

The
FIELD ARTILLERY
Journal

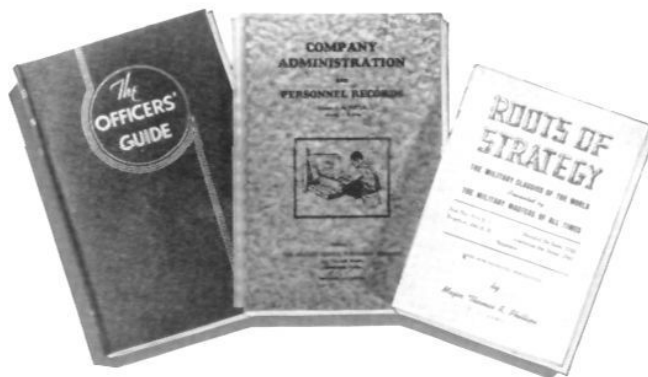


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Corps Artillery-Counterbattery

NOVEMBER - DECEMBER, 1940

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IN THIS ISSUE

ONE IMPORTANT lesson from the European War is that our doctrines concerning counterbattery are in need of revision. Developed by and for World War style of fighting, our older types of counterbattery materiel, our old organization, and our former technique are not entirely adequate for open warfare. Detailed data and lessons from Europe are lacking. But we cannot wait until this information is available: some original thinking must be done at once. Fortunately the whole matter is to be examined analytically by a group of experienced officers detailed for the purpose at the FA School. THE FIELD ARTILLERY JOURNAL presents herewith some ideas which, it is hoped, will be useful to those who are about to undertake this study. And, since all field artillerymen are concerned with counterbattery, such publication herein may stimulate thought on the matter throughout the Arm.

COLONEL F. A. DONIAT, of the Office of the Chief of Field Artillery, leads out with a brief exposition of the latest corps artillery organization. New tables of organization are being published and will be issued soon.

THE PLAN FOR COUNTERBATTERY is an original study prepared for the JOURNAL by the Department of Tactics, FAS.

CAPT. TUPPER and Maj. Sturtevant analyze German and French methods of counterbattery, and point out certain features of these which we might adopt.

GOOD COPY from England, heretofore lacking on account of censorship, is now beginning to be available. We expect later to follow up the somewhat disjointed compilation, "The Retreat to Dunkirk," by an exciting recital of a British battery in hot antitank fighting in Flanders.

CAPT. JOHN W. HAINES describes what he saw at the maneuvers in upper New York last fall. In compliance with many requests received, we will later publish another story on the maneuvers.

PROXY CARDS contain numerous requests for more information concerning materiel undergoing development or test. Gentlemen! Scarcely any of such data can be published. We are happy, however, to show you in this issue the first views of the new 75-mm. gun carriage.

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ORGANIZED JUNE 7, 1910

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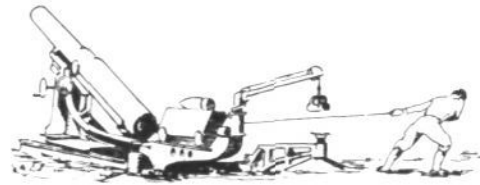
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A Publication for the Field Artillery of the Army of the United States

NOVEMBER-DECEMBER, 1940—Vol. 30, No. 6

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A Message from The Chief of Field Artillery

THE year now closing has brought profound changes in the peacetime organization, strength, and equipment of our defense forces. Total war in Europe and the Orient has profoundly affected the American people and has made them substantially unanimous in their demand for total defense. As a consequence vast sums of money have been made available by the Congress to our Military and Naval establishments whereby the Military strength of the United States is being built up to a point never before known in our peacetime history.

All of this means significant change and progress for the Field Artillery. With respect to materiel, all major calibers recommended as ideal by the Caliber Board are now under manufacture or development. Contracts for a sufficient number of 105mm howitzers to equip all light artillery of the Regular Army and the National Guard have now been let. Sufficient heavy artillery weapons, i.e., 155mm guns and 8-inch howitzers, are under manufacture to equip several regiments Improved Corps weapons, i.e., the 4.7-inch gun and the 155mm howitzer, together with the super calibers, as recommended by the Caliber Board, are under development. More modern and efficient transportation, especially as this relates to multiple-drive trucks to be used as artillery prime movers, are under procurement and will be available early next Spring.

In the past year and a half the Field Artillery of the Regular Army has been more than doubled in size, while a further expansion equivalent to more than twenty regiments faces us between now and June 30th next. By the latter date there will be in training a total of 871 gun and howitzer batteries of the Regular Army and National Guard. Over and above this expansion will be the organization of three Replacement Centers to be in operation by next April, with a total of over 30,000 Selective Service men under training thereat.

Based on our own recent maneuver experience, and on observations abroad, drastic changes in organization have occurred, and these have been set forth in Tables of Organization and Tables of Basic Allowances recently printed and distributed.

The Field Artillery School by next Spring will be operating with a peak load of 750 officers and 1,050 enlisted specialists.


The activities cited above have caused, since September, 1939, an almost continuous redistribution of officers and enlisted men thereby rendering it quite impossible for units to settle down and perfect either individual or team training. The shifting of men throughout the whole arm has seemed necessary in order that promotions might be equitably spread to all who are our most experienced and efficient soldiers.

While this redistribution of officers and men has been most difficult and discouraging to commanders of all units, these commanders have seemed clearly and sympathetically to understand the purpose and necessity therefor, and have manifested a magnificent spirit of loyalty and cooperation in meeting all demands made upon them. The officers and men personally affected, together in many cases with families, have accepted this difficult and trying situation without a murmur. All this reflects a fine spirit and pride in the arm.

A task of still greater magnitude and importance lies ahead of us. This is the training of our Selective Service men. The American youth who will be brought to the colors by this new plan will be found hard headed and practical. He must be worked; his time is precious and it must not be wasted. He will want to become the best and most efficient soldier possible within the year that is at our disposal for his training. He must be turned into a neat, clean, proud, alert, upstanding, polite, punctilious soldier; he must be given the physical conditioning and strengthening that comes through the judicious combination of good, nourishing food and sufficient healthy work and exercise, continued over the entire year; and he must become an expert in some position in the Field Artillery Team. He must be returned to civil life a better man, a better citizen, improved mentally, morally, physically, and spiritually, and proud of the year he has devoted to the service of his country. This means a fascinating opportunity and a sobering responsibility for the exercise of the finest leadership of which we are capable.

May the holiday season be a happy one, and may the New Year yield abundant opportunities for loyal, devoted, and inspiring service, is the wish extended at this time to all Field Artillery personnel of the Regular Army, National Guard, and Organized Reserves.

ROBERT M. DANFORD,
Major General, U. S. Army,
Chief of Field Artillery



New Organization of the Corps Artillery Brigade

By Colonel F. A. Doniat, FA.

For many years our tables of organization have been made up so as to show two personnel strengths for each unit; a so-called "peace," and a so-called "war" strength. Mobilization plans generally contemplated raising active units of the Regular Army and National Guard to peace strength, on or about M-day, leaving them at peace strength for four or five months, and then raising them to war strength. Of course, during normal peace times each unit has been given a recruiting strength, seldom corresponding to either the peace or the war strength. To have to consider three different numerical strengths, for each unit, has been confusing to all planning and supply agencies as well as to troops. Therefore, about the end of August of this year the Chief of Staff directed that all tables of organization be revised to show only one strength for a unit, and to simplify these tables in other particulars.

In the September-October issue of THE FIELD ARTILLERY JOURNAL, charts of the Field Artillery of the new *triangular division* were shown. In the current issue we are printing some charts showing the organization of the units of the *corps artillery brigade*. A few comments are desirable regarding the principal changes embodied in the new tables.

Chart I shows the organization of the Corps Field Artillery Brigade, which has in it exactly the same major units as had the superseded tables. They are:

- One brigade headquarters and headquarters battery,
- One 155-mm gun regiment,
- Two 155-mm howitzer regiments,
- One observation battalion.

FIELD ARTILLERY BRIGADE HEADQUARTERS BATTERY

In the old tables, a survey and meteorological section was set up in the brigade headquarters battery, and also in the observation battalion. In the new tables (Chart II), this duplication is avoided by eliminating both of these sections from the brigade headquarters battery. In spite of this elimination, the new brigade headquarters battery has 16 more enlisted men in it than were formerly authorized for war.

The most important changes in the new tables are made in the communication platoon. Four wire crews, with a signal corporal in charge of each, are provided in the wire section. The radio section has 13 men, with a staff sergeant in charge.

Our field manuals stress the need for direct communication between the counterbattery officer and battalions (or batteries) designated for counterbattery

missions. That calls for the laying and maintaining of more wire than we previously had the personnel and equipment for.

155-MM GUN REGIMENT

In the new set-up for the 155-mm gun regiment, the following major changes have been made:

Regimental Headquarters Battery (Chart III). An antiaircraft-antitank platoon has been added to the regimental headquarters battery. The platoon has in it one officer and 40 men who take care of six .50-caliber machine guns and six 37-mm. antitank guns.

Battalions (See Charts IV, V, and VI). The regiment has only two battalions instead of three which this type of regiment formerly had. But the battalions now have three firing batteries each, while formerly they had only two. A service and ammunition battery, in each battalion, takes care of all supply, including ammunition supply, and of all second-echelon motor maintenance of the battalion. This has made it unnecessary to include personnel and equipment in the regimental headquarters battery for those functions. In the firing batteries, some cannoneers are given 6th class specialists ratings, instead of being unrated. This has been done in all firing batteries, of all types and calibers.

155-MM HOWITZER REGIMENT

Two 155-mm howitzer regiments are provided in this brigade. These regiments have the same organization as the 155-mm howitzer regiments of the square divisions.

The regimental headquarters of these regiments (Chart VII) are considerably smaller than the regimental headquarters batteries of the 155-mm gun regiments. This is so because the former have no antiaircraft and antitank platoon in them, while the latter have. As will be observed from the heading of Chart VII, this table is a common one for all medium and light truck-drawn regimental headquarters batteries.

The battalions of this medium regiment have the same organization as the medium battalions of the triangular division, shown in the charts which appeared in the September-October issue of the JOURNAL. These medium battalions are very sizeable ones; larger in personnel strength, and in the number of cannon with which they are armed, than the medium regiment of the triangular division was just prior to the current reorganization.

