Transport.—Clearing units have sufficient organic transport to move their personnel and matériel.

e. Mobility.—A well-trained company will be able to establish station and be ready to receive patients within 3 hours of arrival at the site. It will require an average of 2 hours after all patients have been evacuated to close the station and pack and load the matériel.

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■ **167.** SURGICAL HOSPITALS.—*a. Organization.*—Each surgical hospital is an independent, self-supporting unit under the direct command of the army surgeon. They are rarely grouped, either for administration or operations.

b. Functions.—(1) Surgical hospitals are mobile units designed primarily to furnish, as far forward as practicable, facilities for major surgical procedures for a limited number of cases of serious injury, and to relieve division clearing stations of nontransportable casualties. Its facilities are reserved for—

(*a*) Cases in which immediate surgical intervention of considerably greater scope than first aid is necessary to save life or limb.

(*b*) Cases in which immediate movement to an evacuation hospital would gravely endanger life or limb.

(2) Surgical hospitals may be used in emergencies to substitute for evacuation hospitals.

(3) Detachments of technical personnel of surgical hospitals, such as operating teams, may be used to reinforce other medical units at station.

c. Employment.—(1) *Allocation.*—Corps plans set forth requirements for support and reinforcement by the army, including support by surgical hospitals. Surgical hospitals ordinarily are allocated in accordance with the requirements of the several corps, as approved by the army commander. As in the case of other administrative requirements (see par. 128), however, the allocation is made by the army directly to divisions rather than through the corps medical service.

(2) *Location.*—Whenever possible, surgical hospitals are established immediately adjacent the clearing station of the division which they support. This is to reduce to the minimum any delay in the transfer of serious cases and the facilities for effecting such transfer. They are equipped with tentage and require no more local facilities than a clearing station.

(3) *Control.*—Regardless of their location in the area of a division or a corps, surgical hospitals normally operate directly under the control of the army surgeon, and the responsibility for patients admitted thereto passes from the lower echelon to the army. In special situations, their attachment to subordinate elements of the army may be indicated.

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d. Operations.—(1) *Source of patients.*—Surgical hospitals receive patients—

(*a*) From the clearing station of which they are in direct support.

(*b*) From other clearing stations conveniently located. In this case, the movement of the patient is a local responsibility and not an army responsibility.

(*c*) In emergencies, directly from aid and collecting stations. In such case the records of the patients must be cleared through the proper clearing station.

(2) *Technical functions* (see *b* above).—The facilities of a surgical hospital are inadequate for the care of any great proportion of the battle casualties of a division severely engaged, and admissions must be limited to cases urgently in need of these special facilities. Definitive treatment, as such, is not to be undertaken in a surgical hospital, although the emergency measures may have definitive value. Treatment of shock, control of stubborn hemorrhage, and the reconstitution of blood following hemorrhage are of the greatest importance. Fixation of fractures that are too complex to be handled in a clearing station is another function. But it must be clearly realized that treatment in a surgical hospital must be limited to emergency measures, regardless of their scope, if that hospital is to accomplish its mission. Measures not of immediate importance should be postponed until the patient reaches an evacuation hospital.

(3) *Disposition of patients.*—Since patients who will recover promptly rarely will be admitted to a surgical hospital, the great bulk of survivors are evacuated by army ambulances to an evacuation hospital as soon as their conditions permit. For obvious reasons the case fatality rate will be relatively high.

e. Closing surgical hospital.—Under ordinary circumstances a surgical hospital suspends admission of new cases when the clearing station it is supporting moves to a new location; and, if required, other surgical hospitals are established at the new location. Evacuation of a closed surgical hospital proceeds as rapidly as possible. Personnel and matériel may be, and should be, withdrawn piecemeal as the patient population decreases, if there is danger of the unit being caught in a fluctuation of the lines. However, so long as any nontransportables remain, personnel and matériel necessary for

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their care must remain in position, even though this may result in capture.

f. Transport.—No surgical hospital is entirely motorized, since its headquarters and hospitalization units have only sufficient transport for their internal economy. The mobile surgical unit contained in each surgical hospital, however, possesses sufficient integral transport for its own personnel and matériel. In some instances, this organic transport may consist of ordinary trucks; in others it may consist of special bus-type motor vehicles, in which are permanently installed the necessary functional elements of this unit.

g. Mobility.—The mobility of the mobile surgical unit is comparable to a clearing company. The headquarters and two hospitalization units require approximately the same time to open and close as does an evacuation hospital.

■ 168. EVACUATION HOSPITALS.—*a. Organization.*—Each evacuation hospital is an independent, self-supporting unit under the direct command of the army surgeon. However, two or three units frequently are grouped together at station to form one large hospital. In such cases it is usually preferable to place all units at station in the same location under one command (either under the senior unit commander or under an assistant of the army surgeon who is senior to all unit commanders at that station).

b. Functions.—Evacuation hospitals are mobile units designed to—

(1) Provide, as near the front as practicable, facilities for major medical and surgical procedures in the care and treatment of all casualties.

(2) Provide facilities for the concentration of evacuees in such numbers and at such locations that mass evacuation by common carrier can be undertaken economically.

(3) Provide opportunity and facilities for the beginning of definitive treatment as early as practicable.

(4) Continue the sorting of casualties, under conditions more favorable for observation, and to remove from the chain of evacuation such as are, or soon will be, fit for duty.

(5) Prepare evacuees for extended evacuation to general hospitals at some distance to the rear.

c. Employment.—(1) *Allocation.*—Evacuation hospitals normally are not allocated to subordinate echelons. They

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are usually echeloned laterally in order to reduce distances from flank units, and this echelonment may correspond to the tactical or territorial organization of the army, that is, one or more evacuation hospitals may be established in rear of each corps or independent division, but such arrangement should not be regarded as a rule or a principle. It must always be remembered that the corps is not an administrative echelon—army evacuating divisions without regard to any tactical control by corps—and that flexibility is an essential characteristic of medical service. For these reasons, corps and division boundaries must not be considered as limiting the sources of patients for evacuation hospitals.

(2) *Location.*—(*a*) Whenever possible, evacuation hospitals should be located at established loading points on common carriers such as railroads and canals or other waterways. This is not always possible, and the next best location is on an improved highway where further evacuation can be undertaken with motor buses and heavy de luxe ambulances.

(*b*) When further evacuation is to be by rail, siding capacity sufficient for a hospital train is essential if the trackage is to be used for any other traffic. Loading platforms of proper height are highly desirable. Comparable dock facilities are to be sought when evacuation is to be by water.

(*c*) The equipment of an evacuation hospital includes tentage, but, if suitable existing buildings are available, they are usually preferable.

(*d*) With respect to the front line, the location of an evacuation hospital depends upon the situation, the road net, and the rail net. No evacuation hospital should be located within the range of enemy artillery, and all should be near enough the front that casualties can be evacuated promptly from divisions and without undue discomfort or danger. Good motor roads increase the permissible distance from the front; poor ones decrease it. If there is danger of enemy penetration, the distance should be increased. While there is no rule, under ordinary circumstances evacuation hospitals should be located somewhere between 12 and 30 miles behind the front line.

(3) *Grouping.*—The general procedure is that the number of locations of evacuation hospitals should be kept to

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the minimum consistent with effective support of the medical services of subordinate echelons. Adequate capacity is provided by grouping two or more evacuation hospital units at one station. The individual units in such a group may be specialized if the situation warrants, each unit admitting designated types of cases. Such specialization, however, requires additional sorting of cases prior to admission, since division clearing stations cannot be expected to sort their evacuees in such a manner. Under normal circumstances, it is preferable to place all units in such a group under one command. (See *a* above.)

(4) *Control.*—Evacuation hospitals are under the control of the army surgeon—exercised directly over the unit commander when the unit is operating independently, and through the group commander when groups are formed.

d. Operations.—(1) *Source of patients.*—Evacuation hospitals receive patients—

(*a*) From the clearing stations of divisions, corps, and army; usually via army ambulances.

(*b*) From surgical hospitals; usually via army ambulances.

(*c*) From dispensaries and aid stations of units in the vicinity; usually by army or unit ambulances.

(*d*) By direct admission.

(2) *Technical functions* (see *b* above).—While definitive treatment should be instituted in evacuation hospitals, it must be remembered that these are mobile units and that no treatment should be undertaken therein which will immobilize the patient for a considerable period unless it is absolutely necessary. Involved procedures, requiring elaborate after-treatment, should be postponed whenever possible until the patient reaches a general hospital. Evacuation by air of selected cases will aid in solving this problem.

(3) *Disposition of patients.*—Evacuation hospitals dispose of their patients by—

(*a*) Returning to duty such as are fit for duty, direct to their organizations when feasible, or to an army replacement unit when contact with the organization has been lost.

(*b*) Transfer to a convalescent hospital of such cases as require no further active treatment but are not yet fit for duty.

(*c*) Further evacuation of all others to a general hospital to the rear. (See FM 100–10.)

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e. Closing evacuation hospital.—The first step in the closing of an evacuation hospital is the suspension of admission of new cases. Evacuation is continued and, as the patient population decreases, wards and departments are closed and the equipment packed. Adequate personnel and matériel are kept in service until all patients have been disposed of. If more than one unit is at station in one location, one unit may be closed rapidly by the transfer of patients to another. In such case there may be an exchange of equipment so that patients do not have to be moved.

f. Transport.—The organic transport of evacuation hospitals is insufficient to move their personnel and matériel. They are ordinarily moved by common carrier to their destination, and their matériel requires so much time to load that, whenever possible, evacuation hospitals in reserve are kept loaded on trains or other carriers, in readiness to move upon short notice. The army is responsible for their movement.

g. Mobility.—After arrival at its location, an evacuation hospital should be unloaded and set up ready to receive patients in from 4 to 6 hours. After evacuation, it should be closed, packed, and loaded in from 8 to 12 hours.

■ 169. CONVALESCENT HOSPITAL.—*a. Organization.*—One convalescent hospital is included in the medical service of a type army. It is so organized, however, that its capacity may be expanded, without serious difficulty, to meet unusual requirements.

b. Function.—The convalescent hospital is a mobile unit designed to care for such short-duration cases as require no further active treatment but that are not yet ready for duty. It is an expansion tank for the evacuation policy of the army.

c. Employment.—(1) *Location.*—It is usually located centrally but well to the rear of the army area, in a place that is convenient both to evacuation hospitals and to army replacement units. It may even be located at a distance in rear of the army rear boundary, although remaining under army control.

(2) *Control.*—The convalescent hospital is under the direct control of the army surgeon.

d. Operations.—(1) *Source of patients.*—The convalescent hospital receives patients—

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(*a*) From evacuation hospitals; usually via army ambulances.

(*b*) From army clearing stations; usually via army ambulances.

(*c*) Directly from units in the vicinity, especially from replacement units with which it should operate in close liaison.

(2) *Techincal functions.*—Except in the case of active cases admitted from local sources, its technical functions are limited to the rapid restoration of convalescent patients to full physical fitness.

(3) *Disposition of patients.*—The convalescent hospital disposes of its patients by—

(*a*) Returning to duty such as are fit for duty, usually to an army replacement unit, although local admissions may be returned directly to their organizations.

(*b*) Returning to an evacuation hospital those who relapse and require further active treatment.

e. Closing convalescent hospital.—The convalescent hospital normally remains active throughout the campaign. When it is necessary to move it, however, it is moved by echelon. A proportion of the personnel and matériel are withdrawn from service and moved to the new location to establish the new hospital. When the new hospital is ready to receive patients, the old one suspends admissions. The movement proceeds gradually from the old to the new location as the patient population decreases in the former and increases in the latter.

f. Transport.—The organic transport of a convalescent hospital is insufficient to move its personnel and matériel. It is ordinarily moved by common carrier to a point convenient to its location, and thence by motor. The army is responsible for its movement.

g. Mobility.—The convalencent hospital has approximately the mobility of an evacuation hospital.

■ 170. MEDICAL LABORATORY.—*a. General.*—The medical laboratory is a mobile unit designed to provide the army medical service with facilities that are immediately and constantly available for laboratory examinations and investigations. It is organized into one stationary and three mobile laboratory sections.

b. Control.—The medical laboratory is under the direct control of the army surgeon. However, for reasons that ap-

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pear in *c*(2) below, it usually will be preferable for the army surgeon to place it under the immediate control of the army medical inspector.

c. Employment.—(1) *Location.*—The stationary section is located well to the rear of the army area where it will not become involved in minor movements and where it is readily accessible. While it can establish and operate in any location, an existing civil laboratory is highly desirable, such as that of a school, a public health agency, or a commercial organization. The mobile sections are designed to be sent into corps or division areas and are especially useful in epidemiological investigations. When not so employed, the mobile sections remain with the stationary section.

(2) *Technical functions.*—Because of the limited capacity and the location of the medical laboratory, it is not contemplated that it will engage in routine clinical examinations required by the several army hospital units, as these hospital units all include an organic laboratory section for this function. However, special examinations may be referred by army hospitals, and the army medical laboratory routinely prepares special reagents for distribution to the clinical laboratory sections of the hospitals. Its principal technical functions are associated with preventive medicine such as the examination of food and water and epidemiological investigations.

■ 171. MEDICAL DEPOT.—*a. Organization.*—The army medical depot is a mobile unit organized into three subordinate sections, each of which may, when indicated, operate an independent depot.

b. Functions.—This unit is the operating agency of the medical supply of the army. It procures, stores, and issues all medical supplies required by the army.

c. Employment.—(1) *Location.*—Depending upon the situation and the rail and road net, the army medical depot may be operated in one, two, or three different locations. (See (3) below.) Each location must be on a line of communication to the rear—rail, water, or highway—and should be readily accessible to all subordinate elements to be served. Existing structures should be fully utilized; preferably warehouses on railroad sidings, docks, or improved highways. Such sites should be far enough to the rear to be safe from enemy ground action without being inaccessible.

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(2) *Control.*—Army medical depots are controlled by the army surgeon, ordinarily through the supply subsection of his office.

(3) *Echelonment.*—In the usual situation, when it is necessary to establish more than one army medical depot, they are echeloned laterally for convenience to units served. In special situations, it may be advisable to echelon them in depth, with one or two advance depots close behind divisions and another well to the rear. Stockages of the advance depots will be determined by the situation, but will invariably be less than that of the rear depot, and will be maintained by the rear depot at prescribed levels.

d. Operations.—(1) *Procurement.*—The depot commander procures medical supplies from the next higher medical supply echelon, ordinarily the communications zone, by one of three methods:

(*a*) By formal requisition, which must be approved by the higher echelon.

