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Training Circular No. 12

Combined Training of a Division

Revised to
OCTOBER 10, 1918

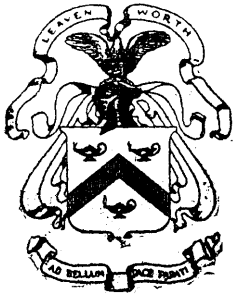


WAR PLANS DIVISION
October, 1918

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WAR DEPARTMENT,

WASHINGTON, *October* 10, 1918.

The following pamphlet, entitled "Training Circular No. 12, Combined Training of a Division," revised to October 10, 1918, is published for the information and guidance of all concerned.

(062.1 A. G. O.)

BY ORDER OF THE SECRETARY OF WAR:

PEYTON C. MARCH,
General, Chief of Staff.

OFFICIAL:

P. C. HARRIS,
The Adjutant General.

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TRAINING CIRCULAR No. 12

COMBINED TRAINING OF A DIVISION

(REVISED TO OCTOBER 10, 1918)

Divisions that have completed the preliminary and basic course of training, as prescribed in Training Circular No. 5 should be given a course of instruction that will require troops to apply, practically, the training received and which will lead them also into the more advanced work of the minor tactics of open warfare. Such divisions will proceed at once to carry out the character of training as herein provided.

Experience abroad demonstrates that troops not trained in the operations of open warfare are not able to take full advantage of those conditions when they arise and are slow to adapt themselves to them. Troops not well trained to maneuver in the open fail to utilize the terrain and to use the particular weapons which are required in open warfare.

It is desirable and essential that all organizations should be given thorough training in open warfare, before their departure abroad, where the opportunities are more favorable for the trench training but less so for maneuvering.

During the entire period of training of the officer and the soldier the fundamental differences between trench warfare and open warfare should be deeply impressed upon them in order that they may intelligently appreciate their contrasting conditions and be prompted to follow the proper course of conduct in each.

The essential difference between open and trench warfare, so far as effect upon formations is concerned, is characterized by the presence or absence of the rolling barrage ahead of the infantry. From a tactical point of view the method of combat in trench warfare presents a marked contrast to that employed in open warfare and the attempt of assaulting infantry to use trench warfare methods in an open warfare combat will be successful only at great cost. Trench warfare is

marked by uniform formations, the regulation of space and time by higher command down to the smallest details, absence of scouts preceding the first wave, fixed distances and intervals between units and individuals, voluminous orders, careful rehearsal, little initiative upon the part of the individual soldier. Open warfare is marked by scouts who precede the first wave, more irregularity of formations, comparatively little regulation of space and time by the higher command, the greatest possible use of the infantry's own fire power to enable it to get forward, variable distances and intervals between units and individuals, use of every form of cover and accident of the ground during the advance, brief orders and the greatest possible use of individual initiative by all troops engaged in the action.

All unit commanders should seek to develop, in their subordinate leaders, the spirit of self-reliance and enterprise, tempered with tactical judgment, that will enable them to fulfill their role when they pass from trench warfare to the open.

Officers and noncommissioned officers of all grades can be taught much of the principles and methods of minor tactics through carefully conducted tactical walks and terrain exercises and this form of instruction should be freely given. The higher commanders, in particular, can be given valuable tactical training by such means, without requiring the presence of regiments and brigades and thus save much time and the needless exertion of troops.

This circular seeks to present the general scope of training for the various arms in a division so as to fit them for open warfare, but leaves to the division commanders the selection of the particular features which the conditions in the vicinity of their cantonments will suggest as best adapted to the needs of the command.

NIGHT WORK.

The troops of all arms should, in units of all sizes, practice the technique of their arm at night and, as well, participate in night exercises. Tactical walks and terrain exercises can be used to develop leadership in night conditions.

INSTRUCTION OF SENIOR AND STAFF OFFICERS.

The tactical instruction of brigade commanders, staff officers and the regimental field officers is under the direct per-

sonal supervision of the division commander. Staff officers are included in the instruction, as most of them have very important functions to perform in the preparation of operation orders. The courses of instruction for such officers should embrace tactical walks, terrain exercises and field exercises with troops. Constant training and practice in the framing of orders, based upon assumed tactical situations, is absolutely essential for such officers.