CHART I
NEWLY APPROVED CORPS FIELD ARTILLERY BRIGADE

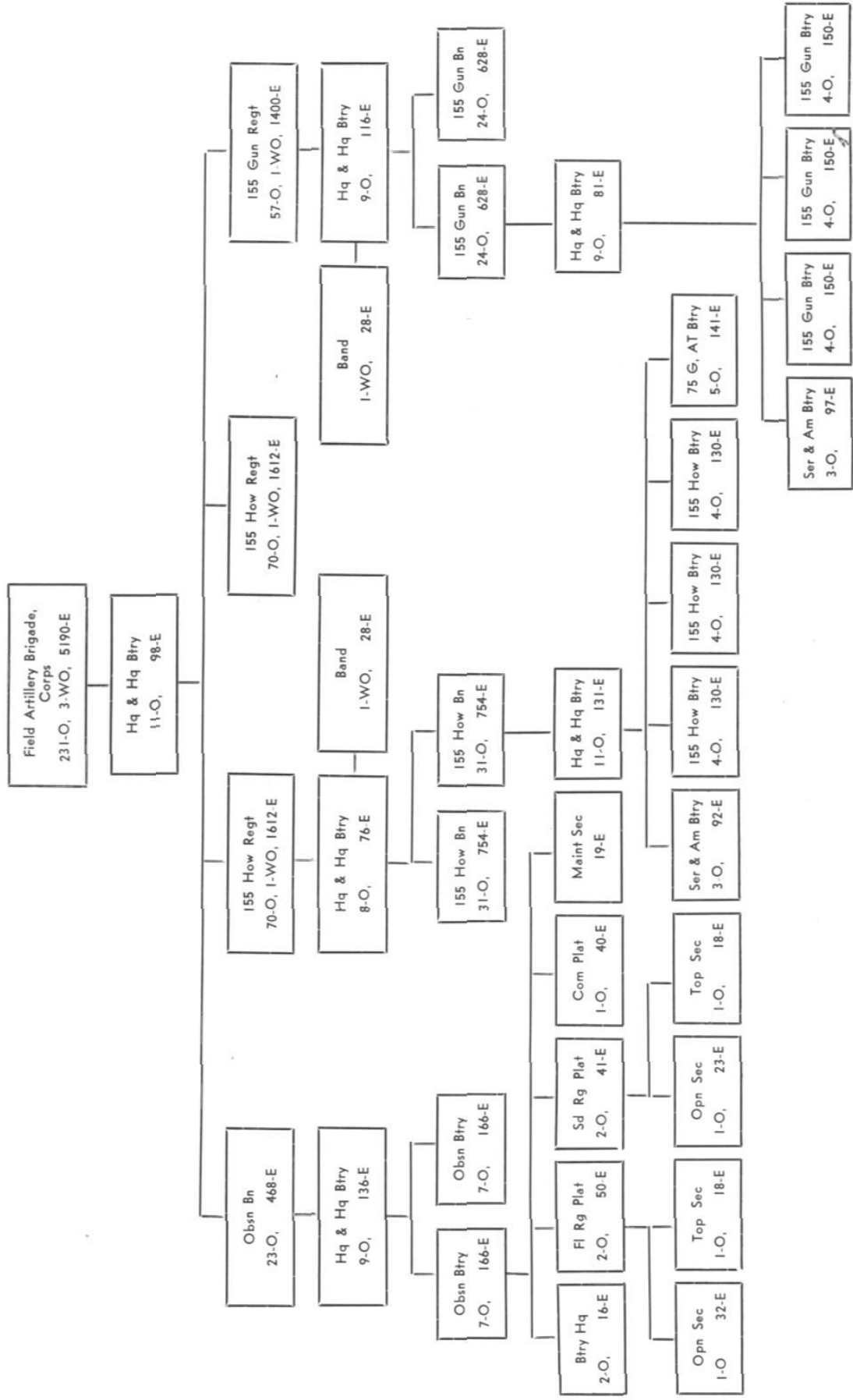


CHART II
FIELD ARTILLERY HEADQUARTERS AND HEADQUARTERS BATTERY, BRIGADE, CORPS
ARTILLERY

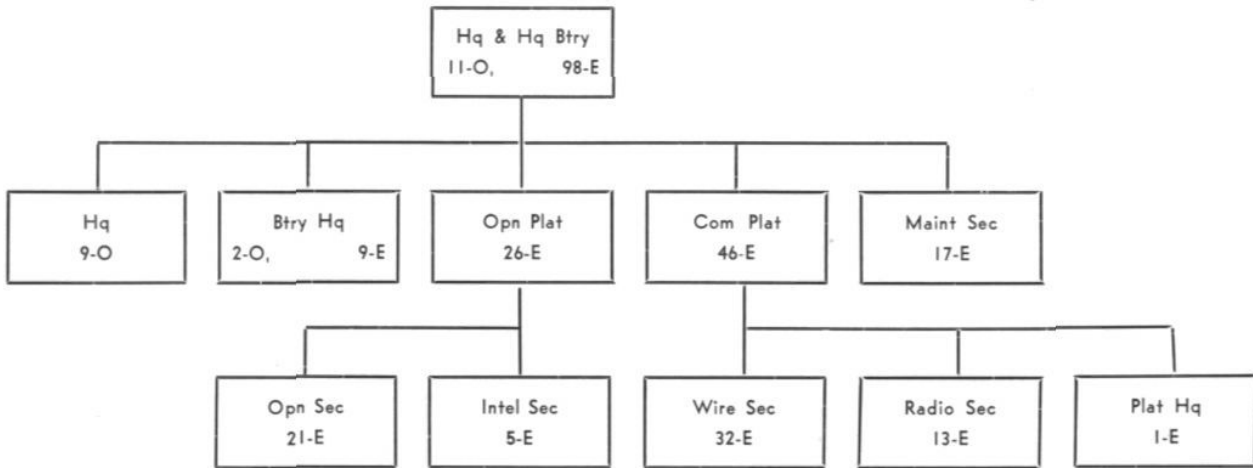


CHART III
FIELD ARTILLERY HEADQUARTERS AND HEADQUARTERS BATTERY, REGIMENT, 155-MM
GUN, OR 240-MM HOWITZER, MOTORIZED

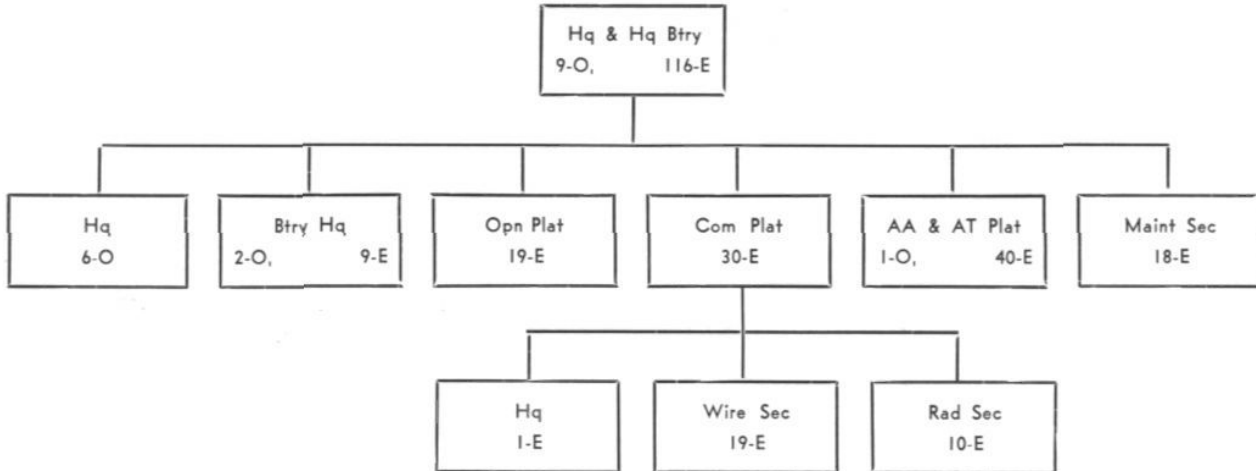
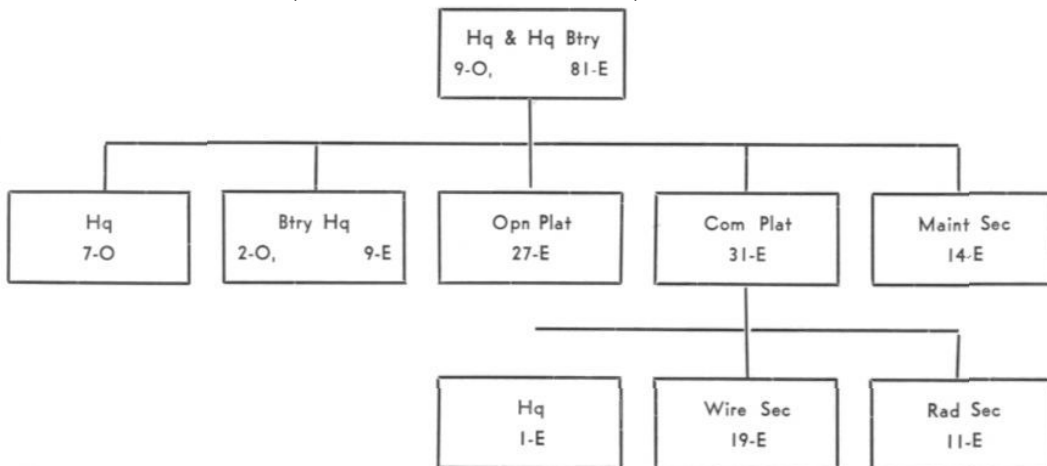
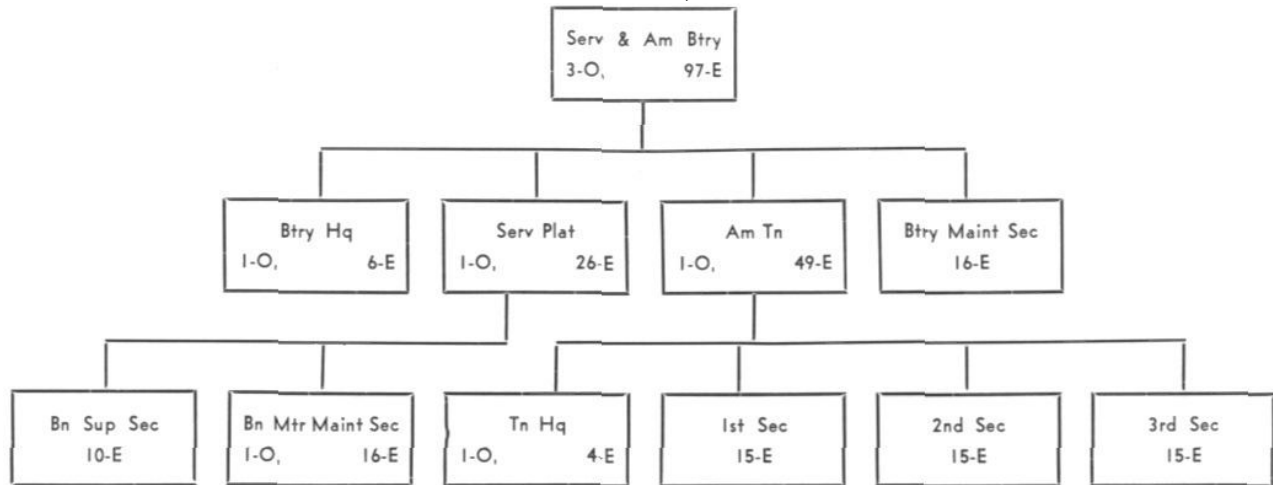


CHART IV
FIELD ARTILLERY HEADQUARTERS AND HEADQUARTERS BATTERY, BATTALION, 155-MM
GUN, OR 240-MM HOWITZER, MOTORIZED



**CHART V
FIELD ARTILLERY BATTERY, SERVICE AND AMMUNITION, BATTALION, 155-MM GUN, OR
240-MM HOWITZER, MOTORIZED**



OBSERVATION BATTALION

The observation battalion of the corps brigade has not been changed very much in the new tables (Chart I). There will be a battalion headquarters and two batteries, just as formerly, and each battery will be similarly organized. The battalion has been increased in size from 387 (war strength) to 468 men, and from 20 officers to 23.

The survey and meteorological sections of the headquarters battery have been increased slightly, to compensate for the elimination of those sections from the brigade headquarters battery. All communication sections have been increased in size. This battalion has to lay and maintain a lot of wire, in active operations, and the personnel formerly allotted for this purpose was a bit meager.

Some confusion has been caused by the similarity of designations of this battalion, and of the observation squadrons of the Air Corps. Therefore, the new tables will prescribe that our Field Artillery battalions of this type be designated "_____Field Artillery Observation Battalion," instead of "_____Observation Battalion."