(*b*) In emergencies, by informal request, which must also receive the approval of the higher echelon.

(*c*) By drawing against credits established in its depots by the higher echelon. Requisitions against credits require no individual approval. When exhausted, credits must either be renewed or other means of supply substituted.

(2) *Storage.*—Depot stocks are maintained at prescribed levels so that the requirements of corps and divisions may be met promptly. Subordinate medical echelons maintain only a small rolling reserve of medical supplies and are unable to tolerate the delay incidental to procuring their requirements from the communications zone.

(3) *Issue.*—Issue is made at the medical depot, either directly to subordinate supply officers who bring their own transport, or by shipment by common carrier to the railheads of divisions and corps.

e. Transport.—The organic transport of medical depot units is insufficient to move its personnel and matériel. They are moved by common carrier, if practicable, and if their movement by motor is necessary, the transport must be obtained from other sources.

■ 172. VETERINARY COMPANY, SEPARATE.—*a. Organization.*—The veterinary company, separate, is a mobile unit organized

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into a headquarters and five evacuation platoons, each of which is capable of functioning alone.

b. Functions.—This unit is to veterinary service what army ambulances are to medical service. It is primarily an evacuation unit designed to conduct animal evacuees from subordinate echelons to veterinary evacuation hospitals, veterinary convalescent hospitals, army remount depots, or to railroads for evacuation to veterinary installations in the communications zone.

c. Employment.—(1) *Control.*—Depending upon the nature of the tasks, the company may be employed as a pool of means of evacuation, or each platoon may be assigned to operate one chain of veterinary evacuation. Insofar as is practicable, tactical unity should be preserved in the allotment of tasks.

(2) *Operations.*—When divisions are provided with a second echelon of veterinary service, as in the case of cavalry divisions (horse), elements of the veterinary company, separate, take over the animal evacuees at the division veterinary clearing station. Otherwise, evacuees must be taken over at unit veterinary aid stations. The veterinary company, separate, conducts such animal evacuees, by means of lead lines, and veterinary ambulances, to the rear, disposing of them as set forth in *b* above.

(3) *As reinforcements to subordinate echelons.*—Platoons may be attached to subordinate echelons when their operation by the army veterinary service is impracticable, or when reinforcement of the veterinary service of subordinate echelons is indicated.

d. Transport.—The veterinary company, separate, is equipped with sufficient organic transport to move its personnel and matériel.

■ 173. VETERINARY EVACUATION HOSPITALS.—*a. General.*—Veterinary evacuation hospitals are units of the GHQ reserve and are not included organically in the army medical service. However, when the animal strength of the army justifies it, they may be attached to the army in the numbers required; and in this event, control passes to the army medical service.

b. Organization and functions.—Veterinary evacuation hospitals are mobile units designed to relieve lower echelons of their animal casualties and to treat, definitively, short-duration cases.

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c. Employment.—(1) *Control.*—When attached to the army, veterinary evacuation hospitals are under the direct control of the army veterinarian who is, in turn, responsible to the army surgeon for their operation.

(2) *Location.*—They are located as far forward in the army area as the situation will permit, and with regard to the centers of animal population and to the operations of animal units. If possible, they should be located on a railroad with siding capacity sufficient for one stock train and near enough to a remount depot that stock trains bringing remounts forward may be used to evacuate the animal casualties. An abundant water supply is essential, and shade and pasturage are desirable.

(3) *Allocation.*—The normal allotment of veterinary evacuation hospitals is one per corps and per cavalry division.

d. Operations.—(1) *Source of patients.*—Veterinary evacuation hospitals receive patients—

(*a*) From the veterinary clearing stations of divisions and corps, when such are in operation.

(*b*) From the veterinary aid stations of such units as are not supported by division veterinary services.

(*c*) From the veterinary dispensaries of army remount depots.

(*d*) By direct admission from units in the vicinity.

(2) *Technical functions.*—In the chain of animal evacuation, the veterinary evacuation hospital occupies a location midway between those of a surgical and an evacuation hospital in the chain of evacuation of human casualties. An economic limit is reached in the care and treatment of animal casualties beyond which extended evacuation is not justifiable until the cost of remounts rises accordingly. For this reason, the functions of a veterinary evacuation hospital contemplate more definitive treatment with fewer evacuations than is practiced in its counterpart for human casualties.

(3) *Disposition of patients.*—The veterinary evacuation hospital disposes of its patients by—

(*a*) Return to duty with their organizations, when such disposition is feasible.

(*b*) Return to duty in an army remount depot.

(*c*) Transfer to the army veterinary convalescent hospital of such as require no further active treatment but which are not yet ready for full duty.

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(*d*) Evacuation to a veterinary general hospital farther to the rear.

(*e*) Destruction of such animals as are not economically salvageable.

e. Closing.—(1) When services of a hospital can be suspended, admissions are discontinued and the patients on hand are evacuated as rapidly as possible. As the matériel is released, it is loaded on the organic trucks of the unit.

(2) When a hospital must continue to function during movement, a detachment is withdrawn, with a portion of the matériel, to open station at the new location. As soon as patients can be received at the new location, admissions are suspended at the old and the patients on hand are disposed of as rapidly as possible. A greater proportion of salvageable animal casualties are ambulant than is the case with human casualties, and some patients may be transferred from the old to the new location. Personnel and matériel are moved by echelon as the situation indicates.

f. Transport.—The unit is equipped with sufficient organic transport to move its personnel and matériel.

■ **174. VETERINARY CONVALESCENT HOSPITAL.**—*a. General.*—The status of this unit is identical with that of the veterinary evacuation hospital. (See par. 173*a*.)

b. Organization and functions.—The veterinary convalescent hospital is a mobile unit designed to furnish care for such salvageable animals as require no further active treatment in a veterinary hospital but that are not yet ready for full duty.

c. Employment.—(1) *Control.*—The same as that of a veterinary evacuation hospital. (See par. 173*c*(1).)

(2) *Location.*—The veterinary convalescent hospital is conveniently located, both with regard to the veterinary evacuation hospitals and to the army remount depot. Rail facilities are not so essential as in the case of the veterinary evacuation hospital, but other desiderata in the selection of a site are the same for both installations.

d. Operations.—(1) *Source of patients.*—The veterinary convalescent hospital receives patients from—

(*a*) Veterinary evacuation hospitals.

(*b*) Veterinary dispensary of the army remount depot.

(*c*) Veterinary dispensaries of units in the vicinity.

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(2) *Technical functions.*—The technical functions of a veterinary convalescent hospital include—

(*a*) Care and treatment of convalescent animals that require little active treatment.

(*b*) Careful sorting of patients, with destruction of such as either will never be fit for full duty or whose ultimate recovery will be delayed beyond the economical limit of care. The final results of treatment ordinarily can be determined with greater accuracy in this installation than in a veterinary evacuation hospital.

(3) *Disposition of patients.*—A veterinary convalescent hospital disposes of its patients by—

(*a*) Return to duty with their organizations, when such disposition is feasible.

(*b*) Return to duty with the army remount depot.

(*c*) Return for further treatment to a veterinary evacuation hospital.

(*d*) Destruction.

e. Closing veterinary convalescent hospital.—The same as in case of a veterinary evacuation hospital (see par. 173*e*).

f. Transport.—The organic transport of a veterinary convalescent hospital is insufficient to move its personnel and matériel. The army is responsible for its movement.

SECTION IV

MEDICAL OPERATIONS

■ 175. ARMY CHAINS OF EVACUATION.—*a. For evacuees of corps and divisions.*—The clearing stations of divisions and of corps are in the same echelon of evacuation so far as army medical service is concerned. The responsibility for evacuees passes from corps and divisions, when the evacuees are turned over at these stations to the army medical service. Such of the evacuees as are transportable are moved at once, normally to an evacuation hospital. Army ambulances, operated in convoys, are the usual transport, but in special situations other means of transport may be either necessary or desirable. If a surgical hospital is in direct support, nontransportables are transferred from the clearing station to it; but since surgical hospitals are operated under army control, the responsibility for such cases passes to the army just as in the

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case of evacuees. If no surgical hospital, or substitute therefor, is in support, nontransportables must remain in clearing stations until they may be moved safely, even though this immobilizes a portion of the unit. As soon as any nontransportables can be moved safely, they are placed in the same chain of evacuation as other evacuees, although they may be moved individually by special means.

b. For evacuees of units of army troops.—(1) Units of army troops operating within corps or division areas ordinarily will be supported by the medical service of such units, and their casualties will be placed in the chains of evacuation of such corps or divisions. If, for any reason, this is not desirable, such units as are organically equipped with ambulances may, when practicable, send their casualties to an army clearing station; but the army medical service ordinarily does not furnish direct support to army units operating within the zone of responsibility of a lower medical echelon.

(2) The army medical service, normally with its ambulances, collects the casualties in the dispensaries and aid stations of all small units in rear of corps rear boundaries, including elements of subordinate echelons that may be casually there, and transports them to an army clearing station. The evacuees of an army clearing station, for the most part, enter the army chain of evacuation and are taken to an evacuation hospital, although certain short-duration cases may be transferred directly to the army convalescent hospital. (See fig. 1.)

c. Rear termini of army chain of evacuation.—Evacuation hospitals normally are the rear termini of the army chain of evacuation. At these installations, the responsibility passes to the next higher echelon, usually the communications zone, which evacuates the evacuation hospitals by means of hospital trains, boats, or other bulk transport.

d. Veterinary evacuation.—Veterinary chains of evacuation in the army are comparable to those of human evacuation. Insofar as the army veterinary service is concerned, the forward termini are at unit veterinary aid stations when there is no second echelon of veterinary service, and at veterinary clearing stations when there is a second echelon. Rear termini are as set forth in paragraph 172*b*.

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■ 176. EVACUATION OF CORPS AND DIVISIONS.—*a. Arrangements.*—In strict procedure the arrangements for the evacuation of corps and divisions are instituted by the lower echelon and are effected through command channels. The details are usually worked out through direct medical channels. The arrangements should include an estimate of the number of casualties to be evacuated, the location of the clearing station, the hour when such evacuation should begin, and the schedule that will be followed, that is, whether subsequent convoys will arrive on a time schedule, or whether the army will send for evacuees only when request is made, or, as such an arrangement has come to be called, "evacuation on call."

b. Technique.—(1) *Receiving evacuees from corps and divisions.*—Army medical transport, under the command of a commissioned officer, is sent to the clearing station to be evacuated. The evacuation officer delivers the evacuees to the officer in charge of the convoy, and with them, a check list, in duplicate, upon which is entered the name, Army serial number, grade, and organization of each evacuee, together with the diagnosis and any other information essential to his identification, treatment or disposition. For a model of such a check list see appendix V. The officer in charge of the convoy receipts for such evacuees by signing the triplicate of the check list, which receipt is retained by the evacuation officer. The officer in charge of the convoy should check each evacuee against the check list as he is loaded, and insure that to each evacuee is securely attached a properly accomplished emergency medical tag (EMT). (See FM 8–45.)

(2) *Loading evacuees.*—The evacuation officer of the clearing station is responsible for the loading of evacuees on the army medical transport. He determines the position, sitting or prone, in which each evacuee shall ride.

(3) *Property exchange.*—The army medical convoy carries forward sufficient equipment to effect property exchange. The clearing station is responsible for the property exchange, which is usually checked by a noncommissioned officer.

(4) *Transfer of responsibility.*—Responsibility passes to the army when all evacuees have been loaded and receipt therefor has been signed by the officer in charge of the convoy.

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(5) *Care and treatment en route.*—It is a responsibility of the evacuation officer to inform the officer in charge of the convoy of any special attention that may be required by any evacuee en route, such as the adjustment of a splint, observation for secondary hemorrhage, or the administration of a narcotic or a stimulant, regardless of whether such information or warning appears on the check list or on the emergency medical tag of the individual evacuee. And it is a responsibility of the officer in charge of the convoy to see that proper investigations are made en route, although the measures to be taken are matters which he must decide in each case at the time.

(6) *Delivery of evacuees.*—Upon arrival of the convoy at the proper evacuation hospital, or other designated delivery point, the officer in charge delivers the evacuees to the admitting officer, who retains for his records the original copy of the check list, and who returns the duplicate copy, signed as a receipt, to the officer in charge of the convoy. The latter makes special reports of any deaths en route, but the dead are admitted and disposed of as any other evacuee, since the convoy unit is not an office of record. The admitting officer is responsible for the unloading of evacuees, and the officer in charge of the convoy is responsible for the property exchange.

c. Veterinary technique.—The general principles set forth in (5) and (6) above apply also to veterinary evacuation. Elements of the veterinary company (separate) perform functions comparable to those of army ambulances. Similar records are maintained, with modifications to adapt them to the requirements of animal evacuation.

■ 177. EVACUATION OF ARMY CLEARING STATIONS.—The general rules of the evacuation of army clearing stations are the same as in the cases of divisions and corps (see par. 176). Any differences in method arise out of the facts that army clearing stations are controlled by the army medical service, and that ordinarily they have fewer evacuees. Hence, arrangements for evacuation are made through medical channels and may be quite informal although by no means indefinite. Because of the fewer evacuees and the irregularity with which they accumulate, the customary arrangement will be for evacuation "on call."

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■ 178. PLANS AND OPERATIONS IN EVACUATION.—*a. Responsibility.*—All medical plans and operations are responsibilities of the army surgeon, which he cannot delegate to subordinates. However, the details ordinarily are too voluminous for him to arrange without assistance, and he must depend upon his assistants for the amplification and execution of his basic decisions. (See FM 8–55.)

b. Continuity of evacuation.—The only entirely new plan of a chain of evacuation will be the first one drawn for the concentration of the army. After this initial plan, each new one will be but a modification of an existing plan, and will necessarily be limited by the existing disposition of medical units, and by the necessity of maintaining medical service throughout the period of transition.

c. Subsections of army surgeon's office involved in planning.—All subsections of the army surgeon's office contribute to the development of the plan of the army chain of evacuation, but the bulk of the task will fall upon the operations and training subsection. The preventive medicine subsection is interested in the evacuation and hospitalization of cases of communicable disease—units in which they may be encountered, estimated numbers, and the isolation required. The dental subsection is interested in any special arrangements to be made for maxillo-facial injuries, and in the evacuation policy governing dental patients. The supply subsection is interested in the locations of army hospitals and in the estimated numbers and types of casualties. The veterinary subsection has its own problems of the chain of animal evacuation.

d. Development of plan.—The key to the plan of the army chain of evacuation is the disposition of the evacuation hospitals. Suitable locations ordinarily will be few in number, and all other considerations must be subordinated to the proper location of these units. The next most important consideration is the means of transporting evacuees. The type of transport required will depend upon the situation and the road net, and the amount, upon the number of evacuees and the time-distance of movement. Linear distance is only one factor in time-distance.

e. Disposition of evacuation hospitals.—(1) It is a most important principle that evacuation hospitals must be kept as mobile as is possible under the circumstances. This is

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achieved by closing, and loading when practicable, all units not required for the care of casualties and for which no need in the immediate future can be foreseen.