It is important that problems should be created that will involve the use of the various means of communication within a division and liaison between infantry, artillery and aeroplanes.

TACTICAL WALKS AND TERRAIN EXERCISES.

Tactical walks by officers of all grades for their subordinate leaders should be conducted by taking the group, under instruction, to given points on the terrain where a tactical situation has been previously conceived and the tactical situation given to them, after which various members are called upon to state the manner or the means by which they would meet the given situation. This being done orally and as many as possible being permitted to give their solutions before the instructor comments on them.

Terrain exercises are similarly conducted, except that the classes are required to put in writing the measures that they would employ to meet the situation given. This requires each officer to form his own decision independently and to commit it to paper before hearing any discussions. The tactical walk is the more elementary form of instruction, but not so thorough and exacting for those instructed.

Where it is found that officers do not know how to prepare and conduct such exercises a senior officer should conduct an exercise for them and then, after one or two reviews of the exercise, permit them to conduct the same exercise for their subordinates. The chief of staff should verify the manner in which such exercises are conducted throughout the division. The example of the division commander, conducting such exercises himself for senior commanders, will not only result in the better instruction of those officers, but will stimulate such instruction amongst all the troops.

COMBINED TRAINING OF ALL ARMS.

Each of the different arms of the service in the division, having become familiar with the combined use of its own varied weapons, so as to be able to develop their maximum combined fire power, they should be trained together for the purpose of securing efficient co-ordination of maneuver and liaison and to be able to develop maximum fire power of their combined weapons. The command and staff have their best opportunity for functioning, tactically, in such combined exercises, the repeated practice in such tactical functioning is essential to their training and development.

Combined exercises for all arms should begin with the joint participation of two or three of the smaller units of each in simple exercises, progressing into larger combinations until all the troops of the division are employed and the entire staff and command are required to function under simulated battle conditions.

In order that the administrative and technical staffs may be trained in their several activities pertaining to the administration and maintenance of troops on the march, the division should, where weather conditions permit, be taken on a practice march of not less than three days. This exercise could profitably be preceded by preliminary marches of the large sub-units of the division involving the march conditions of supply, march discipline, security, etc.

INFANTRY.

This arm should be trained primarily to meet the open warfare conditions that result as soon as the enemy's highly organized system of defense is penetrated. The striking characteristics and requirements of such open warfare are the following:

(*a*) Scouts, at wide and irregular intervals (10 to 50 paces), precede the first wave at varying distances up to 500 meters. Their purpose is to compel the enemy machine guns to open fire and so disclose their location or be run over by the scouts.

(*b*) *Irregularity of Formations.*—Thin lines in first wave with men 5 to 10 paces apart. One or two automatic rifle teams per platoon in this line. The succeeding lines at dis-

tances that will insure elasticity and permit of maneuvering the supports and the reserves so as to envelop the enemy.

(*c*) Comparatively little regulation of space and time by the higher command.

(*d*) The greatest possible use of the infantry's own fire power to enable it to get forward, with or without the support of artillery.

Platoons must be trained to develop the fullest combined fire power of its weapons.

Companies to advance in conjunction with the support of machine guns, at the same time developing the maximum fire power of all its weapons.

Battalion commanders must understand how to utilize machine guns, one pounder guns and light mortars so as to advance the companies under the supporting fire of these weapons.

Regimental commanders must not only understand the use of all the weapons of the regiment, but, as well, how to employ attached pieces of artillery to support the advance.

(*e*) To advance with variable distances and intervals between units and individuals and so as to take advantage of every form of cover and accident of the ground. Development of the greatest individual initiative by all troops engaged.

Open warfare consists primarily of the power to maneuver and of fire effect. The power to maneuver is acquired by a thorough training of all the units in their deployments and formations for attack, advance, etc., and then followed by a combination of the units in increased size, with corresponding instruction in deployments, formations, methods of advance, etc., until the entire division is able to work harmoniously and efficiently to the end of overcoming the enemy. It is not essential that each one of these steps be wholly accomplished in itself before passing on to a combination of the higher units, but, on the contrary, in order that all may become acquainted with the instruction and to exemplify the needs of the training of the smaller units, the schedules should provide for the training of the larger units to some degree during the period when the smaller units must still continue their training.

The number and variety of weapons now employed by infantry makes it necessary that the different infantry units should be trained in the combined use of them.