ANTITANK DEFENSE

Special attention is invited to the large increase in the personnel and equipment available for antitank defense in the new tables. Each battalion of the 155-mm howitzer regiment, and the regimental headquarters battery of the 155-mm gun regiment, is equipped with six 37-mm antitank guns. This makes a total of 30 of these weapons. In each battalion of the 155-mm howitzer regiments there is one antitank battery which is armed with eight

**CHART VI
FIELD ARTILLERY BATTERY, 155-MM GUN, MOTORIZED**

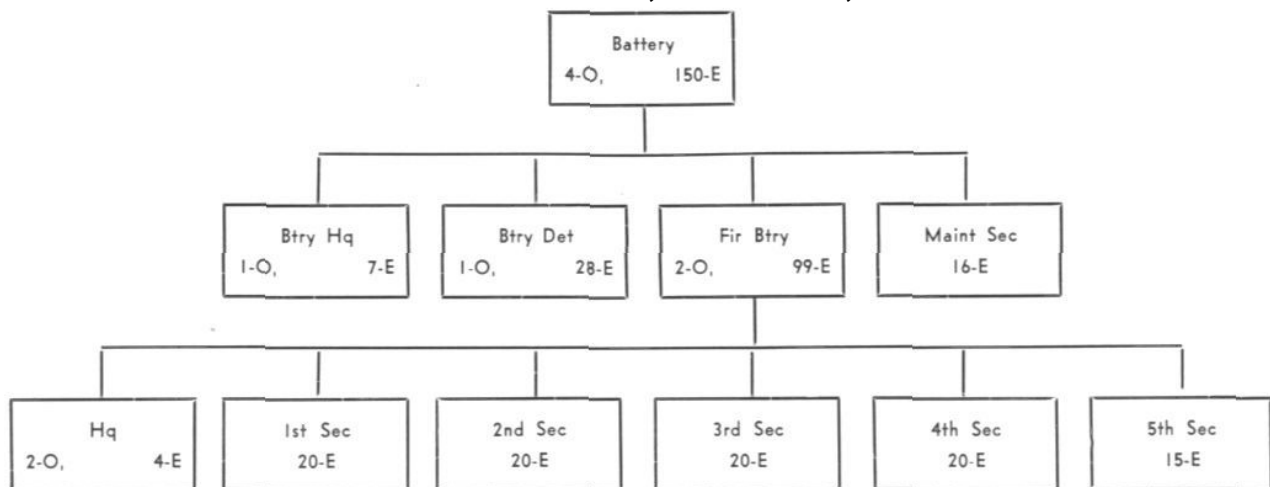
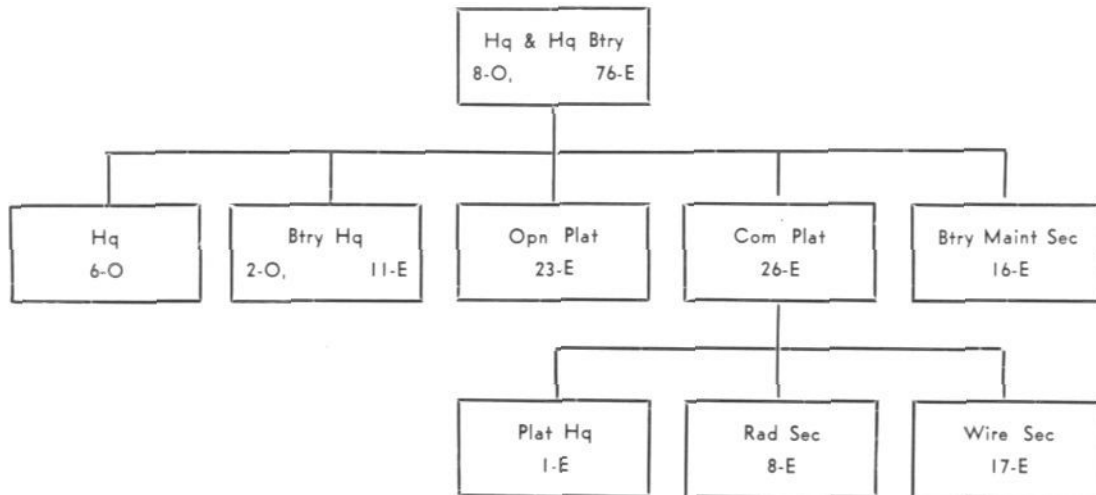


CHART VII
FIELD ARTILLERY HEADQUARTERS AND HEADQUARTERS BATTERY, TRUCK-DRAWN,
REGIMENT, LIGHT OR MEDIUM



75-mm guns. This makes a total of 32 of these guns in the corps artillery brigade; that is the equivalent in gunfire of one and one-third 75-mm gun regiments.

According to commentators on recent operations in Europe, targets in the artillery position areas are among the first and most important objectives of the tanks of the attacker. Therefore, it is important that the artillery be provided with some antitank weapon for its own close defense. Medium and heavy weapons are unsuitable for their own close defense, and it is highly undesirable to divert them from their primary missions. For this close defense of the artillery area these thirty 37-mm guns are provided.

The 75-mm antitank batteries are organized under the assumption that, in combat, they will be broken up and employed by platoons, or by individual guns. The battery has practically no detail, and it has no wire communication personnel. It does have 5 vehicular radio sets; one at battery headquarters, and one in each platoon.

These thirty-two 75-mm guns are provided for the defense of the entire area occupied by the corps, not just the artillery area. While the batteries are assigned organically to medium battalions, it is expected that some or all of them will normally be detached and will function under direct orders of higher authorities than the battalion commanders. Some of these antitank guns would undoubtedly be placed in positions far in rear of the artillery position area. In many cases, entire batteries would be initially held in reserve in the rear areas.

If the above remarks about the method of employment of the 75-mm antitank guns are correct, then there is considerable question as to whether our organization for them is correct. It seems a little odd to include these batteries in a 155-mm howitzer battalion when, in most cases, the battalion commander will not control them in

combat. There is a strong feeling that a better organization would be the grouping of the four of these batteries into one battalion. They do not now function with, or for, their own battalions, but they do take the time and efforts of the battalion commander, and others, to provide administration and supply for them. Extensive tests will furnish the information necessary to determine the proper organization for these batteries.

ANTIAIRCRAFT DEFENSE

For its own antiaircraft defense, 102 .50-caliber machine guns are provided in the corps brigade. Most batteries get two of these guns, although those batteries that have an antiaircraft-antitank platoon in them, get six.

COMMUNICATIONS

As a general rule, the communication facilities, both wire and radio, have been increased considerably throughout all echelons of the brigade. The increase in radio equipment is represented in two types of sets: the SCR-194 set has been added to provide radio communication for the firing batteries of the medium battalions; the vehicular radio sets have been added to provide a radio warning and control net for the antiaircraft-antitank batteries and platoons. In all medium artillery, three of the sets, SCR-194, have been provided for each battery. One of these is for use at the gun position, one at the observation post, and one at a forward observation post. Vehicular, development type radios, mounted in one-half ton radio trucks, are set up in the following units:

- The brigade headquarters battery,
- All regimental headquarters batteries,
- All battalion headquarters batteries,
- The antitank battery.

A PLAN for COUNTERBATTERY

in an ATTACK of a POSITION

The following extracts from FM 100-5 (Tentative Field Service Regulations, Operations) are pertinent to counterbattery.

Par. 41.—Field Artillery has two principal missions in combat:

It supports Infantry and Cavalry by fire * * *.

It gives depth to combat by counterbattery fire * * *.

Par. 44.—Divisional artillery is * * * employed * * * to assist the corps artillery in counterbattery.

The *corps artillery* has for its principal mission the neutralization or destruction of hostile artillery * * *.

Par. 467, Attack of an Organized Position.—A preliminary reconnaissance of the hostile position and its foreground is of primary importance. This reconnaissance seeks especially to determine the * * * general deployment of the hostile artillery.

Par. 481.—During the advance of the infantry from its assembly positions, the hostile artillery constitutes the principal target of our artillery fire. Superiority over the hostile artillery is indispensable for the success of the infantry attack * * *. As a rule the known and located hostile batteries are silenced early in the artillery preparation and their neutralization is then maintained by a portion of the corps artillery in order that the mass of the corps artillery may be employed for counterbattery fire as new hostile batteries appear.

The following extracts from paragraph 134 of the manuscript of FM 6-20, "Tactical Employment," are quoted in amplification of Field Service Regulations.

a. Counterbattery fire * * * is a primary function of the corps artillery.

b. Supervision of the counterbattery work of a corps is the function of the corps artillery officer (chief of artillery). He designates an officer as counterbattery officer to function as a member of the plans and training (S-3) section, with duties pertaining exclusively to the coordination of counterbattery on the entire corps front. Information pertinent to the direction and conduct of counterbattery fire is furnished by the S-2 section of the staff of the corps artillery officer, with which section the counterbattery officer works in close cooperation.

c. The counterbattery system must contain the means for obtaining information of the enemy artillery situation, observation of fire, necessary communication, and sufficient firing units to deliver and maintain effective fire on the targets reported. The system is organized by the counterbattery officer, who is directly responsible for the preparation and supervision of the counterbattery plan. The plan should include:

(1) Types and amount of artillery required.

(2) Organization for combat.

(3) Zones of responsibility.

(4) Position areas.

(5) Assignment of specific fire missions.

(6) Provision for prompt fire on hostile batteries during the attack to include arranging for airplane and balloon observers and coordinating their employment and coordinating (in conjunction with S-2) the employment of sound-and-flash units.

(7) Communication system to be installed.

d. The corps counterbattery artillery will usually contain medium howitzers and guns. When there are special immobile targets definitely located, the 240-mm. howitzer or the 8-inch howitzer may be provided. The 240-mm. howitzer must be emplaced initially to fire on specific targets because of the time necessary to put it into position and its limited traverse. In organizing the counterbattery units, it is desirable that each unit contain weapons having the range and other characteristics which will enable it to fire on targets located in its zone of action. When the number of enemy batteries exceeds the capabilities of the corps counterbattery artillery, the artillery of the divisions in the corps may be directed by the corps commander to reinforce the fires of the corps artillery with a number of units of different calibers for a definite period. In such case, the corps artillery normally furnishes the division artillery the information necessary for the direction and conduct of fire.

e. A counterbattery plan should provide for fire to be delivered on all known enemy batteries and those discovered during the action. Counterbattery is most effectively executed by concentrating

the fire of several batteries, from divergent directions, if practicable, on a single enemy battery for the time necessary to establish neutralization, subsequent fire being by a battery or less to maintain neutralization.

- f.* To silence enemy batteries which may require immediate neutralization during an operation, the counterbattery officer must have authority to assign counterbattery missions direct to battalions and batteries which have been designated for the purpose, and to accomplish this he should be in direct communication with them.

The purpose of the problem which follows is to illustrate the application of the principles enunciated in Field Service Regulations and in FM 6-20 in a specific situation.

FIELD ARTILLERY SCHOOL
Department of Tactics and Communication
1940

ARTILLERY TACTICS
ILLUSTRATIVE PROBLEM
Corps Artillery in Support of an Attack—The
Counterbattery Plan

Paragraphs

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SECTION I

1. GENERAL SITUATION.—*a.* Map: Situation sketch herewith (Special Map No. 3, Army Extension Courses).

b. Blue (west) and Red (east) have been at war for about 3 months. By 15 April each side has completed a well organized defensive system along the line shown in part on the sketch.

c. Red is superior in armored, mechanized, and motorized divisions, but is concentrating most of his divisions of that type on another part of the front. Locally the Blues are maintaining air superiority.