(2) When a change in the medical plan is necessary, the army surgeon can look only to his reserve evacuation hospitals for movement to new locations. Those at station are immobile until they can be evacuated and loaded for movement.

(3) What might might be termed a standard plan for a normal situation—without implying that it is a fixed rule—is to dispose of evacuation hospitals in groups of three each. When a change in disposition becomes necessary and all three are in operation, two are closed and moved immediately to the new group location, where only one is established initially, and the other held in reserve, still loaded if possible. As soon as the unit established in the new location is receiving patients, the unit in operation at the old location is closed, evacuated, and loaded. Its further disposition depends upon the situation—it may be moved at once to the new location, held in reserve elsewhere, or moved to and established in a third location if necessary. When a group of evacuation hospitals is placed in one location, individual units are established at station only as the need is foreseen; and one unit in each group being in reserve at all times will be a great source of comfort to the army surgeon.

(4) The so-called standard method of disposing of evacuation hospitals just outlined must be modified to meet the special requirements of any situation.

f. Transportation of evacuees.—(1) *Standard means.*—Army ambulances are the standard means of transporting evacuees within the army area.

(*a*) *Control of ambulances.*—The evacuation of clearing stations should be controlled by the operations and training subsection of the army surgeon's office, with either the chief of that subsection or one of his principal commissioned assistants in direct charge. For many reasons, among which is the necessity of coordinating this task with other phases of army medical service, this responsibility should not be delegated to the commander of an army medical unit.

(*b*) *Allocation of ambulances.*—All ambulances required for the evacuation of clearing stations should be placed in

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a pool controlled by the officer in charge of such evacuation. Insofar as is practicable, however, tactical unity should be preserved in this allocation.

(*c*) *Restriction of responsibility.*—The responsibility for the evacuation of a designated clearing station should be exclusive to a particular unit.

(*d*) *Liaison.*—Prompt and accurate information is essential. Whenever possible, wire communications should be established between the stations to be evacuated and the army surgeon's office. Equally certain communications should be maintained with the rear termini of the chain at evacuation hospitals. Regardless of the means of communication, a liaison agent from the army surgeon's office at each critical point will prove most helpful.

(*e*) *Operations.*—The officer in charge of evacuation coordinates tasks with means. He forms and dispatches convoys in accordance with demands. Upon completion of a mission, each convoy returns to the pool to await further missions.

(*f*) *Records.*—The officer in charge of evacuation maintains a log which shows the disposition of all ambulances at all times—mission, number in convoy, times of departure and return, distances traveled, and the numbers of evacuees transported. He also, from the check lists of convoy commanders, maintains a consolidated record of the numbers and classes (litter or sitting) of evacuees and their origin and disposition. He does not maintain individual records of evacuees. For form for these records see appendix VI.

(2) *Other means of transporting evacuees.*—In certain situations, the exclusive use of army ambulances in the evacuation of divisions and corps may be impracticable or even impossible, and other types of transport must be employed.

(*a*) *Other types of transport.*—Other types of transport that have been used are: railheads, both of standard and of narrow gage; cargo trucks, either used exclusively for the purpose or only on their return trips to the rear; airplanes, especially built as ambulances or standard transport planes; aerial cables or tramways; and animals and other beasts of burden equipped with cacolets, travois, or other special carriers.

(*b*) *Operations of other types of transport.*—The operation of any type of transport depends largely upon its char-

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acteristics and must be accordingly modified. The general principles of evacuation by ambulances are followed so long as they are applicable. In certain instances, such special types of transport may be turned over to the medical service for its exclusive use. However, in all cases where the control of such transport remains with an arm or another service, considerable coordination is required. In general, it will prove more efficient if instructions are issued by the army commander (G–4) defining the responsibilities and the authority of each branch involved.

g. Veterinary evacuation.—The procedures set forth above in connection with human evacuation apply, in general, to the evacuation of animals. These are—

(1) The army veterinarian is directly responsible to the army surgeon for plans and operations.

(2) Veterinary evacuation is continuous and problems of preventive veterinary medicine and of supply are involved.

(3) The key to the plan is the location of veterinary evacuation hospitals. However, since knotty problems in the transportation of evacuees and failing of economical solution can always be solved by the destruction of casualties, this aspect is of lesser importance than in human evacuation.

(4) Veterinary evacuation hospitals should be kept as mobile as circumstances will permit, and whenever possible, at least one should be held in reserve ready for movement. They are not, ordinarily, however, established in groups.

(5) Lead lines for the readily ambulant, and veterinary ambulances for others are the standard means of movement of animal casualties within the army area. Cargo trucks may also be used.

(6) The operations of the second and third echelons of veterinary service should not be confused. Third echelon service should be controlled by the veterinary subsection of the army surgeon's office. Second echelon service may be decentralized to the veterinary company (separate).

(7) Liaison is essential to prompt and effective evacuation.

(8) Complete records are maintained.

■ 179. MEDICAL SUPPORT OF ARMY TROOPS.—*a. Definition.*—The collection of casualties from the dispensaries and aid stations of units of army troops, and their removal to an army clearing station is not to be confused with the evacua-

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tion of clearing stations, even though both are functions of the army medical service. The former function is one of second echelon medical service—the first echelon being the unit medical service of attached medical personnel (see par. 129)—while the latter is one of third echelon medical service.

b. Responsibility.—The medical support of units of army troops is a responsibility of the army surgeon. However, to prevent duplication of effort, a standing operating procedure should ordinarily be established providing for this support to be rendered by local medical services for such army units as are located, or are operating within the areas of divisions or corps. The army medical service, in turn, should render this support to all units in the army area in rear of corps boundaries regardless of the tactical or administrative affiliations of such units.

c. Chain of evacuation.—In the usual case, the forward termini of this chain of evacuation are at the dispensaries and the aid stations of the units where the army medical service assumes the responsibility, and the rear termini are at army clearing stations.

d. Control.—In sharp distinction to the control of the third echelon of evacuation, it will usually be preferable to assign this task to a tactical unit, or a composite detachment of army medical troops. Control may be better, under certain conditions, if two or more chains of evacuation in the second echelon are established, with the zones of responsibility of each defined, and each chain assigned to a different army medical unit. The commanding officers of such units or detachments are then directly responsible to the army surgeon.

e. Installations.—Under normal conditions, army clearing stations are the only installations in the second echelon of evacuation in the army rear area. Collecting stations rarely will be established.

f. Operations.—The administrative instructions of the army will inform each unit of army troops of the medical support allotted to it. Unit surgeons may request evacuation of their aid stations and dispensaries by the army medical unit in support. Certain units of army troops, notably antiaircraft artillery, are organically equipped with ambulances. When practicable, and especially in emergencies,

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these should be used by unit surgeons to send their evacuees to the army clearing stations.

■ 180. MEDICAL SUPPORT OF CAVALRY WITH ARMY.—*a. Organic medical service.*—Each cavalry division is provided organically with first and second echelon medical and veterinary service. The army medical service provides third echelon service.

b. General considerations.—(1) The standard system of evacuation in forward areas is predicated upon two essential premises: supporting medical echelons must be at least slightly more mobile than those supported; and lines of communication (evacuation) must be secure. If either of these basic requirements is lacking, the system breaks down.

(2) The essentiality of the second premise may be, at first glance, more obvious than that of the first. However, because of the great mobility of army ambulances, the army medical service is more mobile than division clearing stations, despite the lesser mobility of evacuation hospitals. This permits the army medical service to keep clearing stations ready to move on short notice, but army medical support has failed when a division clearing station is unable to move because of the accumulation of casualties.

(3) The essential quality of the mobility of medical units is time, and time is a function of distance as well as of speed. Thus, while army ambulances may be sufficiently mobile to evacuate division clearing stations some 30 miles in front of evacuation hospitals, this does not imply that they are mobile enough to evacuate the clearing station of a cavalry division some 50 or 60 miles away.

c. When lines of communication are secure.—The principal problems in the evacuation of the clearing station of a cavalry division arise out of the distance involved. The greater mobility of cavalry requires prompt evacuation if the mobility of its organic medical service is to be maintained, and this, in turn, may require the decentralization of this task to an army ambulance commander, giving him adequate means and charging him with this sole responsibility. When the distance becomes too great for this to solve the problem, the cavalry division should be reinforced with an army clearing unit, thus permitting it to "leapfrog" its clearing station and maintain contact with combat elements.

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d. When lines of communication are not secure.—It is futile to attempt to employ the standard system in evacuating a cavalry division because, at best, evacuation under such circumstances can proceed only intermittently. The first step in the solution is the reinforcement of the cavalry division with additional means to care for their casualties until they can be evacuated. This will require one or more army clearing units. Subsequent steps in the solution will depend upon the situation. If the cavalry division is responsible for replenishing its ammunition and other supplies, army ambulances should be attached to it and the division commander made responsible for the evacuation of his casualties, which he may do by protected convoy at the same time that he obtains supplies. If, however, the army retains the responsibility for the distribution of supplies to the cavalry division, it should also retain the responsibility of evacuation, and accomplish both tasks by the same protected convoys.

■ 181. MEDICAL SUPPORT OF RECONNAISSANCE AND SECURITY DETACHMENTS.—*a. General procedures.*—(1) Detachment commanders are responsible for first and second echelon medical service. Each component of the detachment should bring with it its proper proportion of attached medical personnel. Elements of second echelon medical service may be taken from division, corps, or army medical units.

(2) Detachments larger than a regiment should be provided with second echelon medical service.

(3) Local commanders are responsible for providing suitable medical means for local reconnaissance and security detachments. When necessary, the army medical service may furnish reinforcements for this purpose.

(4) Reconnaissance and security detachments operating under conditions that prevent ready evacuation by supporting medical elements should be given sufficient medical means to care for their casualties properly until communications can be established.

b. Support by army medical service.—The army is responsible for the third echelon medical service of all reconnaissance and security detachments, and it may furnish the elements of the second echelon. The general principles

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governing this medical support are the same as those governing the medical support of cavalry. (See par. 180.)

■ 182. REINFORCEMENT OF SUBORDINATE ELEMENTS.—*a. General.*—All tactical and administrative organization is based upon average requirements. To provide for each organization, organic means adequate to cope with extreme situations would prove to be most uneconomical during the greater part of the time. Since all elements of the army rarely, if ever, exert a maximum effort at the same time, pools of additional means are included in the organization of the army for the purpose of reinforcing such of its subordinate elements as are faced with unusual demands.

b. How initiated.—After estimating the situation and formulating plans, lower echelons ordinarily will request the reinforcements for which they can foresee the needs. The approval of all such requests is a decision of the army commander. In the case of medical reinforcements, the army surgeon examines the plans of subordinate echelons and makes suitable recommendations upon which the army commander may base his decision. The responsibility of the surgeon is not confined to requests submitted. If, in his opinion, sufficient medical reinforcements have not been requested, he so advises the army commander and submits his own estimate of the additional medical means required. The army surgeon must keep informed of the medical situations within all echelons at all times, and he should initiate the reinforcement of subordinate medical services whenever it is indicated during the course of an action.

c. Allocation of means.—All probable demands must be considered before the army surgeon recommends the allocation of the limited means at his disposal. The future needs of divisions not committed initially must not be overlooked. In general, preference should be given to elements having decisive missions. Insofar as practicable, tactical and administrative unity should be preserved in the allocation of reinforcements. This principle may have to be violated upon occasion.

d. Control.—Control passes from the army when the attachment to the lower unit becomes effective. This time is prescribed in the order, and usually will be fixed as the time that the reinforcement arrives at a designated point

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within the area of the unit to which it is destined. The duration of the attachment may or may not be stated in the original order, and control returns to the army only after the attachment has been discontinued by the army commander.

SECTION V

INFLUENCE OF TACTICAL OPERATIONS UPON MEDICAL SERVICE

■ 183. CONCENTRATION.—*a. General plan.*—The principal limiting factors of a concentration plan are the location of the concentration area, particularly with regard to the location of the enemy; the requirements of security during concentration; the scheme of maneuver of the army; and the rail and road net. The concentration plan is developed in detail before concentration is begun, and it is of the greatest importance that both the medical plan be developed concurrently and that the general plan provide for adequate medical service during all phases.

b. Covering force.—When there is any threat of enemy interference with concentration, the first provision is for a covering force. Such a force ordinarily includes cavalry and may include other arms. Antiaircraft protection is also among the first priorities.

c. Medical service.—(1) *General.*—The following fundamental considerations should be observed in planning the medical service for the concentration of the army:

(*a*) All units, including those of the covering force, may be expected to arrive in the concentration area with casualties requiring immediate evacuation and hospitalization.

(*b*) Medical installations must be located to conform to the disposition of the various units in the concentration area.

(*c*) No more medical units should be employed in medical service in the concentration area than are necessary, thus permitting as many as possible to continue training and other preparations for combat. The medical service must be suitably disposed and kept sufficiently mobile to support future movements of the army without delay.

(*d*) The physical facilities of existing civil institutions should be used as far as practicable without seriously interfering with the medical requirements of the civil population.

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(*e*) Close cooperation with, or military control of existing civil public health agencies is essential to the preservation of the health of the troops.

(2) *Priorities.*—(*a*) In general, the concentration of essential medical units should precede, whenever practicable, that of the units which they are to serve, in order that they may be fully established and ready to function when other units arrive in the area.

(*b*) Essential functioning elements of divisions and corps medical services should receive high priorities within their units, and it is the duty of the army surgeon to examine subordinate concentration plans and to inform the army commander when such plans do not provide for an adequate medical service. Other medical elements, not required for service in the concentration area, require no special consideration.

(c) At least one evacuation hospital and an army ambulance unit will be required by the covering force and should be given a very early priority in the plan. Other evacuation hospitals are given priorities in accordance with the medical needs that can be foreseen. Surgical hospitals will not be required during concentration, and the convalescent hospital may be given a very low priority. The medical laboratory and medical depot will be needed early, and the priorities of other army medical units, such as collecting and clearing units, will depend upon the extent of their contemplated employment during concentration. Priorities of veterinary units are governed by similar considerations.