Platoons and companies are permanently equipped with four weapons of different characteristics and it is essential that their commanders should be constantly practiced as to how and when they should be jointly employed so as to develop maximum fire power.

Battalions have attached to them, under varying conditions, machine guns, one pounders, trench mortars and field artillery guns and the battalions should be extensively trained in co-operation with these arms for the same purpose.

This combined training in all the infantry weapons and, in conjunction with accompanying pieces of artillery, in both fire and movement, is fundamental to all infantry fighting. Reports from the A. E. F. indicate that the recent operations of our army reveal deficiencies in this respect which can be corrected during the early periods of battalion training. See "Combat Instructions, A. E. F. No. 1,348" for further details on combined training.

Patrolling is still, as it always has been, one of the most important features of training, as it permits the application of a large proportion of the principles of minor tatics, which are of value to leaders of all units. It is particularly necessary that platoons and companies have their men understand the means and methods of handling small bodies in the advance, on the march, in reconnaissance, etc. The qualities of resource, initiative and judgment are best developed by exercises in patrolling. The schedules for the field training should permit of all units having a proportion of time and they should be required to get off into unknown and varied ground in order that new situations and conditions will arise requiring unexpected decision. The habitual working over known ground tend to make methods set and sterotyped, which is prejudicial.

The successive steps or phases of an advance should be impressed upon subordinate leaders, that they may train their units in the conditions peculiar to each, as follows: (1) The passage from conditions of the march to the advance, under artillery fire, when the object is to get forward and avoid losses from the enemy's artillery, without firing. (2) The passage from such a phase of the advance into the zone where the troops come under both infantry and artillery fire and the object is still to advance without firing, as long as possible, but in formations that will permit the quick deployment into

suitable formations for delivering fire. (3) The working forward of the units in the zone of effective infantry fire, each availing itself of the use of the various arms in the platoons to close with the enemy, either forcing him from his position or by capturing and destroying him. It being remembered that every hostile contact or advance will not necessarily follow the above sequence of phases, but that this fact, however, does not modify the action that each leader would take if suddenly brought under conditions similar to any one of the three phases.

During that stage of the advance when the infantry must open fire, the all important duty of the leaders is involved in "fire control" and "fire direction" and because the efficacy of the fire can only be in proportion as the leaders understand how to properly direct the fire and control it. The "fire discipline" of the men, which will insure their delivering a well aimed fire, in accordance with the direction of their leaders, must be the final proof of the degree of musketry training which the command has received and, only as this is efficient and effective, can the advance be continued. Therefore, in the field training of the troops, the subjects of marksmanship and musketry must receive careful consideration. The details of such instruction are given fully under the heading of the "infantry rifle."

FORMATIONS.

The extended order drill of the infantry units is laid down in the Infantry Drill Regulations and in Instructions for the Offensive Combat of Small Units (W. D. Doc. No. 802), which is the groundwork for the deployments. The formations to be taken up during any one of the three phases of the advance is left primarily to the judgment of the leaders, which will be influenced by the conditions of the terrain, enemy's fire, etc. Under artillery fire, short narrow columns, in staggered formations, are usually the best. The intervals between such being, where possible, greater than the area of bursts of the shrapnel, which is normally about 20 yards wide and 120 yards long. During this phase, the object is to present the least vulnerable target to the hostile artillery as the advance goes forward and gradually approaches the area of the infantry fire, when it may be expected that movement will be more difficult and the fire will have to be returned. The leading columns come

more into regular lines and resolve themselves into lines of skirmishers with wide intervals backed up by small columns in rear.

In general, the brigades of a division are deployed side by side.

The two regiments of the brigade will usually be deployed for the attack side by side, the brigade commander holding under his orders about one battalion as a reserve. Under some conditions but one regiment would be committed to the attack, the other being held as reserve. The brigade machine gun battalion would usually be allotted tasks to support the attack with their fire or to cover the flanks, or both.

The regiments form on either the front of one battalion, supported by the second and the third battalions, or on a front of two battalions with one battalion held in reserve. The deployment of all three battalions side by side would be exceptional.

Within the battalion, a deployment may be made on either one, two or three companies, with the others in support, in one or two lines. The deployment of four companies side by side would be most exceptional.