2. SPECIAL SITUATION.—*a.* The Blue I Corps, part of the First Army, consists of the 1st and 2d Divisions (both triangular), the 21st and 22nd Divisions (both square), and corps troops. It is holding the right of the Blue line.

b. At 8:00 AM, 14 April, the artillery officer I Corps received certain information and instructions from the corps commander. Pertinent extracts follow:

The First and Second Armies attack at 4:30 AM, 18 April, penetrate the hostile position, and * * *.

The II Corps, on our left, makes the main attack for the First Army.

The I Corps will attack with the 21st, 1st and 22d Divisions in line from south to north. Boundaries: (See situation sketch).

The 21st Division will make the main attack of the I Corps.

The 2d Division (less the division artillery) will remain in corps reserve in its present location.

* * * * *

An artillery preparation will precede the attack to neutralize enemy artillery, centers of resistance, and command and communication centers.

Corps artillery will be able to mass its fire in the area: * * *. It will be prepared to place the fire of 3 battalions of 155-mm. guns or howitzers in the zone of action of the II Corps as far to the left as the line: * * *, and in depth as far as the line; * * *.

GHQ artillery will be attached to the I Corps as follows: The 901st FA, 902d FA, 903d FA (all 75-mm. gun Trk-D) at 11:00 PM, 16 April, at * * *.

The 935th FA, 936th FA, 937th FA, 938th FA, and the 939th FA (all 155-mm. how. Trk-D) at 1:00 AM, 16 April, at * * *.

The 940th FA (240-mm. how. Trk-D) at 4:00 AM, 15 April, at * * *.

The 2d Division artillery will be employed in the preparation and early stages of the attack from positions south of the boundary between the 1st and 22nd Divisions.

* * * * *

Submit, by 4:00 PM today, your recommendations for the employment of the artillery with the corps.

c. By 5:00 PM, 14 April, the corps commander had approved the recommendations for the employment of the artillery with the corps. These recommendations were, in part, as follows:

(1) *Division artillery:*

(a) *Attachments:*

To 22d Division:

901st FA and 935th FA, at * * *.

To 1st Division: 902d FA, 903d FA, and 936th FA, at * * *.

To 21st Division: The artillery of the 2d Division, the 937th FA, and 938th FA at * * *.

(b) *Contingent zones:* * * *.

(2) *101st Field Artillery Brigade:*

Attached: 939th FA and 940th FA.

(a) 101st FA:

Attached: 1st Bn 103d FA.

Mission: Counterbattery, * * *.

Normal zone: Zone of action 21st Division.

Contingent zone: * * *.

(b) 102d FA;

Attached: 2d Bn 103d FA.

Mission: Counterbattery, * * *.

Normal zone: Zone of action 1st Division.

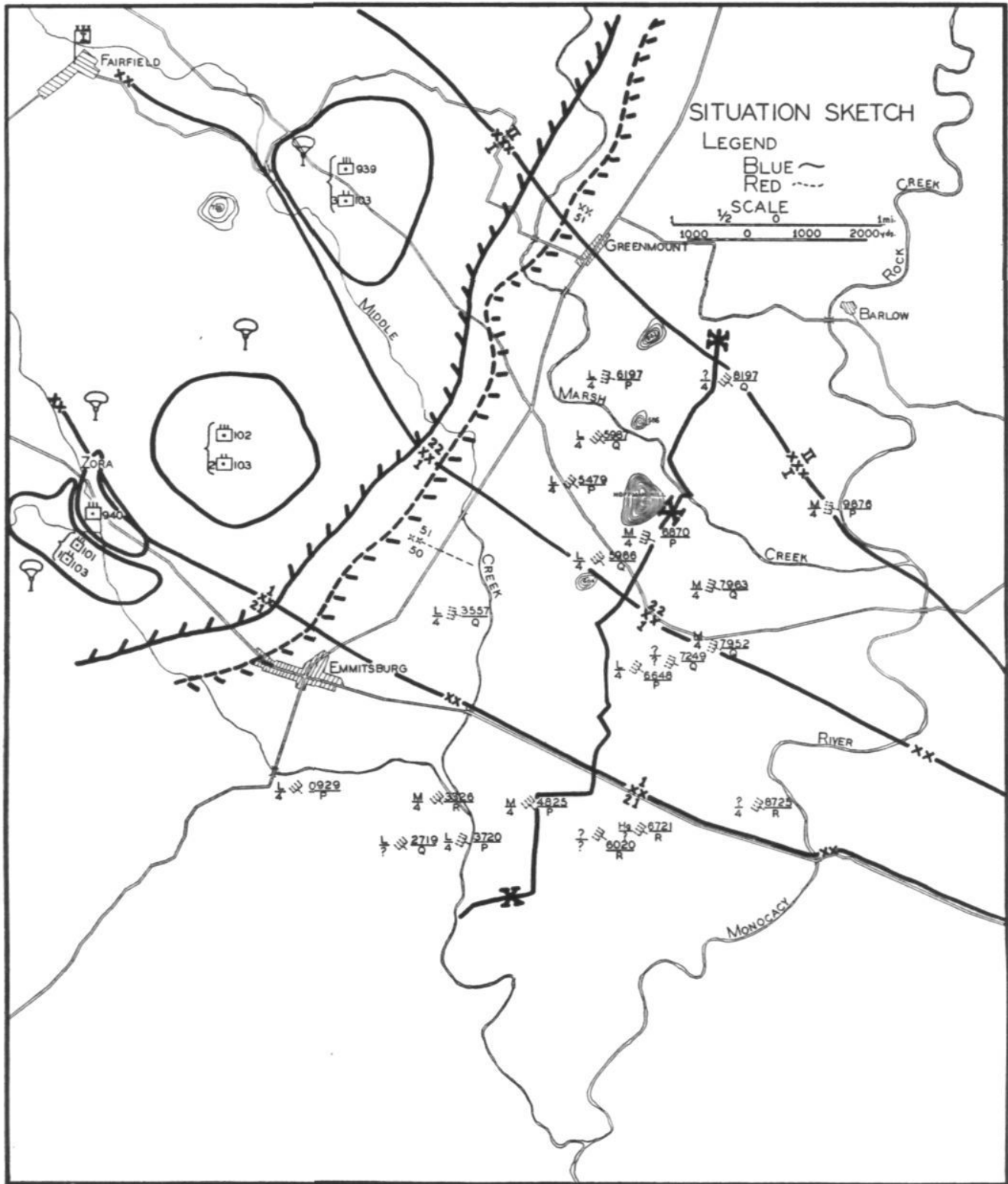
Contingent zone: * * *.

(c) 939th FA;

Attached: 3d Bn 103d FA.

Mission: Counterbattery, * * *.

Normal zone: Zone of action 22d Division.



Contingent zone: Be able to place the fire of one battalion as far south as ***, and the fire of three battalions as far north as ***.

- (d) 940th FA:
Mission: ***, counterbattery

Normal zone: Crossings of Monocacy River in each division zone of action to be covered by one battalion.

- (e) 1st Observation Battalion (sound-and-flash):
Mission: Location of hostile batteries, ***.

- (x) 1. Position areas: (See situation sketch).
- 2. The 101st Observation Group maintains one artillery plane for each of the four subdivisions of the corps artillery beginning at 4:30 AM, 18 April.
- 3. The 101st Balloon Group observes for the corps and the corps artillery beginning at 4:30 AM, 18 April.
- 4. Hq and Hq Btry 103d FA is attached to Hq 101st FA Brigade.

(3) *Artillery with the corps:*

- (a) Registration from attack positions is forbidden prior to the preparation.
- (b) Prior to the preparation, normal firing activity by organic artillery remaining in present positions.
- (c) Preparation: One hour, commencing at 3:30 AM, 18 April.
 1st Phase: 3:30 AM — 3:45 AM. Artillery with the corps: Counterbattery; dislocate hostile command, communication, and observation systems.
 2d Phase: 3:45 AM — 4:30 AM. Corps artillery: Counterbattery and interdiction. Division artillery: Mass fire on hostile front-line elements.
- (d) XX line: (See situation sketch).

* * * * *

d. S-3, staff of corps artillery officer, has been designated as corps counterbattery officer. Of the seven requisites of the counterbattery plan for the attack (FM 6-20, par. 134 c (quoted at the beginning of this article)), the first four items have been covered in the recommendations of the corps artillery officer as given in the preceding subparagraph.

e. A total of 20 enemy batteries have been located in the zone of action of the I Corps (see situation sketch and Note 3). These batteries were located by the artillery intelligence sections of the artillery with the corps, employing air and ground observers, aerial photographs, and sound-and-flash ranging. The artillery with the corps has been given up-to-date information of these batteries in sufficient technical detail to warrant the delivery of unobserved fire.

3. REQUIREMENT.—So much of the corps counterbattery officer's plan for counterbattery during the attack as pertains to:

- a. The assignment of specific fire missions.
- b. Provision for prompt fire on hostile batteries located during the attack.
- c. The communication system to be installed for counterbattery.

NOTES

- 1. Tables of Basic Allowances as of January 1, 1939.
- 2. The 101st FA Brigade is organized as per T/O 6-50, February 1, 1940.

3. The following method of designating enemy batteries is in use in the I Corps.

a. The location of an enemy battery is indicated on a map by placing the following conventional sign on the map,



with the intersection of the single line on the left and the back of the symbol over the point designated as the center of the battery, and with the four lines pointing in the general direction of fire.

b. The type of battery is indicated by placing an appropriate letter on the left of the symbol: L for light; M for medium, H for heavy howitzers, larger than 155-mm.; Hg for heavy guns, 155-mm. or larger; and AA for antiaircraft artillery.

Example: Light battery

Medium battery



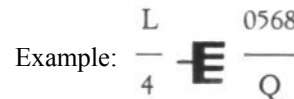
c. Each battery is assigned a number by the S-2 section of the corps artillery officer, or by the division artillery S-2 when the division is operating alone. This number is the abbreviated coordinates of the location of the center of the battery position, and is placed to the right of the symbol. Example: A battery located at (60.53-36.82) is assigned the number 0568. A light battery at this location would appear on the map as follows:



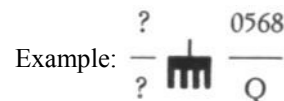
d. The accuracy of the location of an enemy battery is indicated by placing P, Q, R, or S below the battery number. P indicates that the battery is located within 50 yards; Q, within 100 yards; R, within 150 yards; and S, that the error of location is greater than 150 yards. The symbol for the battery in c above, if located within 100 yards, would appear on a map as follows:



e. The number of pieces known to be in a battery position is indicated by placing that number on the left of the symbol below the letter indicating the type:



f. When there is any doubt as to the correctness of any of these designations or when they are unknown, represent the item in question with an interrogation mark.



SECTION II

4. A SOLUTION.—So much of the counterbattery officer's plan as pertains to the items listed in the requirement.

a. Assignment of specific fire missions.—The corps counterbattery officer to prepare a schedule of counterbattery missions to be fired during the preparation by corps and division artillery. Insofar as the 20 located hostile batteries are concerned, the schedule might well be drawn up in tabular form as shown in Figure 1. (In order to permit the inclusion of additional hostile batteries that might be discovered at the last minute, this schedule, of course, would not be completed until after dark, 17 April.)

After the preparation is begun, the corps counterbattery officer to retain general supervision of counterbattery, but the direct control and execution to be decentralized as indicated below.

b. Provision for prompt fire on hostile batteries located after the preparation begins.—(1) The 101st FA, 102d FA, and 939th FA to be designated as the counterbattery subdivisions of the corps artillery, and each to organize a counterbattery section from the regimental staff. Each of these subdivisions to have an airplane assigned to work with it, and to be in direct communication with the balloon squadron observing its normal zone and also with the 1st Observation Battalion. Each counterbattery subdivision to take under fire without delay any hostile battery in its normal zone located by its own information-gathering agencies (forward observers, airplane or balloon observers), or reported to it by the liaison officer with the division artillery whose fire it is reinforcing, or reported to it by the observation battalion.