■ 184. MARCHES.—*a. Army troops.*—For the medical service of marching columns, see ch. 4. The great majority of units of army troops being either motorized or mounted, march collecting posts rarely will be required for their columns. Army ambulances may be attached to such units as are not organically provided with them, and all units may either carry with them or evacuate their own march casualties. Routes for such evacuation should be arranged in the army medical plan in order to minimize interference with other movements. The services of army clearing stations frequently may be dispensed with during marches, the march casualties of army units being evacuated either directly to evacuation hospitals or to second echelon installations of corps and divisions.

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b. Third echelon medical service.—No great proportion of an army will be engaged in combat during a march; this will permit the bulk of the evacuation hospitals being held ready to move forward to establish nearer the front as the situation indicates. The clearing stations ordinarily will move daily and must be evacuated in time to permit such movement. However, movements of ambulances should be reduced to a minimum during the hours of marching, and, except for the units engaged in combat, it may prove advisable to limit routine evacuation to the hours in which the columns are in bivouac, directing lower echelons either to call upon army for evacuation of emergency cases or to evacuate them with their own ambulances.

■ 185. ATTACK.—*a. General.*—The casualty rate is higher than average in attack, and may be expected to be highest in divisions making strong attacks against resistance. Movement is an essential characteristic of most types of attack, and for medical units to maintain contact, the accumulation of casualties must be prevented by prompt evacuation.

b. Surgical hospitals.—These should be allocated in accordance with the tasks of the several divisions, preference being given to those making the main and principal efforts. When not all divisions can be so supported, the divisions not expected to advance rapidly may be reinforced with operating teams so that their own clearing stations may care for nontransportables. It must always be remembered that divisions initially in reserve may urgently require the support of surgical hospitals when they are committed. However, surgical hospitals should not be established at station, because of their limited mobility, until stiff resistance is encountered.

c. Evacuation hospitals.—The necessity for secrecy may prohibit the proper disposition of evacuation hospitals prior to the launching of the attack. In such cases, as many evacuation hospitals as is possible should be initially in reserve, loaded and ready for early movement to attack positions. An adequate reserve, ready for movement at any time, is essential if the attack progresses rapidly.

d. Reinforcement of subordinate echelons.—The medical services of divisions making major efforts may require reinforcement (see par. 182).

e. Supply.—The heavier casualty rate and the wastage

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resulting from rapid movement will consume supplies at a higher than average rate.

■ 186. PURSUIT.—*a. Planning.*—In every attack situation particularly, the possibility that the commander will exploit success should be uppermost in the mind of the army surgeon. The medical plan for a pursuit must be prepared in advance because, once the decision to pursue is made, no time is lost in inaugurating the pursuit.

b. Direct pressure force.—The medical service of the direct pressure force is that of any fast-moving attack. Speed of movement increases the difficulty of collection and evacuation, and every effort must be made to keep first and second echelon medical service in close contact with their units. Reinforcement of lower medical echelons may be required, particularly with litter bearer and clearing elements, the latter to enable clearing stations to be "leapfrogged" frequently.

c. Encircling and harassing forces.—Third echelon medical service ordinarily is impossible with forces that operate in the enemy's rear. This lack may be partially compensated by reinforcing the second echelon medical services of such forces so that they may care for their casualties properly until satisfactory contact can be reestablished. The source of the second echelon medical service of such forces depends upon the situation and the size, composition, and source of the force. It may be provided from division or corps medical services, or by attaching elements of the army medical service.

■ 187. ATTACK OF RIVER LINE.—The special problems arising in an attack of a river line are in the field of division medical service, more than in that of corps and army medical service. Insofar as the army is concerned, the medical problems are largely those of any attack. Considerations of secrecy may delay the disposition of medical installations, but evacuation hospitals should be pushed as near the river line as possible as soon as corps bridgeheads have been secured. Their exact locations will depend upon the bridges as well as the rail net. Surgical hospitals will prove to be of great value, especially when evacuation is delayed by congestion on bridges, and they should be pushed across the river before rail communications are established. The answer to this

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question lies in each situation; but a general principle may be stated that, when surgical hospitals are able to afford adequate emergency service to the seriously injured, evacuation hospitals should not be moved away from common carrier lines without compelling reasons.

■ 188. DEFENSE.—*a. General.*—The medical service of the defense depends so much upon the type of defense that it is unsafe to prescribe fixed rules applicable to all types. A fortified position, for example, ordinarily will include fixed, protected sites for medical installations, and the scheme of evacuation will depend upon the means arranged. A mobile defense implies considerable offensive operations, and a defensive-offensive is really an attack. Only broad general principles are stated in *b* and *c* below.

b. Evacuation hospitals.—These usually are located farther to the rear than in attack, and well within protected flanks, where they will escape being involved in minor enemy successes. No more units should be established at station than necessary, and a reserve should be available for either a counteroffensive or a retirement.

c. Surgical hospitals.—These will be particularly useful to divisions since, so long as the defense is maintained, there will be little movement of division rear installations.

■ 189. RETROGRADE MOVEMENTS.—The fundamentals of third echelon medical service of retrograde movements are—

a. As few evacuation hospitals are established at station as will meet the needs, and, when so established, only so much of the unit is set up as is necessary.

b. Evacuation hospitals are moved toward the rear by leapfrogging.

c. Second echelon medical service must be kept highly mobile through prompt evacuation.

d. Surgical hospitals ordinarily are impracticable in this operation, but their personnel may be employed to advantage in other service.

SUPPLY VI

SUPPLY

■ 190. CLASSIFICATION OF SUPPLIES.—See FM 8–55.

■ 191. ARMY MEDICAL SUPPLY.—*a. Responsibility.*—The surgeon is responsible to the army commander for the procure-

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ment, storage, and issue of all items of special supply allocated to the Medical Department. To assist him in these duties are the army medical supply officer and the supply subsection of the medical section of army headquarters.

b. Army medical supply officer.—The commanding officer of the army medical depot is the army medical supply officer. He heads and is responsible for the operations of medical supply as distinguished from planning and the formulation of policies. Under such policies as may be established, he procures such supplies as are required to maintain depot stockages at prescribed levels, and issues supplies upon requisitions approved by the army surgeon and upon any other request that may be authorized. He is directly responsible for the army medical depot.

c. Supply subsection of medical section of army headquarters.—This subsection provides the army surgeon with assistance in all the details of medical supply to which he would have personally to attend if he had no other assistance than an operating agency. In other words, it relieves the army surgeon of the details of the discharge of such of his responsibility, and the exercise of such of his authority as he would not ordinarily delegate to an operating agency. This subsection studies supply requirements, compiles supply experience, drafts supply plans, formulates supply policies for the surgeon to recommend to the army commander, drafts recommendations for the establishment of credits, examines all requisitions for supplies and recommends action for the surgeon to take in connection therewith, and assists the army surgeon in all other staff aspects of supply matters. It should refrain from invading the sphere of responsibility of the army medical supply officer in the operations of procuring, storing, and issuing of medical supplies, although the army surgeon may, in his discretion, delegate to this subsection the technical supervision of the army medical depot.

■ 192. DEPOT STOCKAGE.—See FM 8–55.

■ 193. SUPPLY CREDITS.—See FM 8–55.

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APPENDIX I

INDIVIDUAL EQUIPMENT OF MEDICAL DEPARTMENT OFFICERS AND ENLISTED MEN

■ 1. MEDICAL.—*a. Officers.*—The kit, medical officer's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	1
Pouch	do	1
Vial, hard rubber, ½-ounce, containing	do	6
Compound carthartic pill or tab (mercurous chloride) USP.		
Glycyrrhiza and opium compound mixture, USP tab.		
Acetophenetidin, USP, 5 gr. tab.		
Ipecac and opium powder, USP, 5 gr. tab.		
Quinine sulfate, USP, 5 gr. tab.		
Plaster, adhesive, 1-inch	Spool	1
Syringe, hypodermic:		
Complete	Each	1
Needle	do	12
Pencil	do	1
Box, tablet, folding	Dozen	1
Pin, safety, medium	Card	1
Thermometer, clinical	Each	1
Iodine swab, 1½ cc	Box	2
Bandage, gauze, compressed, 3-inch	Each	5
Torniquet, field	do	1
Case, instrument, medical officer's, containing	do	1
Case, instrument, medical officer's, empty	do	1
Container, metal, for two knives	do	1
Bistoury, sharp pointed, straight, 1¼-inch	do	1
Forceps:		
Hemostatic, Abbey	do	1
Hemostatic, Jones, 5-inch	do	1
Tissue, spring, 4½-inch	do	1
Knife, operating, 1¼-inch	do	1
Needle:		
Surgeon's regular, ⅜ circle, sizes 6 and 10	Pkg	1
Uterine, size 5, half-circle	do	1
Scissors, 1 point sharp, 4½-inch	Each	1
Suture, silk, braided, non-capillary, 3 sizes	Pkg	3
Kit:		
Insert, type II	Each	1
Litter strap	do	1
Container, metal, No. 1 (for iodine swabs)	do	1
Sterilizer, hypodermic needle	do	1
Emergency medical tag	Book	1

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b. Noncommissioned officers.—The kit, medical, noncommissioned officer's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	2
Pouch	do	2
Suspender	do	1
In right-hand pouch		
Vial, hard rubber, ½ ounce, containing	do	6
Acetophenetidin, USP, 5 gr. tab.		
Compound cathartic pill or tab (mercurous chloride), USP.		
Glycyrrhiza and opium compound mixture, USP Tab.		
Ipecac and opium powder, USP, 5 gr. tab.		
Quinine, sulfate, USP, 5 gr. tab.		
Plaster, adhesive, 1-inch	Spool	2
Syringe:		
Hypodermic, complete	Each	1
Hypodermic, needle	do	12
Pencil	do	1
Box, tablet, folding	Dozen	1
Pin, safety, large and medium, each	Card	1
Thermometer, clinical	Each	1
Iodine swab, 1½ cc	Box	2
Case, instrument, medical officer's (for contents see contents of Kit, medical officer's.)	Each	1
Kit:		
Insert, type II	do	1
Litter strap	do	2
Container, metal, No. 1 (for iodine swabs)	do	1
Sterilizer, hypodermic needle	do	1
Emergency medical tag	Book	1
In left-hand pouch		
Cotton, absorbent, compressed	Ounce	4
Gauze, plain, sterilized	Pkg	4
Bandage:		
Gauze, compressed, 3-inch	Each	8
Triangular, compressed	do	4

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c. Privates.—The kit, medical private's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	2
Pouch	do	2
Suspender	do	1
In right-hand pouch		
Ammonia, aromatic spirit, USP	Ounce	2
Plaster, adhesive, 1-inch	Spool	1
Scissors, bandage	Each	1
Pin, safety, medium	Cards	2
Iodine swab, 1½ cc	Box	2
Bandage:		
Gauze, compressed, 3-inch	Each	12
Triangular, compressed	do	3
Kit, insert, type I	do	1
Container, metal, No. 1 (for iodine swabs)	do	1
Flask, with cup (for aromatic spirits of ammonia)	do	1
In left-hand pouch		
Pencil	do	1
Dressing, first-aid, small	Pkg	8
Kit, litter strap	Each	2
Emergency medical tag	Book	1

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■ 2. DENTAL.—*a. Officers.*—The kit, dental officer's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	1
Insert, type I	do	1
Litter strap	do	1
Pouch	do	1
Procaine hydrochloride cartridge, 2 percent, 2.4 cc	Box	1
Syringe, hypodermic, cartridge type, complete	Set	1
Cotton, absorbent, compressed	Ounce	1
Stopper, rubber, No. 2	Each	1
Bur, straight handpiece, Nos. ½, 2, and 6, each	Pkg	2
Chisel, Nos. 5 and 48	Each	1
Cleaners, No. 2	Pkg	2
Elevator, Winter, Nos. 122 and 123	Each	1
Excavator, Nos. 63 and 64	do	1
Explorer, No. 5	do	1
Forceps, Nos. 150A and 151A	do	1
Holder, nerve broach	do	1
Lancet, exact, No. 1	do	1
Mirror, mouth	do	1
Pliers, No. 2, dressing	do	1
Plugger, Woodson, No. 1	do	1
Scaler, pyorrhea, Towner, No. 01–5	do	1
Towel, hand	do	2
Pencil	do	1
Iodine swab, 1½ cc	Box	2
Engine, bit holder	Each	1
Case:		
Cotton, for dental instruments	do	1
Cotton, for burs	do	1
Container, metal:		
No. 1	do	2
No. 4	do	1
Sterilizer, hypodermic needle	do	1
Vial:		
Glass, 60-cc	do	1
Glass-stoppered	do	3
Emergency medical tag	Book	1

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b. Privates.—The kit, dental private's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	2
Pouch, canvas	do	2
Suspender	do	1
In right-hand pouch		
Silver nitrate, USP	Ounce	1
Cement, germicidal	Box	1
Pliers, No. 122, smooth beak, office	Each	1
Shears, crown, universal	do	1
Spatula, cement	do	1
Syringe, water	do	1
Wire, brass, ligature	Box	1
Towel, hand	Each	2
Pencil	do	1
Dressing, first-aid, small	Pkg	2
Slab, square	Each	1
Kit, litter, strap	do	2
Emergency medical tag	Book	1
In left-hand pouch		
Ammonia, aromatic spirit, USP	Ounce	2
Plaster, adhesive, 1-inch	Spool	1
Scissors, bandage	Each	1
Pin, safety, medium	Card	1
Iodine swab, 1½ cc	Box	2
Bandage:		
Triangular, compressed	Each	3
Gauze, compressed, 3-inch	do	12
Kit, insert, type I	do	1
Container, metal, No. 1	do	1
Flask, with cup	do	1

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■ **3. VETERINARY.**—*a. Officers.*—The kit, veterinary officer's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	1
Litter strap	do	1
Pouch	do	1
Bandage, muslin, 3-inch	do	2
Cotton, absorbent, compressed	Ounce	1
Gauze, plain, sterilized	Pkg	1
Pencil	Each	1
Case:		
Hypodermic tablets, veterinary, containing	do	1
Hypo tabs:		
Arecoline hydrobromide, USD, ½-gr	do	20
Butyn, NNR, 3-gr	do	20
Pilocarpine hydrochloride, USP, ½-gr	do	10
Glyceryl trinitrate, spirit, USP, 1/10-gr	do	10
Strychnine sulfate, USP, ½-gr	do	30
Vial, 6½-cc	do	2
Pocket, veterinary, containing	do	1
Container, metal, containing	do	1
Knife, operating:		
1½-inch	do	1
2-inch	do	1
Bistoury, curved, 2-inch:		
Probe-pointed	do	1
Sharp-pointed	do	1
Scissors, 1 point sharp, 5½-inch	do	1
Curette, sharp	do	1
Forceps, hemostatic, Pean, 5½-inch	do	2
Gouge, hoof	do	1
Probe, pointed, 10-inch	do	1
Needles, surgeon's, regular, assorted (2 each of sizes 1, 2, and 5).	Pkg	1
Suture, silk, twisted, heavy	Card	1
Retainer	Set	1
Syringe, hypodermic, 10-cc	Each	1
Thermometer, clinical, veterinary	do	1
Iodine swab, 1½ cc	Box	2
Container, metal, No. 1 (for iodine swab)	Each	1
Sterilizer, hypodermic, needle	do	1
Emergency veterinary tag	Book	1