Within the company, the deployment is usually made with two platoons in front, as the attacking platoons and two platoons in the rear as re-enforcing platoons, although it may be necessary to deploy three or even four platoons on one line, but it is more general for the company to be formed with both attacking and re-enforcing platoons.

Within the platoons there are usually two sections placed in the front line supported 20 or 25 paces in rear by the two remaining sections.

The above can only be taken as general guides in formations, the principle being that the front is kept narrow where there is uncertainty as to the location of the enemy or the degree of resistance expected is great. With the decreasing likelihood of serious resistance, the necessity for extensive depth formation is less important.

Supports are essential to feed a forward line so as to maintain its strength and forward movement, whereas the units in reserve, further to the rear, are primarily to enable the commander to meet the unexpected appearance of troops in a new direction or to replace the supports in advance which may have been absorbed by the leading line.

Troops are placed on these formations chiefly by orders, not by formal drill book commands. The orders specify the relative positions of the sub-units, intervals, direction, etc., and are presented in as brief and direct a manner as will insure each unit understanding its action.

"The German machine guns constitute the chief weapon to be combatted by our infantry. The platoon commander must oppose them by fire from his rifles, his automatics and his rifle grenades and must close with their crews under cover of this fire and of ground beyond their flanks. The battalion commander, in addition to the weapons of the platoon, has his machine guns, one-pounder gun, light mortars and accompanying field piece. The battalion commander who makes the most intelligent use of the combined fire of these weapons and of the ground will lose the fewest men. The success of every unit from the platoon to the division must be exploited to the fullest extent. Where strong resistance is encountered, reinforcements must not be thrown in to make a frontal attack at this point, but must be pushed through gaps created by successful units, to attack these strong points in the flank or rear." Combat Instructions (Confidential No. 1,348) General Headquarters, American Expeditionary Forces, September 5, 1918.

RIFLE FIRE.

In order to develop familiarity with the rifle and marksmanship, all men armed with the rifle should be required to have practice in ranges up to and including 600 yards, as specified in special course "C" directed by change No. 20 S. A. F. M. and practice in combat firing as specified in Small Arms Firing Manual and in accordance with pamphlet on "Musketry" (W. D. Doc. No. 631), in order that all men may acquire fire discipline and all leaders the art of fire control and fire direction.

Much of the musketry training of the leaders can be done by tactical walks and terrain exercises, rendering the actual expenditure of ammunition unnecessary. For such exercises, the use of the aiming tripod described on Page 123, "Musketry," War Department Document 631, would be of value. The situations for fire problems as given in Chapter XXIII of the same pamphlet would serve as guides for exercises of actual firing and for the conduct of tactical walks or terrain exercises.

The character of rifle instruction and musketry training and the methods to be employed in them are tabulated for the ready reference of those in charge of such training.

THE INFANTRY RIFLE.

I. Rifle instruction divides itself into two distinct phases:

(*a*) The training of the riflemen in marksmanship, individual and collective.

(*b*) The training of leaders in the utilization of the collective skill of bodies of marksmen for the attainment of given tactical ends. This phase is termed "Musketry".

II. Training in marksmanship is to be directed to the following ends:

(*a*) Individuals are to be considered as satisfactory in marksmanship upon attaining the ability to make a total of 240 points in Record Practice, Short and Mid Range, Special Course C, and when their manipulation of the rifle in "Manipulation and Rapid Fire Exercises" as prescribed in recent changes in Small Arms Firing Manual is efficient and automatic.

(*b*) Company organizations are to be considered satisfactory in marksmanship provided:

1. That not less than 60% of the individuals armed with the rifle are classed as satisfactory as prescribed in (*a*) above.

2. That not less than 5% of the individuals armed with the rifle make 300 points in Record Practice, Short and Mid Range, Special Course C.

III. The texts for instruction in marksmanship are:

The Small Arms Firing Manual, 1913, edition corrected to March 15, 1918 (or previous editions containing Changes No. 20).

Soldiers' Handbook of the Rifle and Score Book for Special Course C, arranged for the U. S. Rifle, Model of 1917. (W. D. Doc. No. 698).