(2) A counterbattery section to be established at the CP of the 101st FA Brigade, under the brigade S-3. This section to consist of personnel from the second and third sections of the brigade staff. In addition to the usual communication facilities, this section to be in direct wire communication with the 1st Observation Battalion and the balloons.

(3) The 1st Observation Battalion to report locations of hostile batteries to the counterbattery sections of the 101st FA Brigade and its counterbattery subdivisions, and to adjust fire on call by any counterbattery officer.

(4) Division artillery to take under fire any hostile battery in its zone of action located by its own information-gathering agencies, especially infantry cannon. If the demands for close-support fires preclude this action, to call direct on the reinforcing corps artillery for the necessary counterbattery.

(5) Information regarding the location of new enemy batteries and the execution of counterbattery fires on such batteries to be reported promptly to the corps counterbattery officer.

c. The communication system to be installed.—(1) The general communication plan for the counterbattery system is shown in Figures 2 and 3.

(2) Figure 2 shows schematically a normal wire net with double trunk lines between the brigade counterbattery officer and the principal sources of information as well as the subdivisions charged with executing counterbattery.

(3) Tactical radio nets to be installed by units of the corps artillery brigade in the same manner as in the division artillery brigade. Each counterbattery subdivision to send a staff officer with an SCR-161 radio set and operators to the division artillery command post. If wire communication between the division artillery and the subdivision of corps artillery fails, radio communication to be used. The observation battalion to establish radio communication with the 101st FA Brigade, SCR-171 radio net. If wire communication fails, radio communication to be used.

(4) The air-ground radio communication to consist of four nets, each working on one of the four air-ground frequencies (W, X, Y, and Z). Each of the three airplane observers engaged in observing the fires of the 101st FA, the 102d FA, and the 939th FA to be directed to report and take under fire any counterbattery targets in the target area of the unit for which he is observing. Figure 3 shows the radio communication system discussed above.

5. DISCUSSION.—*a. Strength and dispositions of the counterbattery subdivision.*—(1) There are two Red divisions in front of the Blue I Corps. Twenty artillery firing positions have been sufficiently active to permit their being located. These positions may or may not be battle positions. Therefore they are of questionable value for determining the hostile artillery strength and battle dispositions. On the other hand, all the organic artillery of the Red divisions, as well as an indefinite number of corps and reinforcing batteries, may be assumed to be present. The number of organic divisional batteries may be safely estimated as forty (including infantry batteries) and half that number may be added as corps or reinforcing batteries, making a total expectancy of sixty batteries. Of this number, twelve may be classified as infantry batteries, broken up into platoons or less and emplaced near the front lines. The mission of countering them should be assigned to the divisions. Of the remaining forty-eight batteries, not more than half may be expected to be located at any given period with a sufficient degree of accuracy to warrant an attempt at counterbattery. At least one medium or heavy battery should be made available for each hostile battery to be attacked. However, the execution depends on the accuracy of location, means of observation, and the application of surprise. Each hostile battery should be initially neutralized as quickly as possible, using two or more batteries. Since the enemy has been in position several weeks, his batteries have no doubt prepared protected battle positions. Consequently, the tabular ammunition

requirements for neutralization should be considerably increased.

(2) Provision must be made for most of the counterbattery batteries to reach hostile batteries capable of firing on elements of the corps main effort (21st Division). This is accomplished by placing two-thirds of them behind the south half of the corps front. One-third is placed behind the left flank of the corps so as to enable reinforcement of the II Corps. The heavy howitzers are emplaced primarily to cover the main crossings of the Monocacy. This also permits the use of two batteries on any part of the front from Emmitsburg to Hoffman Hill (both inclusive) should the need arise. By forming three subdivisions of the artillery for executing counterbattery, each with a battalion of guns, and each with a complete setup for executing counterbattery, provision is made for promptly answering calls from the divisions or corps, as well as providing for attachment to the divisions when the progress of the attack indicates that decentralization is necessary.

b. Information.—Information for executing counterbattery is of two classes.

(1) The first class serves to locate hostile batteries with the degree of accuracy necessary for effective neutralization. For this purpose the counterbattery officer must have "Bird Dogs" everywhere. He cannot get too much information for this purpose. And it must come to him with the least delay. Information from the infantry and direct support artillery should come through the counterbattery subdivisions to permit prompt action. No single source is always reliable. All bits of information must be checked through another source for both identification and accuracy of location. For this reason the communication systems must be elaborate and far reaching when possible. Otherwise the system must be reliable and reserved for the exclusive use of the counterbattery section. It must be borne in mind that there are limits in the form of time, equipment, terrain, trained personnel, radio frequencies, and conditions of observation. And the enemy is going to do his best to counter the information service. In the situation here shown the need for additional radio equipment in the regiments and brigade is apparent. The number of radio frequencies available for the artillery with this corps is seriously curtailed. Many of the field artillery radio sets will not be able to operate because of this shortage of frequencies and mutual interference. In

addition there is a great probability of interference from the II Corps and enemy sets on I Corps frequencies. A simple rule of thumb should be devised and followed, in each echelon of command, for determining and allocating frequencies when limitations must be imposed.

(2) The second class of information that should come to the counterbattery officer is that pertaining to delivery of fires. He must know what the counterbattery subdivisions are doing and what they are capable of doing, in order to coordinate their action. For this purpose, activity reports must be submitted, and command signal communication systems must be available for the exclusive use of the counterbattery section. In this situation there is plenty of telephone wire available, but no elaborate wire net can be displaced along with the battalions. After displacement starts, only a few essential lines can be maintained. Enemy counterpreparations will disrupt many circuits. If secrecy during preparations for the attack is not strictly observed, the hostile counterpreparation may precede the preparation, in which case the wire nets may be seriously disrupted even before full use has been made of them. Messenger service and good routes therefor may then become vital to the execution of counterbattery.

(3) Until the attack begins (daylight), the only means available to the counterbattery officer for locating hostile batteries which disclose their positions for the first time is the observation battalion. The capabilities of the observation battalion vary with weather conditions and terrain. Sufficient to say that with favorable conditions it can locate two batteries every four minutes, thus providing information to permit continuous counterbattery during the period of occupation of initial positions. Thereafter its value will depend on circumstances, such as signal communications with the counterbattery officer and rapidity of forward movement. It can be subdivided into two groups for attachment to counterbattery subdivisions or to infantry divisions. It can adjust batteries and may wish to use an adjustment as a check on its own findings.

c. Technique of execution of the fires.—More than one battery should be employed to neutralize each hostile battery. This applies the principle of mass and surprise, and increases the moral effect. The use of two or more batteries eliminates the necessity for sweeping, and consequently permits use of the maximum rate of fire, thus reducing the time required to accomplish neutralization.

Corps artillery—portion of 36th Field Artillery in camp



	3:30	3:34	3:38	General instructions and remarks.
21st Div. (155 mm)	$\begin{array}{r} \leftarrow 3326 \\ \quad 144 \\ \leftarrow 0929 \\ \quad 40 \\ \leftarrow 3720 \\ \quad 40 \end{array}$			
1st Div. (155 mm)	$\begin{array}{r} \leftarrow 3557 \\ \quad 56 \\ \leftarrow 5966 \\ \quad 56 \end{array}$			
22d. Div. (155 mm)	$\begin{array}{r} \leftarrow 5479 \\ \quad 40 \\ \leftarrow 6197 \\ \quad 40 \\ \leftarrow 5987 \\ \quad 56 \end{array}$			
101st FA	$\begin{array}{r} \leftarrow 6721 \\ \quad (See 940FA) 72 \\ \leftarrow 6020 \\ \quad 144 \\ \leftarrow 2719 \\ \quad 56 \end{array}$			Maintain neutralization of all batteries in normal zone. Counterbattery all new batteries located during preparation and attack.
102d. FA	$\begin{array}{r} \leftarrow 8725 \\ \quad (See 940FA) 72 \\ \leftarrow 6648 \\ \quad 40 \\ \leftarrow 7249 \\ \quad 56 \\ \leftarrow 4825 \\ \quad 40 \end{array}$			Maintain neutralization of all batteries in normal zone. Counterbattery all new batteries located during preparation and attack.
939th FA	$\begin{array}{r} \leftarrow 7952 \\ \quad 56 \\ \leftarrow 7963 \\ \quad 56 \\ \leftarrow 9876 \\ \quad 40 \\ \leftarrow 8197 \\ \quad 56 \end{array}$			Maintain neutralization of all batteries in normal zone. Counterbattery all new batteries located during preparation and attack.
940th FA	$\begin{array}{r} \leftarrow 8725 \\ \quad (See 102 FA) 40 \\ \leftarrow 6721 \\ \quad (See 101 FA) 40 \\ \leftarrow 6870 \\ \quad 40 \end{array}$			Counterbattery on call from Brigade Counterbattery Officer.

Figure 1.—Schedule for the Preparation and Attack. Note: Only counterbattery is shown. Normally the Corps would also prescribe many of the objectives for the divisions to fire on during the preparation and initial period of attack, for purposes of coordination.

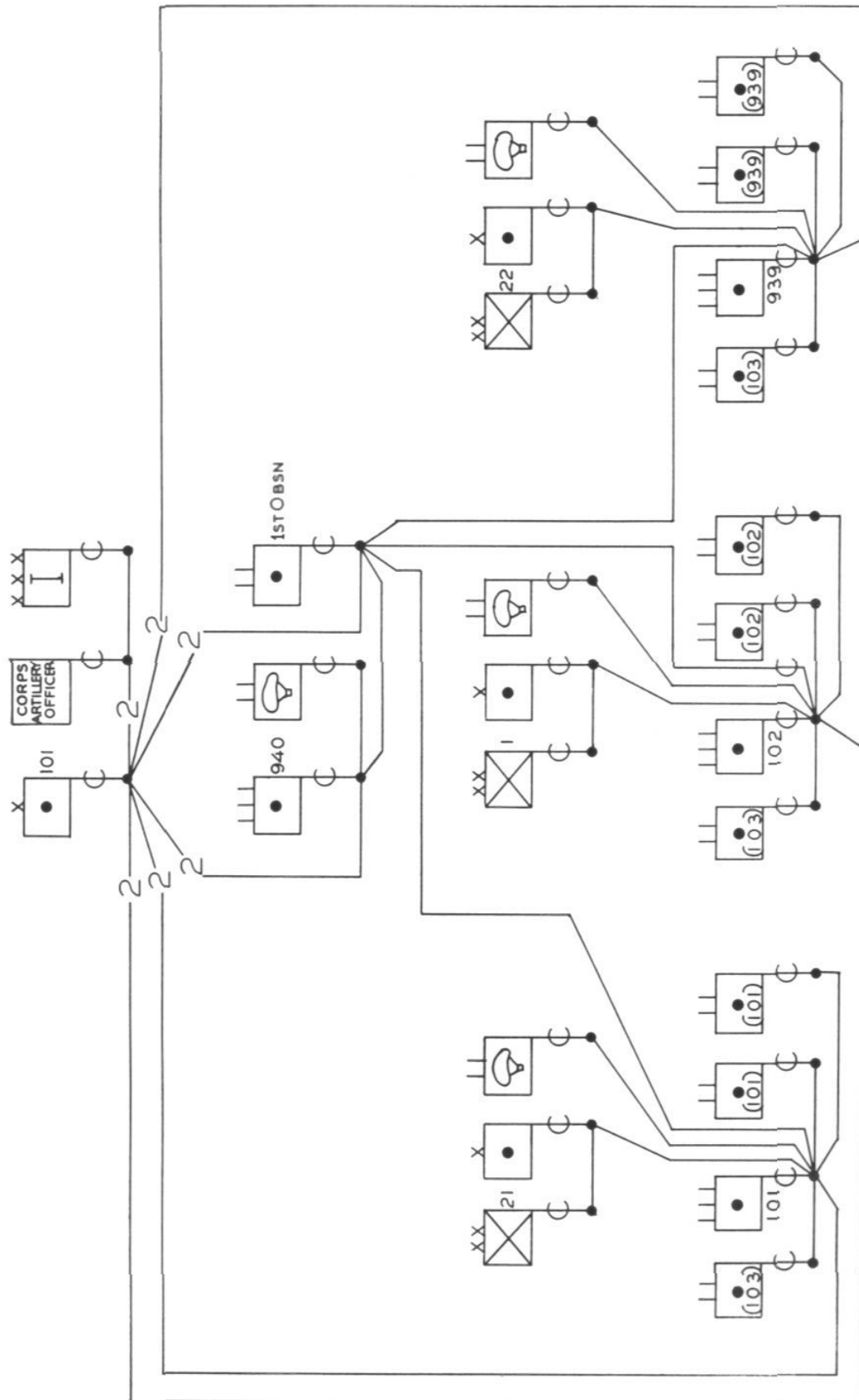


Figure 2.—Schematic diagram of counterbattery wire circuits. Second trunk lines are specifically for counterbattery.