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b. Noncommissioned officers.—The kit, veterinary noncommissioned officer's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	2
Pouch	do	2
Suspender	do	1
In right-hand pouch		
Cresol saponated solution, USP	Cc	60
Bandage, muslin, 3-inch	Each	3
Stopper, rubber, solid, No. 2, for glass vial	do	1
Pencil	do	1
Iodine swab, 1½ cc	Box	2
Oakum, 2-oz	Pkg	1
Case, instrument, veterinary, noncommissioned officer's, containing:	Each	1
Forceps:		
Dressing, 5½-inch	do	1
Hemostatic, Bankin Kelly, straight	do	1
Knife, operating, 1½-inch	do	1
Needle, surgeon's, regular, ⅜ circle, sizes 4 and 6	do	3
Scissors, double-blunt, 6½-inch	do	1
Knife, hoof searching	do	1
Retainer	Set	1
Suture, tape, cotton	Roll	2
Thermometer, veterinary	Each	1
Suture, silk braided, non-capillary, 3 sizes	Pkg	1
Container, metal, Nos. 1 and 4	Each	1
Vial, glass, 60-cc	do	1
Emergency veterinary tag	Book	1
In left-hand pouch		
Ammonia, aromatic spirit, USP	Cc	60
Cotton, absorbent, compressed	Ounce	2
Gauze, plain, sterilized	Pkg	2
Stopper, rubber, solid, No. 2, for glass vial	Each	1
Pin, safety, large	Card	1
Bandage, triangular, compressed	Each	2
Oakum, 2-oz	Pkg	1
Container, metal, No. 4	Each	2
Vial, glass, 60-cc	do	2

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c. Privates.—The kit, veterinary private's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap	Each	2
Pouch, canvas	do	2
Suspender	do	1
In right-hand pouch		
Bandage, muslin, 3-inch	do	6
Cotton, absorbent, compressed	Ounce	1
Gauze, plain, sterilized	Pkg	1
Scissors, double-blunt, 6½-inch	Each	1
Pencil	do	1
Pin, safety, large	Card	1
Retainer	Set	1
Iodine swab, 1½ cc	Box	2
Oakum, 2-oz	Pkg	1
Case, instrument, veterinary private's, containing 1 forceps, dressing, and 1 forceps, hemostatic.	Each	1
Container, metal, No. 1, for iodine swab	do	1
Emergency veterinary tag	Book	1
In left-hand pouch		
Bandage, triangular, compressed	Each	3
Dressing, first-aid, small	Pkg	8

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APPENDIX II

MEDICAL DEPARTMENT CHESTS

■ 1. GENERAL NATURE OF CONTENTS AND WEIGHTS.—*a.* A large part of the unit medical equipment of division medical units is packed in standard chests. With the exception of the pack equipment (chests designated by letters), and chest No. 6, each chest is (inside dimensions) 28 inches long, 16¼ inches wide, and 14½ inches deep, and occupies approximately 5 cubic feet of space. The chests of the pack equipment are smaller and are designed to fit the Phillips pack saddle. Chest No. 6 is shaped to accommodate the particular lighting unit supplied.

b. Following is a list of standard chests:

Chest No.	General nature of contents	Weight, with contents
		Pounds
1	Surgical dressings	121
2	Drugs and instruments	150
4	Office equipment	146
5	Sterilizer	110
6	Lighting unit	240
7	Clinical microscopy set	140
Medical pack:		
A	Drugs and surgical dressings	45
B	Instruments, etc	45
60	Dental dispensary	166
61	Dental field laboratory	160
62	Dental field laboratory	150
80	Veterinary drugs and instruments	150
81	Veterinary surgical dressings	110
Veterinary pack:		
A	Veterinary drugs and dressings	28
B	Lamps, rope, etc	28

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■ 2. ITEMIZED LISTS OF CONTENTS.—*a. Chest, Medical Department, No. 1.*

Article	Unit	Quantity
Chest, field, modified	Each	1
Apron, rubberized	do	2
Basin, rubber	do	2
Book, blank, 8VO	do	1
Pencil	do	1
Pin, safety:		
Large	Card	4
Medium	do	4
Dressing, first-aid, large	Each	50
Scissors:		
Bandage	do	2
Bandage, with chain	do	1
Book, note, manifolding:		
Binder	do	1
Filler	do	1
Bandage, muslin, 5-inch	Dozen	2½
Cotton, absorbent, compressed	Ounce	25
Gauze, plain, sterilized	Pkg	25
Plaster, adhesive:		
1-inch	Spool	6
3-inch	do	6
Iodine swab, 1½ cc	Box	12
Bandage:		
Gauze, compressed, 3-inch	Dozen	6
Triangular, compressed	Each	12
Dressing, first-aid, small	Pkg	60

b. Chest, Medical Department, No. 2.

Article	Unit	Quantity
Chest, field, plain, with tray set, type I	Each	1
Ether (for anesthesia), USP	¼ lb	4
Ethyl chloride, USP	3 oz	1
Eugenol, USP	Ounce	1
Mercuric oxide, yellow, ointment, USP	¼ oz	4
Mercury bichloride, large poison tab., USP	250 tabs	1
Petrolatum, USP	Pound	1
Plaster, adhesive, 3-inch	Spool	1
Cotton, absorbent, compressed	Ounce	25
Scissors, bandage	Each	1
Applicator, wood	Carton	1

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Article	Unit	Quantity
Book, blank, 8VO	Each	1
Pencil	do	4
Box:		
Ointment, 3 in nest	Dozen	6
Tablet, folding	do	1
Pin, safety:		
Large	Card	2
Medium	do	2
Iodine, 15 gr., and potassium iodide, 22.5 gr., USP	Box	1
Ointment:		
Acid, boric, 1 oz. USP	Tube	6
Mercurial, mild, ½-oz., USP	do	12
Zinc oxide, 1-oz., USP	do	12
Bandage, gauze, compressed, 3-inch	Each	12
Container, hard rubber, No. 2, containing protein, silver, mild, USP, 4.6 gr. tab.	do	1
Container, metal, No. 7, containing	do	6
Acid:		
Acetylsalicylic, 5 gr	Tab	500
Tannic, USP	Pound	¼
Ammonium chloride, USP	Troche	250
Quinine sulphate, 5 gr	Tab	500
Sodium bicarbonate and peppermint	do	1,000
Bismuth subcarbonate, 5 gr	do	1,000
Container, metal, No. 9, containing	Each	8
Aloin compound	Pill	250
Cascara sagrada, extract, 2 gr	Tab	250
Codeine sulphate, ½-gr	do	500
Coryza	Tab	500
Ipecac and opium powder, 5 gr	do	200
Phenobarbital, ½-gr	do	500
Potassium permanganate, 5 gr	do	300
Sulfanilamide, USP, 5 gr	do	150
Container, metal, No. 12, containing 1 pint glycerin, USP	Each	1
Graduate, 60 cc	do	2
Emergency medical tag	Book	1
Razor, safety	Each	1
Razor, safety, blades	Pkg	1
Dropper, medicine	Dozen	1
Ointment:		
Acid, salicylic, 1 oz	Tube	12
Mercuric, ammoniated, 1 oz., USP	do	12
Mercurous chloride, 1 oz	do	12
Sulfur, 1 oz., USP	do	12
Tourniquet, field	Each	4
Hone, oil, 3½-inch	do	1
Tray, instrument, 10-inch	do	1
Syringe, urethral, prophylaxis	do	1

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Article	Unit	Quantity
Soap, white, floating	Bars	2
Paper, toilet	Roll	1
Container, hard rubber, No. 2, containing protein, silver, strong, USP, 4.6 gr. tab.	Each	1
Cup, paper, noncollapsible	do	40
Venereal prophylaxis slip	Each	100
Box, cash, containing	do	1
Apomorphine hydrochloride, 1/10 gr	Tab	20
Atropine sulphate, 1/100 gr	do	20
Digitalis hypo solution	Amp	12
Epinephrine soluable salt, 3/200 gr	Tab	60
Morphine sulphate, ¼-gr	do	400
Procaine hydrochloride and epinephrine	do	100
Suture, catgut:		
Chromic, size 2	Tube	12
Plain, size 1	do	12
Plain, size 2	do	12
Syringe, Luer:		
2 cc	Each	3
10 cc	do	1
Needle:		
25-gage, ¼-inch canula	do	4
23-gage, ¾-inch canula	do	4
19-gage, 1¾-inch canula	do	2
17-gage, 3-inch canula	do	2
15-gage, 3-inch canula	do	2
Spoon, tea	do	2
Thermometer, clinical	do	6
Corkscrew, folding	do	1
Sterilizer, hypodermic needle	do	1
Foot powder	¼ lb	4
Magnesium sulphate	4 lbs	2
Gloves, medium:		
Size 7½	Pair	2
Size 8½	do	2
Inhaler, Yankauer	Each	1
Towel, hand	do	6
Brush, hand	do	2
Apron, rubberized	do	1
Bag, hot water and syringe	do	1
Basin, pus	do	1
Battery, dry-cell	do	2
Flashlight	do	1
Flashlight lamp	do	2
Case, operating, small	do	1
Basin, rubber	do	2

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Article	Unit	Quantity
Container, metal, No. 5, containing	Each	1
Catheter, urethral, rubber:		
14F	do	2
16F	do	2
18F	do	2
22F	do	2
Container, metal, No. 14, each containing 1 qt. alcohol, USP	do	2
Cup, enamelware	do	3
Dispensing sets, field	do	1
Gloves, rubber, pouch	do	1
Sterilizer, instrument 9¾-inch, containing	do	1
Stethescope	do	1
Tubing, stomach	do	1

c. Chest, Medical Department No. 4.

Article	Unit	Quantity
Chest, plain equipped with tray set, type 3	Each	1
Book, blank, 8VO	do	1
Clip, paper, Gem No. 1	Box	1
Envelope:		
No. 189	Pkg	6
No. 36	do	1
No. 84	do	1
Eraser:		
Soft rubber	Each	1
Rubber, typewriter	do	2
Mucilage, 4-oz	Bottle	1
Pad:		
Prescription	Each	1
Memorandum:		
6 x 9 inches	do	4
8 x 10½ inches	do	2
Paper:		
Blotting, 3 x 9½ inches	do	4
Carbon, black, 8 x 10½ inches	Box	1
Typewriter:		
Bond, 8 x 10½ inches	Ream	1
Manifold, 8 x 10½ inches	do	2
Pencil	Dozen	2
Pencil:		
Blue	Each	1
Indelible	do	2
Red	do	1

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Article	Unit	Quantity
Penholder	Each	4
Ribbon, typewriter	do	1
Ruler, 12-inch	do	1
Tack, thumb	do	24
Tag, shipping, linen	do	50
Pin, common	Paper	1
Bands, rubber, assorted	Carton	1
Book, note, manifolding:		
Binder	Each	2
Filler	do	4
Ink bottle, hard rubber	do	1
Ink powder, black	Tube	1
Pens, steel, assorted	Dozen	1
Typewriter, portable	Each	1

d. Chest, Medical Department No. 5.

Article	Unit	Quantity
Chest, field, plain, equipped with tray, No. 7, for sterilizer	Each	1
Gauze, plain, 5 yards	Roll	50
Sterlizer, drum, 9-inch	Each	2
Autoclave, laboratory, field	do	1

e. Chest, medical pack, A.

Article	Unit	Quantity
Chest, pack, empty, equipped with insert plywood	Each	1
Eugenol, USP	Ounce	1
Mercuric oxide, yellow, ointment, USP	¼ Ounce	4
Cotton, absorbent, compressed	Ounce	10
Scissors:		
Bandage	Each	1
Bandage, chain for	do	1
Stethoscope	do	1
Pencil	do	2
Box, tablet, folding	Dozen	4
Cup, paper	do	4
Pin, safety, medium	Card	4

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Article	Unit	Quantity
Ointment:		
Acid:		
Boric, 1 oz., USP	Tube	4
Salicylic, 1 oz	do	4
Tannic, with chlorobutanol, 1½ oz	do	4
Mercurial:		
Mild, ½ oz., USP	do	4
Ammoniated, 1 oz., USP	do	4
Mercurous chloride, 1 oz	do	4
Sulfur, 1 oz., USP	do	4
Zinc oxide, 1 oz., USP	do	4
Bandage, gauze, compressed, 3-inch	Dozen	4
Iodine, 15 gr., and potassium iodide, 22.5 gr., USP	Box	1
Bandage, triangular, compressed	Each	6
Dressing, first-aid:		
Large	do	5
Small	do	10
Gauze, sublimated	Pkg	20
Case, operating, small, improved, complete	Each	1
Tourniquet, field	do	2
Container, hard rubber, No. 2, 1 each for the following	do	2
Protein, silver:		
Mild, 4.6-gr. tab.		
Strong, 4.6-gr. tab.		
Container, metal, No. 7, 12-oz., 1 each for the following	do	7
Acid, acetylsalicylic, USP, 5-gr. tab.		
Ammonium chloride troches, USP.		
Mercury bichloride, large, poison, tab., USP.		
Petrolatum, USP.		
Quinine sulfate, USP, 5-gr. tab.		
Sodium bicarbonate and peppermint, tab.		
Bizmuth subcarbonate, USP, 5-gr. tab.		
Container, metal, No. 9, 3-oz., 1 each for the following	do	7
Aloin compound pill.		
Cascara sagrada extract, USP, 5-gr. tab.		
Codeine sulfate, ½-gr. tab.		
Coryza tablet.		
Ipecac and opium powder, USP, 5-gr. tab.		
Phenobarbital, USP, ½-gr. tab.		
Potassium permanganate, USP, 5-gr. tab.		
Cover, canvas	do	1
Book, note, manifolding:		
Binder	do	1
Filler	do	2
Pad, heat, complete	do	2
Emergency medical tag	Book	2

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f. Chest, medical pack, B.