IV. Musketry training divides itself into three phases, namely:

(*a*) Training the individual marksman to that *state of mind* in which he is always ready and does place his knowledge of and skill in marksmanship at the disposal of his leader—to be used promptly and efficiently as the latter may

dictate. In the aggregate, this training is called "Fire Discipline" and includes not only skill in marksmanship, but also an intelligent understanding of fire orders, target designation and fire distribution and the requisite morale and technical skill involved in their precise execution.

(*b*) Training of subordinate fire leaders in the technique of fire to the end that they can utilize the skill of the marksmen they are leading to place an effective fire on a given target from a given position and at a given time and this in compliance with orders from higher authority.

This phase of musketry training is known as "Fire Control" and includes a knowledge of and skill in:

1. The use of instruments:
   (1) Field glass.
   (2) Range finder.
   (3) Mil scale.
2. Estimation of distances:
   (1) Individual.
   (2) Collective.
3. Reconnaissance, selection and occupation of positions.
4. Visual Training—target finding.
5. Target destination.
6. Distribution of fire.
7. Observation and adjustment of fire.
8. Use of proper rates of fire.
9. Fire for effect.
10. Issue of fire orders.
11. Securing obedience to fire orders.
12. Training individuals in fire discipline.

(*c*) Training of the superior fire leaders in the application of the technique of their subordinates for the attainment of a given tactical end. This phase of musketry training is known as "Fire Direction" and includes:

1. Choice of objective.
2. Choice of positions.
3. Time for opening fire.
4. Duration of fire.
5. Ammunition supply.
6. Movement.
7. Issue of fire orders in conformity with the tactical end to be accomplished.

V. In all musketry training there should be a thorough preliminary training without ball cartridges before field firing is undertaken. Suggested exercises of this nature will be found in "Musketry" (W. D. Doc. 631) which, with the Small Arms Firing Manual, is the text on this subject.

MACHINE GUN TRAINING.

Machine gun training should be directed toward the perfection of open warfare methods.

The efficiency of gunners in the mechanical operation of the gun and their skill in machine gun marksmanship is a fundamental requisite.

Other most important requirements are as follows:

The perfection of march discipline—especially over difficult ground.

Maintenance of transportation in excellent condition at all times.

Perfection in the use and utilization of means of communication.

The technique of fire:

Use of instruments.
Determination of ranges.
Target designation and recognition.
Observation and adjustment of fire.
Calculation of firing data.
Rapid preparation and conduct of fire without maps.
Indirect and overhead fire without maps.
Manipulation of sheaf.

Satisfactory solutions of tactical problems involving:

Reconnaissance, selection and occupation of positions.
Issuing of fire orders,
Field firing,
Field fortification.

DETERMINATION OF FIRING DATA FROM MAPS.

The refinements of position warfare are best taught in France and, though it is not prescribed that this work is to be eliminated from the program of instruction, still it is to be subordinated to the creation of resourceful open-warfare leadership and teamwork.

ARTILLERY.

Except in the training of the division as a unit in exercises of the arms combined, training of field artillery units will be as prescribed in instructions for training to be issued by the chief of field artillery.

In this training of the division as a unit every effort will be made to co-ordinate the special work of the artillery with that of the other arms and to develop the team work of the division as a whole. Exercises will be had in the solution of definite tactical problems requiring the artillery commanders of all grades to perform those duties which would fall upon them in combat, such exercises being had frequently at night. Definite combat orders will be required of artillery commanders in accord with the combat order of their next higher commanders. These commanders will be required to make proper reconnaissances; to occupy properly their positions; to prepare firing data; to execute simulated fire of a class appropriate to the assumed situation; to establish the proper communications; to organize and simulate proper ammunition supply; to make provisions for advance and withdrawal while maintaining proper support of the infantry; to provide cover and shelter appropriate to the assumed situation; to prepare plans for reinforcement and replacement of artillery units; to practice all the usual means of observation and to simulate the use of those not available.

In divisional exercises in open warfare, which will be those most frequently had, the artillery will be required to demonstrate its ability to move quickly from position to position and to promptly open fire in its new position; to prepare firing data by rapid methods; to establish rapidly the various classes of communications and to maintain them with a minimum of inconvenience to other troops and to establish and operate a proper artillery intelligence service.

In all these exercises, all forms of discipline, march discipline, camp discipline, military courtesy, fire discipline, observance of sanitary and hygienic regulations; care of materiel and horses, proper observance of the rights of the inhabitants of the locality, etc., will be rigidly enforced.