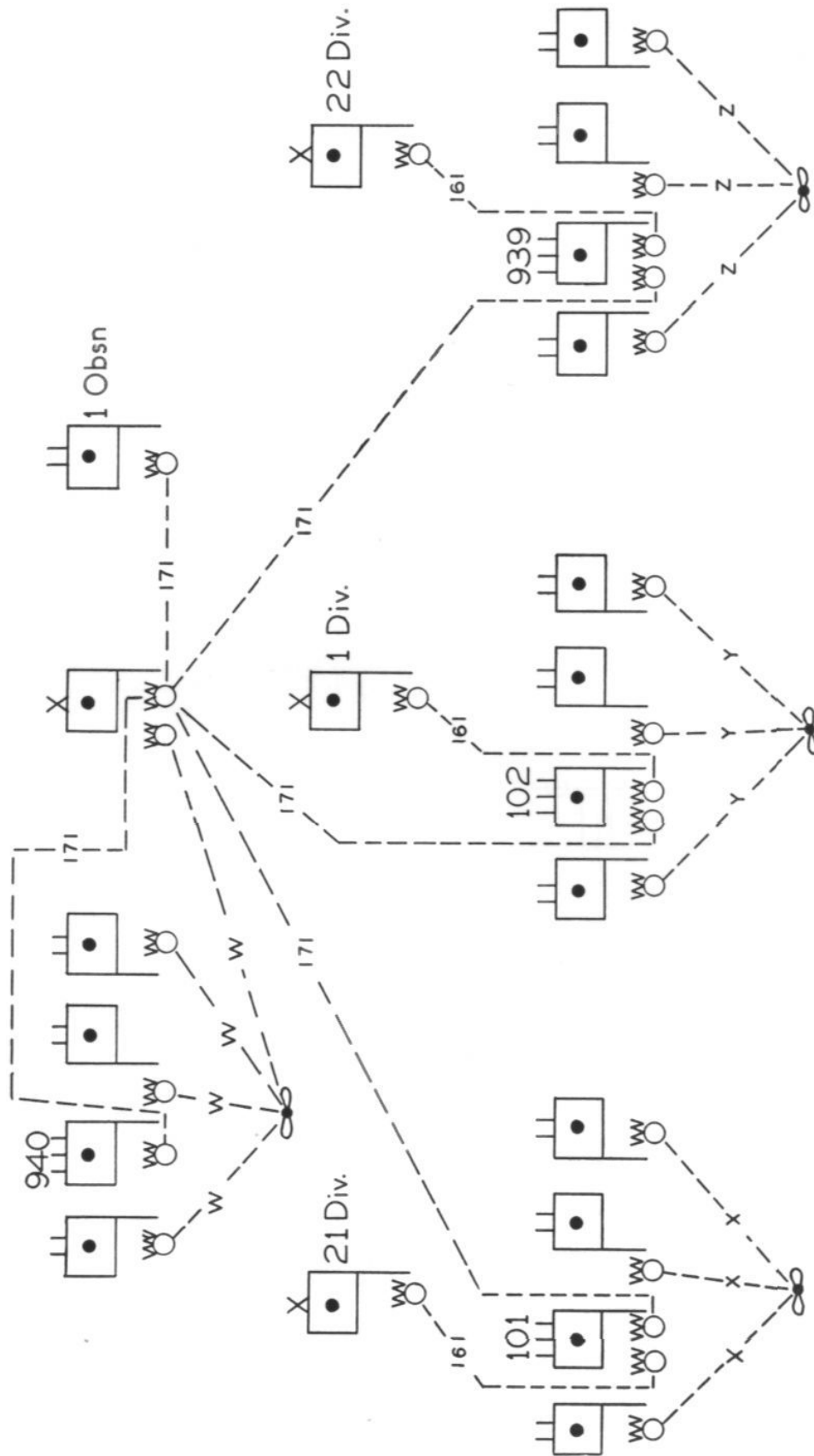


Figure 3.—Radio nets for counterbattery. Each regiment to locate its CP to permit use of one of its battalion's SCR 178 sets. Brigade can step into X, Y, or Z at will.

German Corps Artillery and Counterbattery

By Capt. Charles Nathaniel Tupper

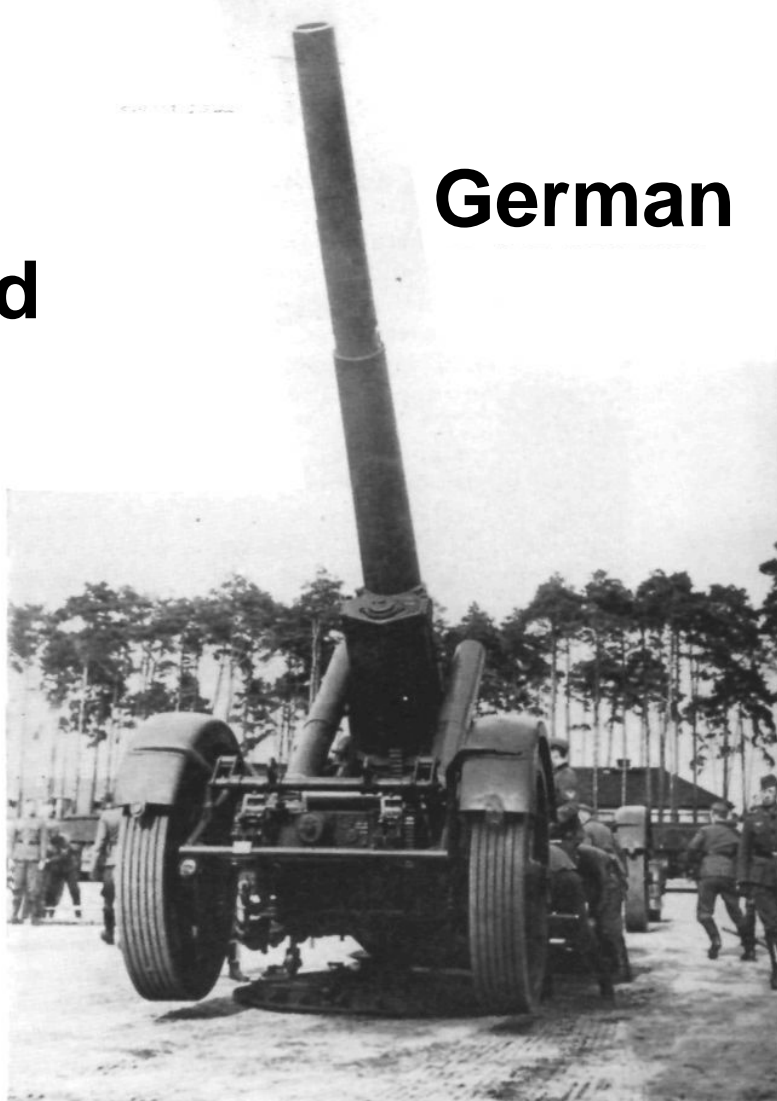
GENERAL

It has been said frequently that the Germans have no corps artillery, that they re-allot all such units to divisions. This is not strictly true; they *do* employ corps artillery, but there is no organic corps artillery. "Corps artillery," according to the German artillery regulations (H. Dv. 200/5), "consists of artillery at hand, suited for the order of battle, and that which has been temporarily allocated by GHQ artillery."

As to the amounts and types which may be allotted to a corps, nothing definite may be said. In line with the German doctrine of flexibility and of assigning to any specific task-force the means deemed necessary to accomplish the mission, the number of battalions and calibers which constitute the artillery of any given corps will vary with the situation. To cite one example: During the latter part of May, 1940, one of the German field armies operating in western Europe consisted of three corps. The artillery of one of these corps contained at least 14 battalions varying from 10.5-cm. guns to 30-cm. howitzers and mortars. The other two corps had five battalions apiece. All this was in addition to some very powerful army artillery; and doubtless the divisional artilleries had been heavily reinforced. Yet this particular army was making a secondary attack.

The Germans do not over-emphasize the counterbattery role of corps artillery. They appear to use it more as we do army and GHQ artillery. Corps artillery does engage in counterbattery; but it is also employed for long-range interdiction and harassing fire, for destruction of fortifications and field works, and for general disruption of hostile installations in rear areas. Here again we must bear in mind the fact that the role of this artillery will be in accordance with the situation, and cannot be fitted into a rigid, preconceived pattern.

The Germans are in a particularly favorable situation as regards suitable weapons for corps artillery. Their own designers have produced types which combine satisfactory range and power with great mobility (through the use of carriages which permit the breaking down of heavy materiel into several loads for travel). In addition, they now have available the artilleries of Czechoslovakia, Poland, Holland, Belgium, and France. The total amount available to them must be very impressive.



New German heavy corps artillery—21 cm. howitzer being demonstrated at German artillery school.

Concerning the organization of corps artillery for combat, the *einheit* principle permits the Germans to attach *artillery commands* (which are, in effect, regimental headquarters and staffs) in any desired number. The army corps mentioned in the preceding example had two attached artillery commands, and it is believed that these were in addition to the corps artillery commander and his headquarters. It may be that this corps artillery commander is organic. At any rate he "regulates the artillery cooperation of divisions and the allotment of ammunition. At times he will also concern himself with the employment and activity of divisional artillery, and with the artillery support of neighboring divisions acting in individual directions.

"The commander of the corps artillery serves the commanding general as artillery counselor, and the former, or a specially attached artillery command and staff, *commands the same*.

"The question whether the available or transient attached corps artillery is attached to divisions, or whether it shall be wholly or partially established as a special artillery group under the corps command, will be determined by the commanding general in accordance with

the situation, terrain, strength of artillery, and his own combat intentions.

"Should a special artillery group be placed under the corps command, it will be entrusted with most of the action against enemy artillery and with harassing fire against the enemy rear areas; the necessary reconnaissance information service and intelligence section will have to be placed at proper times at its disposal through corps orders.

"Should parts of such a kind of artillery group be employed for the strengthening of action against enemy infantry, they will be placed for this task under the respective divisions. They will then receive their fire missions from the divisions."