Article	Unit	Quantity
Chest, pack, empty	Each	1
Alcohol, denatured	Tin	1
Ether (for anaesthesia)	do	4
Foot powder	do	2
Magnesium sulfate, USP, 4 lb	do	1
Plaster, adhesive, 3-inch	Spool	3
Applicator, wood (½ carton tied in)	Bundle	1
Gloves, medium:		
Size 7½	Pair	1
Size 8	do	1
Bottle, wide mouth, 250 cc. (replace stopper, mushroom, with stopper, rubber, solid, No. 8).	Each	1
Towel, hand	do	6
Brush, hand	do	2
Soap, white, floating	Bar	1
Apron, rubberized	Each	1
Bag, hot water, and syringe	do	1
Box, cash, containing	do	1
Apomorphine hydrochloride, 1/10 gr. hypo tab., USP	Tube	20
Atropine sulfate, 1/100 gr. hypo tab	do	20
Digitalis hypo solution, 1 amp. equals 1 cat unit	Dozen	1
Epinephrine soluble salt, 3/200 gr. hypo tab	Tube	20
Morphine sulfate, USP, ¼ gr. hypo tab	do	20
Procaine hydrochloride and epinephrine hypo tab	do	20
Suture, catgut, plain:		
Size 1	do	5
Size 2	do	4
Size 3	do	1
Syringe:		
Luer:		
2 cc	Each	3
Needle, 23-gage, ¾-inch canula	Dozen	1
Urethral, prophylaxis	Each	3
Spoon, tea	do	2
Dropper, medicine	do	6
Thermometer, clinical	do	3
Cocaine hydrochloride, USP, 2 gr. hypo tab	Tube	1
Corkscrew, folding	Each	1
Sterilizer, hypodermic needle	do	1
Vial, 4-ounce	do	3
Container, metal:		
Large	do	1
Small	do	1

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Article	Unit	Quantity
Container, metal—Continued.		
No. 5, for the following	Each	1
Catheter, urethral, rubber:		
14F	do	1
16F	do	1
18F	do	1
22F	do	1
Tube, stomach	do	1
Cover, canvas	do	1
Basin, rubber	do	2
Bucket, canvas	do	2
Cup, enamelware	do	3
Gloves, rubber, pouch	do	1
Graduate, 60 cc	do	1
Sterilizer, instrument, 9¾-inch, containing	do	1
Inhaler, Yankauer	do	1
Razor	do	1
Razor strop	do	1
Candle	do	1
Lantern, folding	do	1

g. Chest, Medical Department No. 60.

Article	Unit	Quantity
Chest, field, plain, equipped with tray set	Each	1
Alcohol, denatured	Quart	1
Creosote, USP	Ounce	1
Eugenol, USP	do	1
Mercury, USP	¼ lb	1
Oil theobroma, modified	Tube	1
Procaine hydrochloride, ¼ gr. hypo tab	20 tabs	3
Procaine hydrochloride cartridge, 2 percent, 2.4 cc	Box	2
Pumice, fine powder	Pound	1
Silver nitrate and formalin	Box	1
Cotton, absorbent, compressed	Ounce	2
Elevator, nasal, blunt	Each	1
Forceps; hemostatic:		
Halstead, mosquito, straight	do	1
Kelly, straight	do	1
Kelly, Pean, curved	do	1
Needle:		
Surgeons', regular, ⅜-circle, sizes 12, 16, and 20	do	2
Uterine, size 5, half-circle	do	2
Scissors, iris, full-curved	do	1

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Article	Unit	Quantity
Suture, catgut:		
Chromic, sizes 1, 2, and 3	Tube	2
Plain, sizes 1, 2, and 3	do	2
Alloy, 1 oz	Bottle	2
Blower, chip	Each	1
Bur:		
Angle handpiece, Nos. 2, 4, 6, 8, 9, 34, 35, 37, 39, 557, 558, 559, and 560.	Pkg	1
Straight handpiece, Nos. 2, 4, 6, 8, 9, 34, 35, 37, 39, 200, 208, 221, 557, 558, 559, and 560.	do	1
Burnisher, stellite, H, J, 5–7, and 1–2	Each	1
Cement:		
Permanent, pearl gray	Box	1
Silicate:		
Case	Each	1
Liquid, caulk	Bottle	2
Shades 20, 21, 22, 23, 24, 25, 26, 27, 28, and 29 each	do	1
Measuring device	Each	1
Shade guide, caulk	do	1
Varnish, 1 oz	Bottle	1
Temporary, anodyne	Box	1
Chisel:		
Nos. 5 and 48	Each	1
Wedelstaedt, Nos. 41 and 42	do	1
Clamp, Nos. 19, 20, 21, 22A, and 23A	do	1
Cleaners, No. 0, 2, and 3	Pkg	1
Disk, paper	Box	1
Dissolver, 3 cc	Each	1
Elevator, Winter, Nos. 122, 123, and 135	do	1
Engine oil	Bottle	1
Engine:		
Foot	Each	1
Handpiece:		
Angle	Each	1
Straight	do	1
Excavator, Nos. 8, 17, 23, 34, 49, 50, 57, 58, 63, 64, 77, 78, and 81	do	1
Explorer, Nos., 5, 6, and 23	do	1
Floss, 100 yards	Spool	1
Forceps:		
Rubber dam, punch	Each	1
Nos. 15, 18R, 18L, 65, 103, 150A, 151A, and 210	do	1
Guttapercha, temporary, 1 oz	Box	2
Holder:		
Cotton	Each	1
Mercury	do	1
Napkin	do	1
Nerve broach	do	1

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Article	Unit	Quantity
Lamp, alcohol:		
SSW–1	Each	1
SSW, wick	do	2
Lancet, exact, No. 1	do	1
Mallet, plugging	do	1
Mandrel:		
No. 303:		
For angle handpiece	do	6
For straight handpiece	do	6
Morgan-Maxfield:		
For straight handpiece	do	2
For angle handpiece	do	2
Mechanical dam	do	1
Mirror:		
Mouth	do	1
Mouth, plane glass	do	2
Mortar and pestle	do	1
Pliers:		
No. 2, dressing	do	1
No. 122, smooth-beak, office	do	1
Plugger:		
Black, Nos. 1 and 3	do	1
Ladmore, No. 3	do	1
Woodson, Nos. 1, 2, and 3	do	1
Point, straight handpiece, Nos. 183, 184, 226, and 241	do	6
Polisher, rubber cup	Box	3
Pot, white	Each	2
Probe	do	1
Retainer, matrix:		
No. 1	do	1
Bicuspid band, medium	Pkg	1
Molar band, medium	do	1
Saw, ribbon	Each	3
Scaler:		
Nos. 33 and 34	do	1
Pyorrhea, Towner, Nos. 01–5, 02–6, and 04–8	do	1
Shears, crown, universal	do	1
Slab, caulk–6	do	1
Spatula:		
Cement	do	1
Stellite	do	1
Stick	do	1
Strip:		
Celluloid	Box	1
Polishing:		
Coarse	do	1
Fine	do	1
Medium	do	1

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Article	Unit	Quantity
Syringe:		
Hypodermic, cartridge type, complete	Set	1
Water	Each	1
Teeth, shade guide	do	1
Wheel, Nos. 301, 302, 304, and 305	do	1
Wire, brass, ligature	do	1
Towel, hand	do	24
Brush, hand	do	1
Soap, white, floating	Bar	1
Book, blank, 8VO	Each	1
Envelope No. 189	Pkg	1
Paper, typewriter, bond, 8 x 10½ inches	Sheet	50
Pencil	Each	1
Thermometer, clinical	do	1
Suture, silk, braided, non-capillary, 3 sizes	Pkg	1
Basin, rubber	Each	1
Container, metal, No. 1, for glass vial	do	2
Isolator, rubber	Box	1
Cup, enamelware	Each	2
Hone, oil, 3½-inch	do	1
Mortar and pestle, 7-cm	do	1
Sterilizer:		
Hypodermic needle	do	1
Instrument, 9½-inch	do	1
Vial, glass-stoppered	do	6
Report of Dental Service (Form 57)	do	25
Register of Dental Patients (card) (Form 79)	do	250

h. Chest, Medical Department No. 61.

Article	Unit	Quantity
Pumice, fine powder, 1 lb	Carton	1
Sodium, borate, USP, 1 lb	do	1
Base plate, 12 in box	Box	2
Bur, vulcanite, No. 3	Each	3
Compound cake	Box	2
Charcoal blocks	Each	1
Cone, felt:		
No. 3	do	1
No. 6	do	1
Dentimeter, iron wire	Spool	1
Flux, reducing	Bottle	1

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Article	Unit	Quantity
Machine, casting:		
Crucible	Each	3
Inlay, flask 1¼-inch	do	2
Saddle and bridge flask, 1½-inch	do	1
Mandrel, No. 303, for straight handpiece	do	3
Paper, articulating	Book	1
Pliers, No. 137, contouring	Each	1
Rubber:		
Light red	Box	2
Denture, all purpose, pink	do	2
Sandarac varnish, 4-oz	Bottle	1
Shears, crown, universal	Each	1
Shellac, 4-oz	Carton	1
Tinfoil, 0.001-inch	Each	1
Tongs, soldering	do	1
Wheel:		
No. 301	do	6
No. 302	do	6
No. 304	do	6
No. 305	do	6
No. 307	do	6
No. 310	do	6
2-inch:		
Coarse	do	2
Medium	do	2
Cloth, 3-inch	do	1
Felt:		
No. 2	do	1
No. 3	do	1
Vulcanizer, thermometer	do	1
Wax, base plate, ½-lb	Box	3
Chalk, 1-lb., prepared, USP	Carton	1
Arbor, emery	Each	1
Articulator, crown and bridge	do	2
Blower, chip, bulb	do	1
Bowl, 4¾-in	do	1
Cellophane, sheets	Pkg	1
Dentimeter	Each	1
Denture base material, acrylic, pink	Pkg	1
File:		
Gold, half-round	Each	1
Vulcanite, double-end	do	1
Finisher, No. 2	do	1
Impression compound, trays	Set	1
Knife:		
Office	Each	1
Plaster, SSW-10	do	1

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Article	Unit	Quantity
Pliers:		
No. 107, round-nose	Each	1
No. 122, smooth-beak, office	do	1
Clasp-bending, Jelenko	do	1
Saw:		
Frame	do	1
Frame, flat blade, No. 0	Bundle	1
Spatula:		
Wax	Each	2
Wax, SSW-31	do	2
Tray:		
Crown and bridge	do	1
Lower:		
BIS-18	do	1
BIS-22	do	1
BIS-24	do	1
BIS-26	do	1
SSW-1	do	1
SSW-3	do	1
SSW-5	do	1
Metal	do	1
Upper:		
SSW-1	do	1
SSW-3	do	1
SSW-5	do	1
Trimmer:		
No. 26	do	1
No. 27	do	1
Tweezers:		
"B"	do	1
"L"	do	1
Wax:		
Crown	Box	1
Inlay	do	1
Knife, table	Each	1
Pliers, side-cutting	do	1
Investment compound, crown and bridge, 4-lb	Tin	1
Impression compound	Carton	2
Investment, inlay	Each	1
Plaster of paris, modeling, 4 lbs. each	Tin	2
Tongs, flask	Each	1
Hammer	do	1
Tripod, iron	do	1
Articulator, Gysi	do	1
Frame, heating	do	1

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Article	Unit	Quantity
Gold:		
Casting, inlay, 2 dwt	Ingot*	
Lingual bar, long, 2 dwt	Each*	1
Plate:		
22k, 5 dwt	Piece	(*)
24k, 3 dwt	do	(*)
Solder:		
16k	Dwt	(*)
18k	do	(*)
Wire, 18 gage, round	do	(*)
Lamp, alcohol, large, modified	Each	1
Machine, casting, perfection (7)	do	1
Pan, pickling	do	1
Vise, bench	do	1
Vulcanizer, flask:		
Compress	do	1
Tench-Dunham, 22C	do	3
Pencil, indelible	do	1
Tool, universal	do	1
Pliers, adjustable, automobile, 6-inch	do	1

*As required.

i. Chest, Medical Department, No. 62.

Article	Unit	Quantity
Balance, portable	Each	1
Stone, artificial, 4 lbs	Tin	3
Alcohol, denatured, 1 pint	do	3
Teeth, combination set	Set	1
Potassium sulfate, reagent, ¼ lb	Each	1
Arbor, emery, band	Box	1
Blowpipe outfit	Each	1
Blowpipe outfit, burner, Bunsen	do	1
Press	Each	1
Vulcanizer, kerosene	do	1
Gown, operating	do	2
Towel, hand	do	36
Jar, for dressings	do	1
Lathe, hand, modified	do	1
Acetylene unit, cylinder, filled	do	1

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j. Chest, Medical Department, No. 80.

Article	Unit	Quantity
Chest, field, plain, equipped with tray No. 6, plain	Each	1
Acid, tannic, USP	¼ pound	2
Aloin, compound capsule	Dozen	6
Ammonium carbonate, USP	Pound	1
Camphor, USP, 3½-gr. amp. in olive oil, USP, 10 cc, sterile	Dozen	6
Chloral hydrate, USP	¼ pound	4
Lead acetate, ACS	Pound	3
Mercuric oxide, yellow ointment, USP	¼ ounce	4
Mercury bichloride, large, poison, tab., USP	250	1
Petrolatum, liquid, heavy, USP	Quart	2
Silver nitrate, toughened, USP, pencils	Ounce	1
Sodium bicarbonate, USP	Pound	1
Thymol iodide, USP	Ounce	8
Zinc sulfate, USP	Pound	3
Bandage, muslin, 3-inch	Dozen	4
Cotton, absorbent, roll	Pound	5
Applicator, wood	Ctn	1
Stopper, rubber, solid, No. 2	Each	6
Towel, hand	do	12
Box, ointment:		
2-oz	do	6
4-oz	do	6
Pin, safety, large	Card	2
Spatula, 6-inch	Each	1
Bandage, derby, 4-inch	do	8
Case, hypodermic tablets, veterinary	do	1
Mallein test	do	1
Catheter:		
Horse	do	1
Horse, stylet	do	1
Groover, hoof, pointed	do	1
Gun, balling	do	1
Pump, combination	do	1
Retainer	Set	8
Sideline	Each	1
Suture, tape, cotton	Roll	2
Syringe:		
Dose, metal, 2-oz	Each	1
Hypodermic, 10-cc	do	1
Tester, hoof, large	do	1
Thermometer, clinical	do	6
Trocar, horse	do	1
Cresol, saponated, solution, USP	Quart	4
Iodine, 15 gr., and potassium iodide, 22.5 gr., USP	Box	12
Zinc oxide ointment, 1 oz., USP	Tube	12
Bandage, gauze, compressed, 3-inch	Box	4
Suture, silk, braided, non-capillary, 3 sizes	Pkg	2

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Article	Unit	Quantity
Container, metal:		
No. 4	Each	6
No. 5	do	1
No. 7	do	1
No. 14	do	2
Graduate, 60-cc	do	1
Vial, glass, 60-cc	do	6
Emergency veterinary tag	Book	2

k. Chest, Medical Department, No. 81.