ENGINEERS.

The training of divisional engineer regiments will continue along the general lines outlined in courses II and III, Engineer Training Manual, in accordance with the latest and most

authoritative books, pamphlets, manuals, etc. on the subjects treated in these courses. The training of divisional engineers as infantry must be carried on along with their general engineer training. Instruction should be given in minor infantry tactics and the use of infantry weapons with particular emphasis on the use of the rifle and bayonet, musketry, the use of cover, concealment, flexibility of formation and ability to maneuver.

In the general engineer training of these troops, particular stress should be laid on engineer reconnaissance, on construction of wire entanglements, camouflage, field fortifications, hasty bridges and river crossings, including instruction in pontoon work, consolidation of the terrain and the organization and handling of working parties from the other arms. The instruction of divisional engineers must not only aim at teaching the engineers how to execute the various engineer work which is likely to be encountered but what is probably more important, it must prepare the engineers to lay out and supervise work done by labor details. The amount of necessary engineer work in present day warfare is so enormous that much of it will have to be performed by troops of other arms. For this reason an important duty of the divisional engineers is the pioneer training of the other arms in the division. This training will conform to the principles outlined in Staff Instruction Circular No. 47, Training and Instruction branch, War Plans Division, General Staff, October 5, 1918, copies of which have been issued to all divisions.

In order to execute their duties efficiently division engineers should maintain the closest possible liaison with the divisional staff and all arms represented in the division. Study should be made of the tactics of the other arms and of the tactical employment of the various weapons at their disposal.

A large percentage of engineer work in the present war has to be done at night, so constant drill and training in scouting, patrolling and in executing various engineer operations at night must be carried on. Night work must also be carried on in conjunction with other arms. The organization and handling of working parties from other arms and issuing of tools, etc. at night is much more difficult than in daylight and frequent practice must be had in it to avoid confusion and delay.

SIGNAL TROOPS.

The program of instruction outlined in Training Circular No. 6, War Department, has prepared the signal battalion for progressive work with the division in maneuvers outside of trench warfare. The radio and wire companies are essentially mobile units, prepared to move with detachments, flank, advance and rear guards.

The radio company maintains communication with higher headquarters, adjacent columns and where wire is impracticable.

The wire company connects division headquarters with brigades and major subordinate units and artillery.

The battalion commanders, captains and lieutenants in command of their respective units should make up tactical problems with imaginary troops, involving route, distance and time considerations. Geodetic survey maps of camp localities can be obtained and used to advantage. Problems can afterward be worked out on the terrain. Designation of sections and intermediate stations, with messenger service and record file sheets at each station will be required.

This instruction can best be carried out with the actual troops and opportunities will be sought to send signal troops with regiments and brigades on combat and march maneuvers. The quick substitution of radio service, where troops move too far apart for wire connection, will give practice in arranging continuity of communication. Opportunities for visual signal lines will be sought, code book and cipher work continued. As pigeons are trained, they can be used between the forward commands and the (assumed) corps headquarters at the pigeon cote, especially if wire or radio communication with the camp is not maintained.

Section leaders will be given practice in the handling of their sections to connect up the troops, to which they are assigned, to the main body on the march, during halts as per time schedules arranged and in combat exercises, both offensive and defensive. Opportunities for night practice in radio, wire and messenger work will be sought and utilized.

In marches involving considerable bodies of troops, arrangements should be made with the telephone and telegraph companies, to take over the office at small towns and have signal corps operators assist the local operator with the increased

business. Permission to cut in a loop on one telegraph and one long distance telephone wire can usually be arranged and collections made. These loops can be run to division headquarters and save much delay and messenger service. It also gives training along an important incidental open-warfare duty. If the signal troops do not increase the efficiency of the local facilities, they fail in an important function.

The outpost company of the signal battalion is not concerned with the regimental communications in open warfare. Its platoons are withdrawn from the regiments to which assigned in trench warfare and assist the wire company in extending its lines in the brigades and installing such special lines as are required. Lines of information are extended by the outpost company forward to regimental headquarters, using service buzzers as telephones.

Familiarity with the commanders, headquarters and staffs is of great importance to give quick service and avoid mistakes. Reconnaissance, selection of routes, care of animals and improving means are matters that fall upon section leaders when detached. Complete reports and diaries should be kept of the daily work of the various sections in consecutive maneuvers so that the resourcefulness of the unit leaders can be discerned, good work commended and poor work criticized.