Comments: Thus we see that

(1) There is a corps artillery commander who both commands the corps artillery and acts as artillery advisor to the corps commander;

(2) There is no "blue-print" for the organization and employment of German corps artillery; i.e., there is no Corps Artillery Brigade as there is with us. The German Corps Artillery may be attached to divisions, either wholly or in part.

(3) A special corps group may be formed for counterbattery, but if any parts of this group are also assigned the mission of thickening the fires of divisional artillery, they will be attached to such divisional artillery.

COUNTERBATTERY

There is considerable evidence that the Germans regard counterbattery as a more suitable mission for divisional rather than corps artillery—especially where open warfare is involved. "Counterbattery is an especially important mission. The forward advance of our own infantry and with it the success of our attack depend essentially upon the subduing of enemy artillery. For this purpose, and according to the strength of own and hostile artillery, light and heavy batteries will be brought up for action against an enemy battery. Because of the rapidity of its fire, light artillery (105-mm. howitzers) with plentiful ammunition is well adapted for counterbattery." Furthermore, the Germans believe that the "men on the spot," that is, the more forward unit commanders, are better able to judge the needs for counterbattery, to locate targets, and to conduct fire. In further evidence of this belief, the Germans have made the observation battalion, which is their main agency for locating targets and adjusting fire on artillery, an organic part of the divisional artillery. Paragraph 10 of the manual quoted above makes this definite statement. It should be noted in this connection that corps artillery may also have one or more observation battalions attached to it; but the normal procedure (if there is a "normal" procedure) is to have the corps artillery make use of the observation battalions of its component divisions.

The foregoing does not mean that corps artillery will neglect counterbattery. In discussing the employment of corps artillery in the attack, and probably having open warfare in mind, the German regulations say:

"In organizing a special group (counterbattery and interdiction) under a corps command, the corps artillery must be used early, so that they may be able to take up their mission immediately—before all the vital mission of counterbattery. It must be ready for the speedy opening of fire; it must take up positions which are easily reached and that allow quick installation of communications. CP's and OP's must be chosen with these considerations in view. The zones of approach-march which are needed by the corps artillery must be indicated to divisions by the corps command.

"Until the corps artillery group is ready to take over counterbattery, this mission remains with those divisions whose observation battalions have had aviation allotted to them by the corps. The precise time that the corps will take over counterbattery will be prescribed by the corps command. This depends mainly on when communications will be ready.

"The commander of the corps artillery group needs the observation battalion for registration firing.

"Target locations obtained by the observation battalions are sent to the corps artillery commander.

"Reciprocal exchange of information between the corps command and the divisions on the possibilities of effect and the activity of the artillery is continually necessary.

"The corps artillery group requires a chain of intelligence liaison, which must be provided by the corps intelligence unit. This liaison chain runs from corps command to the commander of the corps artillery, to his subordinate units, and further to the observation battalions and divisional artillery commanders."

Comments: A study of the foregoing discloses several interesting items:

First, in an attack the Germans visualize decentralization at first—obviously they are thinking of a meeting engagement—followed by a closer coordination under



Cannoneers bring up shell for heavy howitzer



In position on the Aisne—German howitzer (probably a 21-cm.). German newsreels show many of these weapons firing on Maginot Line.

corps command. The principal difference from our own doctrine appears to be in the handling of the observation battalions. In our case these are a part of the corps artillery, and the divisional artilleries make use of their services if and when they can get it.

Second, note the use of artillery aviation, which the Germans attach from corps to divisional observation battalions. Furthermore, there is reason to believe that the German artillery has somewhat better assurance of obtaining this service than do our units (see *FIELD ARTILLERY JOURNAL* for September-October).

OTHER MISSIONS OF CORPS ARTILLERY

Although, because of their superiority in the air (in recent campaigns), the Germans were able to use dive-bombers to perform many of the long-range missions normally pertaining to artillery, they have made adequate provision for the accomplishment of this mission by artillery in case air support is unavailable. Recent statements in German periodicals have made it clear that they are "overlooking no bets" in this respect.

German corps artillery is designed for long-range disruption of hostile rear areas, including interdiction of lines of communications, defiles, command and supply installations, assemblies of troops, masses of armored vehicles, and for attack of fortifications. This versatility enables the corps artillery to approach widely varying situations with confidence that they have the means at hand for the accomplishment of diverse missions. Here again their doctrines show a conception of boldness, speed, and flexibility:

"Early moving up and deployment of long-range artillery give extra support to the front which is being

formed. Uniform employment is to be striven for. However, frequently the leaders of individual marching columns will have to employ independently the artillery placed under them. The commander of the superior unit can make allowance for this eventuality by distributing the artillery in the columns and regulating their location. He will be able to form the final approach march more in accordance with his intentions, the stronger the artillery will be which he retains at his disposal, the more secure and speedy is the contact of his artillery commander with such artillery, and his own contact with the marching column.

"For securing a head start in the employment of artillery, it can be of advantage to order the use of the whole artillery before the preliminary engagements have brought a clarification of the situation."

GUNNERY NOTES—COUNTERBATTERY TECHNIQUE

German fire direction and gunnery methods are quite similar to our own, especially as regards the use of firing charts, observed-fire charts, range-deflection fans, use of check points, and so on. There are, however, a number of unique features worthy of study.

To begin with, they recognize that enemy batteries may be located through a variety of ways, certainly standard in all modern armies, but the presence of an observation battalion in the division enables them to get early locations in cases where corps artillery may not have been moved forward and where aerial observation or photography is unavailable.

Locations of enemy batteries, says the German text, follow *planned* or *improvised* procedures. The first category includes locations from an observation battalion

already established in position, or from aerial reconnaissance, either visual or photographic. In such cases the location of the target is given as the coordinates of the center, together with the comment "known" or "suspected." Concentrations are not fired on suspected enemy locations; harassing fire only is directed at such targets.

Locations by the improvised procedure include a rough location by the observation battalion, and locations by visual aerial reconnaissance where the aviator has no means of referring the target to a known map point.

The Germans employ two kinds of fire for counterbattery. The first, which they call "holding down" or "paralyzing" fire, is analogous to our fire for neutralization. It consists of concentrations from one or more batteries, alternated irregularly with harassing fire from individual guns. The second type is "silencing fire," which is fire for destruction, and requires precise data and the expenditure of much ammunition. It will vary, however, with the situation and the nature of the target; again, "to deceive and surprise the enemy, irregular alterations of kinds and methods of fire are applied."

Comment: During the World War the Germans were often accused of employing methodical, rigid procedures which enabled their opponents to predict their actions. Throughout their modern texts there is an obvious effort to get away from this.

In neutralizing artillery which has been located on the firing chart, the Germans first note whether firing data are "positive" or "uncertain." If the former, they fire concentrations from as many batteries as possible, using either map data uncorrected or map data corrected. In the latter case, their regulations state that weather corrections are obtained from the registration of a *single battery*. However, if different batteries are firing different types of shell, then metro data must be obtained for each type of shell.

Comment: Three things contribute to the success of this method, which has been mentioned several times previously in THE FIELD ARTILLERY JOURNAL. First, the Germans seem to have advanced means for obtaining metro data, although the accompanying photo discloses nothing extraordinary except that the theodolite is apparently a *Wild*, a superior type of instrument. Second, German batteries have a *weather calculator*, which enables an enlisted man to perform in a few moments that which for us is a tedious process requiring upwards of a half hour—yet the German method is probably the more accurate in the long run. Third, German batteries are accurately tied together with survey, so that registration of one battery may be used by all. Apparently there was some reluctance on the part of "oldtimers" to adopt this, but the proof of the pudding, according to unbiased accounts, seems to have been fine flavored.

Although the Germans are great hands in employing speed and simplicity in technique of firing, they do not appear to have adopted our use of standard areas for schedule fires. However, they fire zone fires, almost always with a parallel sheaf, so that practically they get a somewhat equivalent result. Counterbattery concentrations are described in their text as follows:



German artillery meteorological section

"Simultaneous employment of concentrations (lasting $\frac{1}{2}$ to 1 minute) and swift firing should be assured by careful preparation. All batteries fire with parallel fire in rapid sequence, with range at the center of the target. It is recommended that the first burst concentration be conducted with about 50 rounds. After this, the target is held down by harassing fire of individual pieces, during which short bursts are laid down by sections.

Example:

"6:33 AM, all batteries in the division fire one volley	48 rds.
"6:30 to 6:42, 1 gun from the battalion charged with the shoot fires 3 rds. per gun for 7 minutes.....	21 rds.
"6:43 to 6:53, 1 section, harassing fire	5 rds.
"6:58, battalion volley	12 rds.
"7:05 to 7:15, 1 section fires harassing fire	12 rds.
"7:18, 1 section of each battery in battalion fires five rounds	15 rds.
"7:19 to 7:33, harassing fire by 1 section	7 rds.

Total.....	120 rds.
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"This example must not be taken as a rigid model. Changes in type of neutralizing fire are advantageous."

If firing data are uncertain, some type of observation must be employed for adjustment; and the ranging is done by one battery. Remember, the Germans do not fire unobserved concentrations in this case; harassing fire only is employed. If visibility is poor, a sound-ranging battery may furnish the adjustment, but in this case fire for effect is done only by the battery which performed the adjustment. It fires volleys with parallel sheaf at the mid-range.

For neutralization, the following allotments of ammunition are normal:

105-mm. howitzer..... 120 rounds per hour

15-cm. howitzer..... 80 rounds per hour

If the target has considerable depth, and zone fire is used, the above amounts are increased accordingly. At least twice these amounts are considered necessary for fire for destruction.

CONCLUSIONS

German corps artillery is flexibly organized and employed. Control may be centralized or decentralized according to the needs of the situation. Since the war in Europe varied, sometimes within 24 hours, from siege warfare to blitzkrieg, it would seem that such flexibility was imperative. The principal difference between German conceptions and our own appears to be in the fact that the Germans have no organic corps artillery. It is difficult to see how they benefit by this, for an organic nucleus of corps artillery will make the formation of special groups easier, and can scarcely be injurious to any fair conception of flexibility. In other words, our system appears to have all the advantages of the German, plus the addition of a *foundation* on which an efficient corps organization can be built for any purpose. The only respect in which we might investigate a variation is in the handling of observation battalions.

Corps Artillery and Counterbattery

By Major W. M. Sturtevant

— French

SHALL WE REJECT ALL FRENCH IDEAS?

One's first reaction on being asked to read a treatise on French artillery is, "But French methods are now so discredited that I can learn nothing of value from them."

Nothing could be farther from the truth! It would be profitable to re-examine French doctrines, if only to determine what should be not done, one might say. But even that answer is too easily given, too "pat." To what extent faulty French artillery practices contributed to their general debacle, is not known. In any event, *all* their artillery ideas cannot be unsound. As even the Germans admit, "the French are good artillerists." The most compelling reason for analyzing French artillery doctrines at this time is that much of our own organization (in so far as pertains to corps artillery), materiel, tactics, and technique have been greatly influenced by the French. If they are wrong, so are we, and we had better be finding out about it.

At the outset it should be made clear that the whole system of employment of corps artillery, particularly where counterbattery is concerned, hinges on the answer to the question: Will aerial observation be available? German, British, and French sources testify to the fact that this question is highly pertinent. Unfortunately we are unable at present to furnish a definite answer to this poser, especially with respect to any specific situation. Consequently the whole discussion is complicated by artificial and non-realistic considerations. Nevertheless the attempt must be made.