Article	Unit	Quantity
Chest, field, plain, equipped with tray No. 6, plain	Each	1
Acid, boric, USP	Pound	2
Alcohol, USP	Quart	6
Ammonia, aromatic spirit, USP	Pint	3
Glycerin, USP	Pound	3
Oil:		
Linseed, USP	Gallon	2
Turpentine, USP	Quart	1
Petrolatum, USP	Pound	3
Soap, hard, USP	Bar	6
Zinc oxide ointment, USP	Pound	1
Bandages, muslin, 5-inch	Dozen	2
Cotton, absorbent:		
Compressed	Ounce	72
Roll	Pound	3
Cotton, absorbent, roll	Pound	3
Soap, white, floating	Bar	6
Basin, hand	Each	2
Battery, dry-cell	do	4
Flashlight	do	1
Flashlight lamp	do	2
Shears, tin, snips	do	1
Knife, hoof, 3 blades	Set	1
Tube, stomach:		
Horse	Each	1
Horse, stylet	do	1
Protein, silver, mild, USP, 4.6-gr. tab	Bottle	1
Tar, pine, commercial	Tin	3
Bandage, gauze, compressed, 3-inch	Dozen	2½
Gauze, sublimated	Pkg	60
Oakum, 2 oz	do	36

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Article	Unit	Quantity
Container, metal:		
No. 12	Each	4
No. 14	do	8
Bucket, canvas	do	1
Pill tile, 5-inch bakelite	do	1
Emergency veterinary tag	Book	2

l. Chest, veterinary, pack, A.

Article	Unit	Quantity
Chest, pack, empty, with insert, plywood	Each	1
Camphor, USP, 36¼-gr. amp. in olive oil, USP, 10 cc., sterile	Dozen	1
Chloral hydrate, USP	¼ pound	1
Petrolatum, USP	Pound	1
Bandage, muslin, 5-inch	Dozen	1
Cotton, absorbent:		
Compressed	Ounce	24
Roll	Pound	1
Towel, hand	Each	2
Soap, white, floating	Bar	1
Pin, safety, large	Card	1
Bandage, derby, 4-inch	Each	1
Groover, hoof, pointed	do	1
Knife, hoof, 3 blades	Set	1
Retainer	do	4
Syringe, dose, metal, 2-oz	Each	1
Tester, hoof, large	do	1
Iodine, 15 gr., and potassium iodide, 22.5 gr., USP	Box	1
Bandage, gauze, compressed, 3-inch	Dozen	2
Gauze, sublimated	Pkg	12
Oakum, 2-oz	do	24
Container, metal, No. 7, 1 each for the following	Each	2
Acid, boric, USP.		
Mercury bichloride, large, poison, tab., USP.		
Container, metal, No. 12, for ammonia, aromatic, USP	do	1
Container, metal, No. 14, 1 each for the following	do	3
Alcohol, USP.		
Oil, linseed, USP.		
Cresol, saponated solution, USP.		
Cover, canvas	do	1
Basin, rubber	do	1
Bucket, canvas	do	1
Emergency veterinary tag	Book	1
Cutter, clinch, 6-inch buffer, QM	Each	1

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m. Chest, veterinary pack, B.

Article	Unit	Quantity
Chest, pack, empty, with insert, plywood	Each	1
Aloin compound capsule	Dozen	1
Silver nitrate, toughened, USP, pencils	Ounce	1
Soap, hard, USP	Bar	1
Thymol iodide, USP	Ounce	2
Cotton, absorbent:		
Compressed	do	24
Roll	Pound	1
Applicator, wood	Carton	1
Towel, hand	Each	2
Pin, safety, large	Card	1
Bandage, derby, 4-inch	Each	3
Pump, combination	do	1
Trocar, horse	do	1
Tube, stomach, horse	do	1
Iodine, 15 gr., and potassium iodide, 22.5 gr., USP	Box	1
Protein, silver, mild, 4.6-gr. tab	Bottle	1
Tar, pine, commercial	Tin	1
Zinc oxide ointment, 1 oz., USP	Tube	6
Bandage, gauze, compressed, 3-inch	Dozen	6
Oakum, 2 oz	Pkg	6
Container, metal, No. 7, 1 each for the following	Each	3
Acid, tannic, USP.		
Lead acetate, ACS.		
Zinc sulfate, USP.		
Container, metal, No. 12, 1 each for the following	do	3
Alcohol, USP.		
Glycerin, USP.		
Oil, turpentine, USP.		
Container, metal, No. 14, for oil, linseed, USP	do	1
Cover, canvas	do	1
Emergency veterinary tag	Book	1

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APPENDIX III

UNIT EQUIPMENT OF MEDICAL DETACHMENTS

■ 1. HEADQUARTERS AND HEADQUARTERS SECTIONS.—The equipment listed below is issued for the following units:

a. All headquarters sections except pack artillery.

b. All battalion sections except those of infantry regiments, cavalry regiments (horse), and pack artillery regiments.

c. All detachments of separate units not otherwise provided for.

Article	Unit	Quantity
Blanket set, small	Each	1
Case tent pins	do	1
Chest:		
MD, No. 1	do	1
MD, No. 2	do	1
MD, No. 4	do	*1
Cocoa unit	do	1
Lantern set	do	1
Water sterilizing set	do	1
Litter, aluminum pole	do	6
or		
Litter (old type)	do	6
Tent, pyramidal, large, complete (with fly, pins and poles)	do	1
Axe, handled, chopping, single-bit, standard grade, 4-pound	do	1
Pick, handled, railroad, 6- to 7-pound	do	1
Shovel, hand, D-handle, round point	do	1
Rope, ½-inch, 40 feet	do	1
Flag, Geneva Convention (Red Cross) marker, with case and staff.	do	1
Bucket, general purpose, galvanized, without lip, 24-gage, 14-quart.	do	3

*One for each regimental medical detachment headquarters except medical regiments and medical squadrons. One for each battalion medical section not part of a regiment, and one for each other type of medical detachment not a part of a regiment as a whole, and having one or more medical officers attached as per Tables of Organization.

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■ 2. For All Battalion Medical Sections, Infantry Battalion.

Article	Unit	Quantity
Blanket set, small	Each	2
Case, tent pins	do	1
Chest:		
MD, No. 1	do	2
MD, No. 2	do	1
Cocoa unit	do	2
Lantern set	do	2
Splint set	do	2
Water sterilizing set	do	1
Litter, aluminum pole	do	12
or		
Litter, (old type)	do	12
Tent, wall, complete (with fly, pins and poles)	do	1
Axe, handled, chopping, single-bit, standard grade, 4-pound	do	2
Pick, handled, railroad, 6- to 7-pound	do	2
Shovel, hand, D-handle, round point	do	2
Rope, ½-inch, 40 feet	do	2
Flag, Geneva Convention (Red Cross) marker, with case and staff.	do	2
Bucket, watering, canvas, 18-quart	do	2
Cover, load, heavy canvas	do	2
Brush, horse, Chinese bristle, leather back	do	2
Bag, canvas, feed, M–1912	do	2

■ 3. For Detachments of All Group Headquarters and Base Squadrons.

Article	Unit	Quantity
Blanket set, small	Each	1
Chest:		
Flight surgeon	do	1
MD, No. 1	do	1
MD, No. 2	do	1
Crash splint unit	do	1
Kit, first-aid, aeronautic	do	1
Splint set	do	1
Water sterilizing set	do	1
Litter, folding	do	6
Guidon, Red Cross	do	1

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■ 4. DENTAL DISPENSARY.—For each dental officer assigned is provided 1 chest, Medical Department, No. 60.

■ 5. VETERINARY SECTIONS.—*a. For sections having more than one veterinary officer assigned.*

Article	Unit	Quantity
Chest, MD:		
No. 80	Each	2
No. 81	do	2
Desk, field	do	1
Axe, with helve	do	1
Pickaxe, with helve	do	1
Shovel, short-handled	do	1
Bucket, G. I	do	6
Fly, wall tent, complete with poles and pins	do	1
Fork, stable	do	1
Marker, Green Cross, with staff	do	1
Picket pins	do	2
Rope, 1-inch, 50 feet	do	1

b. For sections having only one veterinary officer assigned.

Article	Unit	Quantity
Chest, MD:		
No. 80	Each	1
No. 81	do	1
Lantern set	do	1
Desk, field	do	1
Axe, with helve	do	1
Pickaxe, with helve	do	1
Shovel, short-handled	do	1
Bucket, G. I	do	3
Fly, wall tent, large, complete with poles and pins	do	1
Fork, stable	do	1
Picket pins	do	2
Marker, Green Cross, with staff	do	1
Rope, 1-inch, 50 feet	do	1

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c. Veterinary pack equipment.—For each squadron of horse cavalry and each battalion of pack artillery.

Article	Unit	Quantity
Chest, veterinary pack:		
A	Each	1
B	do	1

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APPENDIX IV

MODEL FORMS

1. AMBULANCE LOG.

Co. E, 102d MEDICAL REGIMENT

From 4:15 PM, 15 May 1940 to 7:30 AM, 16 May 1940

Amb. No.	Driver	Departed for front (hour)	En route to clr. sta.			Returned from clr. station (hour)	Remarks
			Checked (hour)	No. of patients			
				Prone	Sitting		
1							Undergoing repair in Hq. Co.
2	E. Jones. Williams	5:18 PM. 6:17 AM.	7:05 PM.	2	4	7:49 PM.	
3	Smith.... Smith....	4:17 PM. 3:25 AM.	6:21 PM. 5:40 AM.	none 4	7 none	6:58 PM. 6:32 AM.	One patient D O A at Clr. Sta.

(*Etc., etc.* One wide line for each ambulance in unit)

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■ **2. Station Log.**

STATION LOG

UNIT.....LOCATION.....DATE.....PERIOD.....

PATIENTS RECEIVED				DISPOSITIONS
NAME & SERIAL NUMBER	RANK	CO	REGT	
WOUND ☐ GAS ☐ SICK ☐ INJURY ☐				DUTY ☐ DIED ☐ EVAC ☐ M P ☐ OTHER ☐ WALK ☐ AMB ☐ TRUCK ☐ TRAIN ☐ OTHER ☐ SITTING ☐ LYING ☐
WOUND ☐ GAS ☐ SICK ☐ INJURY ☐				DUTY ☐ DIED ☐ EVAC ☐ M P ☐ OTHER ☐ WALK ☐ AMB ☐ TRUCK ☐ TRAIN ☐ OTHER ☐ SITTING ☐ LYING ☐
WOUND ☐ GAS ☐ SICK ☐ INJURY ☐				DUTY ☐ DIED ☐ EVAC ☐ M P ☐ OTHER ☐ WALK ☐ AMB ☐ TRUCK ☐ TRAIN ☐ OTHER ☐ SITTING ☐ LYING ☐
WOUND ☐ GAS ☐ SICK ☐ INJURY ☐				DUTY ☐ DIED ☐ EVAC ☐ M P ☐ OTHER ☐ WALK ☐ AMB ☐ TRUCK ☐ TRAIN ☐ OTHER ☐ SITTING ☐ LYING ☐
				DUTY ☐ DIED ☐ EVAC ☐ M P ☐ OTHER ☐ WALK ☐ AMB ☐ TR

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3. Periodic Report of Casualties.

REPORT OF CASUALTIES

Form 86f

Medical Department, U. S. Army
(Authorized June 12, 1940)

Unit_____ From_____m. to_____m. Month_____ Day_____ Year_____

Location: Map_____ Coordinates_____

	THIS UNIT					OTHER UNITS	ENEMY	GRAND TOTAL
	Disease	Injury	Wounded	Gassed	Total			
Remaining								
Received								
Duty								
Died								
Evacuated								
Other dispositions								
Remaining								

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■ 4. CHECK LIST OF EVACUEES.

EVACUATED:
From: Clr. Sta., 5 Div.
Located at: Shippensburg.
(signed:) Edward F. Bly,[1]
Capt., M. C.
Date and hour: 17 June 19—, 6:15 PM.

Medical section
Headquarters First Army
By:
Convoy No. 987,
First Army Med. Serv.

Received:
At Evac. Hosp. No. 617.
Located at: Carlisle.
(signed:) James C. Smith,[2]
Major, M. C.
Date and hour. 17 June 19—, 7:40 PM.

Evacuee				S or P[3]	Diagnosis	Remarks
Name	Army Serial No.	Grade	Organization			
Brown, Henry I	6534278	Pvt	A, 17 Inf	P	GSW: fract, comp, rt. tibia	
Lowe, James F	0–19785	1st lt	19 FA	S	GSW, penetrating, mid. third, left arm	Observe for sec hemorrhage.
Crook, William P	8485722	Sgt	Hq, 14 Inf	S	Nonbattle fract, left radius and ulna	
Langley, Oliver C	7959631	Pvt	D, 21 Inf	P	Obs for measles	Isolate.
Johnson, Frank W	7644781	Corp	H, 14 Inf	P	GSW, perforating, right thorax	May require more morphine. Died en route.[4]
Perry, Jonathan (none)	0–4589	Col	22 FA	S	GSW: Lacerations, rt. forearm	

[1] One copy signed by officer in charge of convoy and left with the evacuation officer of the Clr. Sta., 5 Div., as a receipt.
[2] One copy signed by the receiving officer of Evac. Hosp. No. 617 and given to the officer in charge of the convoy as a receipt.
[3] Sitting or prone.
[4] "May require more morphine" entered at Clr. Sta., 5 Div. "Died en route" entered later by officer in charge of convoy.

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5. EVACUATION LOG.