In the Drill Regulations for Signal Troops, the open warfare directions along technical lines are given for wire companies in paragraphs 462-487, for radio companies, paragraphs 516-519 and for outpost companies paragraphs 556-568. Signal organization and equipment, prior to the present war, were based entirely on warfare in the open. There have been many changes in battalion equipment and the personnel is now not mounted, but the battalion can function in the open with its new equipment about as well as it could with the old. Compared with trench warfare the amount of communication is small, being limited to service for the higher unit commanders. Orders for installing lines will be very general and practically every detail is left to the initiative of the signal officers concerned. March discipline should receive active attention in all signal detachments, neatness and uniformity in clothing and equipment and the prompt rendering of military courtesies by individuals and units should be required.

The SIGNAL PLATOON of the headquarters company of infantry regiments will, in open warfare, install, maintain and

operate the inter-communication system of the regiment. If a telephone system is put in at a halt, it must be quickly recovered. Proficiency in visual signalling will be tested with flags, signal lamps, fire-work signals and panels for aeroplanes. Runners, as messengers, will be given practice in unfamiliar country and at night. Practice with codes and conventional signals will be continued, that all the men shall interpret quickly and forward flank or rear signals that are seen. The team work of the signal platoon with the units of the regiment will be developed.

The ARTILLERY liaison officers accompany the infantry units in the advance: It is of great importance that communications between the front line and artillery be maintained whenever contact with the enemy is expected. The Infantry lines, therefore, should be placed at the disposal of the artillery observers until the artillery system is installed.

MEDICAL TROOPS.

The substance matter in regard to discipline, physical development, and personal hygiene, contained in Training Circular No. 5 applies to the sanitary troops of the divisions as well as to all other arms. The efficiency of the sanitary troops in each division with the personnel composed in large part of those inexperienced in the Medical service very clearly depends upon the thoroughness and efficiency with which training is carried out. This training will consist of two parts—one in which the sanitary personnel is trained in their military duties and military environment, the other in which the sanitary personnel is trained in such professional matters as are created by such military environment. Both are necessary.

This training must be intensive and calls for every effort and self sacrifice, sloth, indifference and inertia on the part of individuals must not be tolerated. Training will be carried out under the direction of the division surgeon who will prepare a schedule of systematic training as outlined generally below, which, upon approval of the division commander, will be published in the form of a general order. The division surgeon will recommend a specially selected officer as training officer whose duties will be to classify the personnel, both commissioned and enlisted, into suitable groups for training according to their relative knowledge and experience, and

by constant supervision and assistance, verify and promote the efficiency of the training work.

Officers and men of the sanitary troops will be detailed as instructors from suitable material at hand and should be given special authority while serving as such, irrespective of rank. Sanitary personnel of the division must be qualified and trained as follows:

SETTING UP EXERCISES.

Sanitary personnel attached to regiments will take this daily with the troops to which they are attached and those in the sanitary train will conduct their own exercises.

DRILLS.

Drills will include marching, litter drill, carrying by one bearer, application of first aid packet and special instruction in first aid to the wounded. Personnel attached to ambulance companies and field hospital companies will be given intensive training in their duties as outlined in Drill Regulations for Sanitary Troops with special attention to the location and operation of their units in open warfare.

Officers will be given instruction in map reading, use of compass, orientation, elementary road and position sketching. The training officer will prescribe tactical walks and rides and practical field maneuvers including brigade and division problems with frequent night problems utilizing regimental detachments, ambulance companies and field hospitals in coordination. The problems will include the duties of the sanitary troops in attack, retreat, plan of defense and rencontre, as far as possible they will be carried out in actual conjunction with problems by line troops. Every advantage should be taken of practice marches and bivouacs.

In general, after completing the four month's period of training, any additional time during which troops remain at division camps should be devoted to review of previous work, especially drills, in order to insure better discipline and precision and also to participation in all field problems or maneuvers for other troops prescribed by division commanders.

The text books necessary for instruction are: Army Regulations, Manual for the Medical Department, Field Regulations for Sanitary Troops, Field Service Regulations, Rules of Land Warfare and Tables of Organization.