Medical Section, Headquarters First Army, 17 June 19—

Mission: To evacuate—	Convoy			Itinerary					Number evacuated		
	Number	Composition	Commander	Left pool	Distance traveled, in miles				Returned to pool	P	S	Total
					Out	Loaded	In	Total				
Hosp. Sta., IV Corps	979	1st Plat., Co. D, 458 Med. Regt.	1st Lt. John P. Jay, MC	12:15 AM	6	11	9	26	3:35 AM	22	49	71
Clr. Sta., 16 Div	980	Co. E, 458 Med. Regt., with Ambs. Nos. 5 and 6 of 364 Amb. Co. (Sep.) atchd.	Capt. James E. Blue, MC	12:40 AM	9	16	12	37	5:15 AM	59	63	122
Hosp. Sta. No. 2, First Army (Emergency).	981	Amb. No. 2, 364 Amb. Co. (Sep.).	Pvt. 1cl. Clarence Jackson	12:45 AM	3	7	9	19	2:05 AM	1	0	1
Clr. Sta., 5 Div	987	Co. D, with 1st Plat. Co. E, atchd, 458 Med. Regt.	Capt. Edward F. Bly, MC	4:55 PM	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

1 Convoy not yet returned; these entries not made until convoys return to pool.

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INDEX

	Paragraph	Page
Administration:		
Army functions	151	202
Corps functions	134	186
Medical service	6	3
Aid men	33	47
Aid stations	31, 87, 99	42, 132, 151
Ambulance evacuation:		
Control	58	89
Functions	53	87
Log	App. IV	274
Operations	60	95
Orders	54	88
Organization	52	87
Plan	56	88
Reconnaissance	55	88
Routes	57	89
Shuttles	59	90
Armored divisions, clearing	71	105
Armored units in defense	102	155
Army medical service:		
Administrative responsibility	151	202
Characteristics	150	199
Definition	149	199
Echelons	129	178
Evacuation:		
Chains	175	225
Clearing stations	177	228
Corps and division	176	227
Plans and operations	178	229
Policies	130	179
Headquarters, medical section	161	206
Missions	152	203
Organization	153	204
Preventive medicine	131	182
Reinforcement of subordinate elements	182	236
Supply	190–193	241
Support of—		
Army troops	179	232
Cavalry with army	180	234
Reconnaissance and security detachments	181	235
Surgeon	154–208	204
Units:		
Ambulance	165	210
Chain of command	162	209
Clearing	166	211
Collecting	164	209
Depot	171	220
Hospitals	167–170	213
Veterinary	172–174	221
Artillery casualties	47	73
Attached medical personnel:		
Attack	87	132
Corps troops	141	191
Defense	99	151

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	Paragraph	Page
Attached medical personnel—Continued.		
Division:		
Aid men	33	47
Aid stations	31	42
Battalion surgeon	35	49
Dental service	36	51
Detachments:		
Control	27	38
Definition	27	38
Organization	28	39
Separate battalions	39	62
Supply	29	41
Units of various arms and services	38	54
Dispensaries	30	41
Litter squads	32	46
Regimental surgeon	34	47
Veterinary service	37	51
Attack:		
Ambulances	90	139
Armored divisions, collection and clearing	93	144
Attached personnel	87	132
Characteristics	83	128
Clearing	91	139
Collection	89	138
Division service	88	137
Doctrines	86	131
Effort in special types	92	140
Influence upon medical service	85, 185	130, 239
Types	84	128
Battalion:		
Corps	139, 143	189, 192
Medical section	39	62
Surgeon	35	49
Bivouac medical service	76	116
Camp:		
Definition	72	107
Medical service	73	107
Prophylaxis station	75	115
Sick call	74	111
Casualties:		
Abandonment	11, 106	9, 158
Concentration	11	9
Distribution in time and space	14	18
Marching columns	80	123
Report	App. IV	274
Retention at clearing station	70	105
Sorting	11	9
Transport	13	16
Cavalry with army	180	234
Chests, Medical Department	App. II	251
Civil hospitals	73	107
Clearing:		
Armored divisions	71, 93	105, 144
Attack	91	139
Commander	63	99
Definitions	61	98
Disposition of patients	67	102
Evacuation of station	68, 177	103, 228

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	Paragraph	Page
Clearing—Continued.		
Medical records	66	102
Operations	65	102
Retention of casualties	70	105
Station, establishment	64	100
Surgical hospitals	69	104
Units	62, 166	98, 211
Collecting station	44, 48	66, 83
Collection:		
Attack	89	138
Commander	42	65
Definitions	40	62
Division of unit for tactical employment	49	84
Fast moving attacks	51	86
Forward displacement of station	48	83
Liaison section	46	71
Litter bearers	47	73
Location of station	44	66
Marching columns	80	123
Message center	43	66
Relief	50	85
Units	41, 164	64, 209
Combat, preparation	13	16
Command, army medical units	162	209
Commanders:		
Clearing unit	63	99
Collecting unit	42	65
Responsibility	3, 11	2, 9
Communication lines	126	176
Concentration	183	237
Continuity	11, 17	9, 21
Convalescent hospital	169	218
Corps medical service:		
Administrative responsibility	134	186
Attached personnel	140	191
Battalion	139, 143	189, 192
Characteristics	133	184
Definition	132	184
Echelons	129	178
Evacuation policy	130, 145	179, 194
Headquarters	138	188
Organization	135	187
Plans and orders	148	197
Position in army chain of evacuation	142	192
Preventive medicine and sanitation	131, 146	182, 195
Reinforcement of division services	144	194
Supply	147	195
Support of troops	141	191
Surgeon	136, 137	187, 188
Counteroffensive	104	156
Deaths at clearing stations	68	103
Decentralization of control	17	21
Decisions	11	9
Defense operations:		
Armored units	102	155
Attached personnel	99	151
Characteristics	94	145
Counteroffensive	104	156
Division service	100	152
Doctrines	98	149

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	Paragraph	Page
Defense operations—Continued.		
Influence upon medical service	97, 188	147, 241
Outposts	103	156
Positions	96	146
Security detachments	103	156
Types	95	145
Various situations	101	154
Definitions:		
Army	149	199
Camp and bivouac	72	107
Clearing	61	98
Collection	40	62
Corps	132	184
Detachments	27	38
Division medical service	16	21
Retrograde movements	105	158
Delaying action:		
Classification	112	166
Single position	113	167
Successive positions	114	167
Dental service, attached personnel	36	51
Depot	171	220
Detachments:		
Control	27	38
Definition	27	38
Efficiency	27	38
Organization	28	39
Separate battalions	39	62
Supply	29	41
Units of various arms and services	38	54
Dispensaries	30	41
Division medical service:		
Attack	88	137
Defense	100	152
Definitions	16	21
Equipment	20	26
Installations	21	30
Means and general method	18	25
Operation	17	21
Organization	16, 19	21, 26
Reinforcement	24, 144	34, 194
Supply	26	36
Support by higher echelons	25	35
Surgeon, division	22	30
Veterinary service	23	34
Doctrines	3	2
Echelons	2, 16, 129	1, 21, 178
Economy of force	17	21
Envelopments	84	128
Equipment:		
Chests	App. II	251
Division medical service	20	26
Individual	App. I	243
Unit, medical detachments	App. III	270
Evacuation:		
Ambulance	52–60	87
Army operations:		
Chain	175	225
Clearing stations	177	228

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	Paragraph	Page
Evacuation—Continued		
Army operations—Continued		
Corps and divisions	176	227
Plans	178	229
Clearing station	65, 68	102, 103
Corps medical service	142	192
Hospitals	168	215
Lag	15	20
Log	App. IV	274
Operation	9	6
Policies, corps and army	130, 145	179, 194
Responsibility	13	16
Retrograde movements	106	158
Flexibility	13, 17	16, 21
Forms, model	App. IV	274
Functions of medical service	1, 2	1
Headquarters corps medical service	138	188
Hospitalization	10, 73	8, 107
Hospitals:		
Civil	73	107
Convalescent	169	218
Evacuation	168	215
Veterinary	173, 174	222, 224
Initiative	13	16
Installations	21	30
Kits	App. I	243
Laboratory unit	170	219
Liaison section, collection unit	46	71
Litter bearers	47	73
Litter squads	32, 87	46, 132
Logs	App. IV	274
Marches:		
Columns	80	123
Conduct	78	119
Control of units	82	126
Disposition of units	81	125
Influence upon medical service	184	238
Security detachments	79	121
Medical Department:		
Administration	6	3
Doctrines	3	2
Functions	1	1
Mission	4	2
Organization	1, 2	1
Responsibilities	5	3
Message center	43, 58	66, 87
Mission	4, 152	2, 203
Mobility	13, 17	16, 21
Mountain warfare	127	176
Night operations	124, 125	175
Orders:		
Ambulance units	54	88
Corps medical service	148	197

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	Paragraph	Page
Organization:		
Ambulance evacuation	153	204
Army medical service	52	87
Corps medical service	135	187
Division medical service	19	26
Medical service	1, 2	1
Outposts	77, 103	116, 156
Patients:		
Disposition	67	102
Personal relationship	11	9
Plans	11, 148	9, 197
Prevention of disease and injury	8	5
Preventive medicine	131, 146	182, 195
Priority	73	107
Prisoners of war	47, 67	73, 102
Prophylaxis station	75	115
Pursuit:		
Considerations	121	173
Direct pressure force	122	174
Encircling force	123	174
Influence upon army medical service	186	240
Railway	47	73
Reconnaissance, ambulance commanders	55	88
Records	66, 67	102
Regimental surgeon	34	47
Reinforcement:		
Division medical service	24, 144	34, 194
Subordinate elements by army	182	236
Reserve battalions	87	132
Responsibilities:		
Commanders	3, 11	2, 9
Medical service	5	3
Retirement	115	168
Retrograde movements:		
Considerations	106	158
Definitions	105	158
Delaying action:		
Classification	112	166
Single position	113	167
Successive positions	114	167
Doctrine	107	162
Retirement	115	168
Withdrawal from action:		
Classification	108	163
Daylight	109	163
Medical service	111	165
Night	110	164
River lines:		
Attack:		
Characteristics influencing medical service	117, 187	170, 240
Considerations	116	170
Defense:		
Cordon	119	172
Mobile	120	173
Types	118	172
Routes, ambulance	57	89

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	Paragraph	Page
Security detachments	79, 103, 181	121, 156, 235
Shuttles, ambulance	59	90
Sick call	74	111
Stations	21	30
Supply:		
Army	190–193	241
Army units	163	209
Corps	147	195
Detachments	29	41
Division	26	36
Responsibility	7	5
Support:		
Army troops	179	232
Cavalry with army	180	234
Corps troops	141	191
Division medical service	25	35
Reconnaissance and security detachments	181	235
Surgeon:		
Army:		
Medical section of headquarters	161	206
Relations with—		
Chief surgeon, theater of operations	160	206
Commanders of army medical units	157	205
Regulating officer	159	206
Staff	158	206
Surgeons	155	204
Unit surgeons of army troops	156	205
Battalion	35	49
Corps	136, 137	187, 188
Division	22	30
Regimental	34	47
Relations with command and staff	12	12
Surgical hospitals	69, 167	104, 213
Tactical considerations:		
Attack	185	239
Concentration	183	237
Defense	188	241
Distribution of casualties	14	18
Doctrines	13	16
Evacuation lag	15	20
Marches	184	238
Pursuit	186	240
Retrograde movements	189	241
Surgeon's command and staff relations	12	12
Tentage	73	107
Veterinary service:		
Attached personnel	37	51
Company, separate	172	221
Convalescent hospital	174	224
Division	23	34
Evacuation	173	222
Withdrawal from action:		
Classification	108	163
Daylight	109	163
Medical service	111	165
Night	110	164

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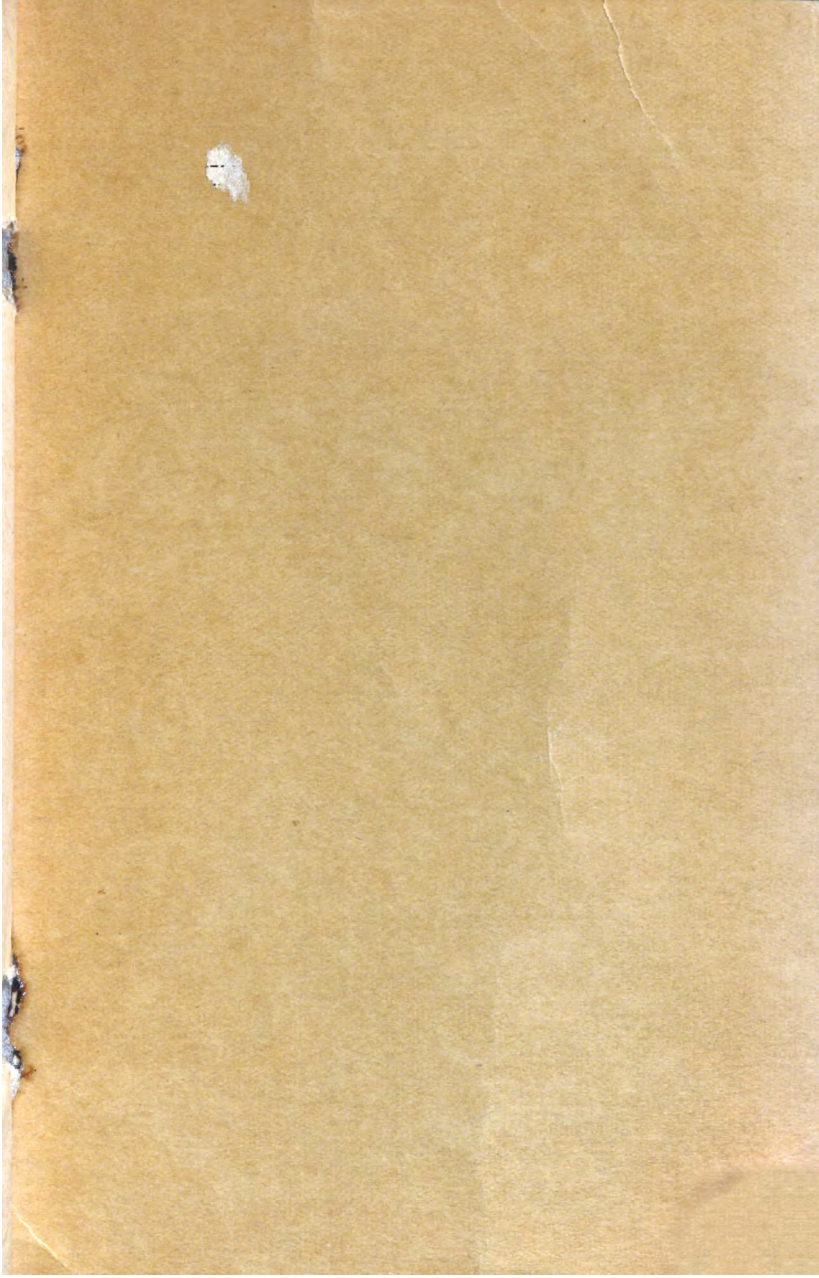
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