The French doctrines which we examine here are contained in a fairly recent text used at an important French military school, and are believed to embody the thought prevalent in the French army immediately prior to the outbreak of the present war. Our method will be to quote the gist of the French text, by topic, followed by such comments as appear pertinent. The reader is, of course, at liberty to draw conclusions differing from those of this reviewer; the principal desire is to stimulate the flow of ideas which produce eventual decisions of value to our Arm.

GENERAL CONSIDERATIONS

The definition of counterbattery, i.e., action against hostile artillery in position and ready to fire, has been somewhat too rigid. Effective action against enemy artillery might include also:

- Disruption of his communication and command system;
- Interruption of his supply, especially that of ammunition;
- Neutralization of his artillery in motion;
- Blinding of his observation;
- Harassing of his personnel not actually at the guns.

Fires of this type, however, may be akin to those of "distant action," and some of them will be a part of the system of direct-support missions of divisional artillery.

One can scarcely quarrel with these opening remarks, but they lead inevitably to the thought that counterbattery is (or should be) very closely interlocked with various missions of divisional artillery.



French corps artillery—April, 1940

PRELIMINARY OFFENSIVE OPERATIONS

General

After discussing the importance of counterbattery, the French text states that the three counterbattery missions during the advance-guard and covering-force operations will be:

- a. Protection of routes, so as to prevent premature abandonment of the normal advance in columns.
- b. Protection of the first combat echelons while they are occupying their positions and being organized.
- c. Protection of the main forces during assembly.

The relative importance of these three operations, and their location and order, are elements which may vary greatly both in

different operations and during the same operation. It is possible, however, to make the following general remarks concerning them:

1. The enemy artillery will often constitute the first danger against which it will be necessary to guard.

2. The disposition of the enemy artillery will at first be absolutely unknown.

3. As a rule, in disposing artillery for counterbattery it is necessary to begin with artillery units on the road, preceded and followed by the various elements of a large unit in march formation.

The foregoing clearly shows the primary importance of counterbattery that exerts a direct and immediate influence on the development of combat. In addition to determining the mission and distribution of this artillery, the corps commander should specify, if necessary, the special conditions relating to the emplacement and subsequent displacement of counterbattery artillery. It is essential that this artillery be ready to intervene as soon as the various units begin to occupy their positions in the attacking line, and that after an important advance it shall be pushed forward soon enough to attack enemy batteries that have moved forward.

Lastly, the corps commander may give instructions concerning the general conduct of fire, including the conditions under which it is to be opened, its preparation, time schedules and initial rates of fire of the different systems of fire, conditions under which they are to be developed further, etc.

Normally, counterbattery devolves upon corps artillery. In certain cases, this action may be entrusted to divisions, which may or may not be reinforced for that purpose.

Note the last paragraph. Very true in certain cases. Not necessarily true if we are dealing with warfare which is exceedingly open and fast moving. The fighting may be *entirely* by divisions. Corps artillery may never "get up." But the need for counterbattery still exists. Hence divisional artillery must be adequate to undertake it from the outset, and throughout all phases of such an action.

In the preparatory stages of a meeting engagement the corps artillery commander is faced with a dilemma. If he does not know the disposition of the hostile artillery, he can

1. Place some counterbattery artillery in position in echelon along the route of advance, so as to have some ready continuously to open fire as soon as contact is made.

2. Emplace some counterbattery artillery based on theoretical considerations as to what he deduces about the situation.

In the first case he slows down the advance of other units. In the second, his solution may fail sadly to meet the situation which may be full of surprises.

If he does have a good picture of the hostile set-up, he will want to deploy all his corps artillery as quickly as possible so as to smother the enemy artillery before it can do any damage. But to do this he will have to place too much corps artillery far up in divisional columns, thus interfering with the freedom of action of divisions. And he will court failure to meet changes in what may be a very fluid situation. "We are thus led to consider more flexible dispositions," says the author.

In furtherance of this idea of flexibility the author decides to divide his artillery into two echelons:

- 1st echelon, placed near the front, capable of getting into position quickly and engaging the enemy. This echelon to be composed of the divisional 75s and the corps 105-mm. long-range guns.

- 2d echelon, the remainder of the divisional and corps artillery.

Such a disposition will give many opportunities to the corps commander, who will be able to order the reinforcement of the 1st echelon of corps artillery (105-mm. guns) with a detachment of divisional artillery. At any rate, the corps commander will be able, by correctly employing these echelons:

Either to create rapidly a powerful counterbattery disposition for replying as quickly as possible to a destructive massed attack by the enemy artillery;

Or to establish proper conditions for the action of his corps by making sure that the heavy corps artillery will support the divisions making the first attacks, by means of fires properly coordinated with these attacks. Note that if the corps had had artillery reinforcement units at its disposal at the beginning it could have made its second echelon of corps artillery stronger and thus taken more advantage of its opportunities for maneuvering.

Whether we agree with this solution of forming two echelons for counterbattery, there are two things to note. First, the French recognized that a mobile counterbattery group, which was really a part of the divisional artillery (except for the 105-mm. guns), should be well forward, and able to get into action quickly. The second item is that the French decided that they would need a mobile (more than the GPF) long-range gun for counterbattery, i.e., the 105. As a matter of fact, the French were handicapped by a lack of modern materiel. Consequently they had to bend their methods to fit their means rather than design and supply materiel which was really suited for modern-style counterbattery. As an aside remark, it probably was no accident that the Germans included a battery of 105-mm. guns in their divisional artillery. Another remark: The French probably knew full well that the 75-mm. gun was inadequate for counterbattery; they were in process of shifting over to a 105-mm. howitzer, which is as valuable for counterbattery as it is for close support.

ORGANIZATION

It is possible and relatively easy under conditions of movement, which at first involve only the use of a small number of guns, to organize rapidly an improvised counterbattery disposition by assigning an observation plane to artillery units, which can then attack quickly and effectively the batteries seen firing.

However, for action against an important artillery disposition, well emplaced, camouflaged, and protected even by hastily constructed works, there is required a more complete organization, the duty of effecting which devolves upon the general commanding the corps artillery. This organization comprises:

- (a) An artillery information service; and
- (b) Groupments directly under the chief of corps artillery.

If necessary, the commander of the corps artillery supervises and coordinates the action of the division artillery to which the mission of counterbattery has been assigned.

Higher commanders in the U. S. Army can always "supervise and coordinate" and they do not require the encouragement of any artillery text. But the reverse is not always true; that is, legitimate requests for fire assistance sent from lower to higher units are not always acted upon favorably, sometimes are even wantonly ignored (personalities enter into this). Therefore we must question the wisdom of the solution suggested in the first sentence of the foregoing. Better than improvisation would be the equipping and organizing of divisional artillery so that it can perform, unassisted, counterbattery during war of fast movement. And, by the way, *the British reached the same conclusion after their recent experience in Belgium*. We must add that this is not a valid reason for entirely doing away with organic corps artillery. It still comes into the picture



German 105-mm. gun (divisional)

under the conditions stated in the second paragraph, above.

When entry of artillery into action (occupation of position) is just beginning, the intervention of a group outside its own zone of action will be precarious. The mutual support to be effected between different groups of corps artillery or between corps and divisional artillery, cannot be given in a timely and effective manner unless the groups which are to intervene in a contingent zone have had time and means for executing necessary preparatory measures.

Correct. This is another argument for decentralizing counterbattery to divisional artillery during fast-moving situations.

When a groupment has fired for a certain length of time in its zone of action, it has obtained the firing data by firing on auxiliary targets and enemy batteries, and has improved its original hasty organization; it is then capable of more rapid and effective intervention. These results, however, which are essentially peculiar to the groups that have obtained them, cannot be transmitted to others. Solely from the technical viewpoint, it is therefore always a poor solution of this problem to relieve one groupment with another having the same mission in the same zone of action.

A very important paragraph. While it constitutes a powerful argument for the retention by corps artillery of the counterbattery role under certain conditions, we must keep ever in view the picture of today's war as differentiated from that of 1918. Will units stay in position long enough to get "set" as they did in 1918, or be there long enough to make it necessary to effect reliefs, or to organize their fires "down to the gnat's eyebrow," as in the old French style? It is doubtful. If divisional artillery furnishes the first battalions to enter the fight, they will be all the more able to execute early effective counterbattery, as well as later. They will be "shot in." They will be familiar with the target area. The data from their registration and other fires, "for technical reasons," can more effectively be used by them or by units directly under them than by units of a higher echelon newly entering the fight. In other words, unless true stabilization sets in, there will be cases where it will be better to parcel out the available corps artillery to divisions; or to allot some and retain the remainder for corps missions other than counterbattery.

After the corps commander has fitted all his artillery into his scheme of maneuver, the organization of the corps artillery will depend on the general disposition of the enemy artillery, the means of observation available, and the opportunities of the command agencies of the groupments. Such organization is comparatively independent of the disposition of the corps for the attack. It is, in particular, not at all necessary to form as many groupments of corps artillery as there are divisions in line, and although it may be convenient to have the limits of the zones of action of the groupments coincide with those of the divisions, it is also very important to use such limits as clearly marked lines on the terrain, so as to facilitate air observation. Moreover, there is no contradiction between this idea of the mutual independence of the disposition of the corps artillery and that of the divisional artillery, and the necessity of ensuring liaison between groupments of the corps artillery and the divisional artillery.

If a groupment of corps artillery is firing into the zone of action of two divisions, it will be in liaison with each of them. This would have

been equally necessary if the groupment had been divided into two parts adapted to each of the divisions. Such a division, however, would have impaired the suitability of the groupment for executing counterbattery, and its flexibility in supporting the divisions.

The only thought we get from this is that there are some cases, even in moving warfare, where counterbattery can be performed best by corps artillery. Hence some organic corps artillery should be retained in our organization, as we have indicated before.

THE COUNTERBATTERY DISPOSITION

The group of 105-mm. guns assigned to the first echelon is placed under the orders of the division commander. He will create within the framework of this large unit a groupment with a counterbattery mission using a plane assigned to the division.

If the situation should render advisable the reinforcement of this group with a detachment of divisional artillery, it would be very advantageous for the further development of the heavy corps organization to reserve the command of the temporary groupment thus created, for the commander of the group of 105-mm. artillery whose radio is known to the airplane and who may already be in touch with the corps artillery commander or his representative at the front.

This seems a little clumsy. A more foolproof arrangement would be to have the 105-mm. guns organically a part of the divisional artillery, then reinforce them from corps if necessary. The main objection is the desire to avoid overloading divisional artillery. However, the present organization is capable of considerable expansion without groaning under the burden, and the addition of some 105-mm. guns would materially increase the fire power without adding to the overhead. We are not prepared to say how many 105-mm. guns should be added. The German peacetime organization called for one battery, which was a part of the 15-cm. howitzer battalion. An objection to this is the difficulty of forming a groupment from a battery. We can only suggest that the 105-mm. gun component be not less than a battery nor more than a battalion. (It should be remarked here that a 4.7-inch gun possibly would be equally satisfactory.) The purpose of the weapon is long-range interdiction and counterbattery during the very earliest stages of the engagement, before any corps artillery or even much divisional artillery has arrived on the scene of action. The Germans have advocated pushing the divisional 105-mm. guns up into the advance guard, even in mountain warfare. But we are discussing the French—

As soon as the 2d echelon (of artillery) has occupied its position, counterbattery generally devolves upon a part of the corps artillery. This transformation of the previous organization must be considered and prepared for as soon as the approach march begins. To this end, the commander of the corps artillery will place at the disposal of the divisions, when the advance begins, an officer of the artillery intelligence service prepared to compile all information relating to the enemy artillery, and a staff officer of the corps artillery who will watch the initial development of the counterbattery within divisions.

Less reorganization will be necessary if the divisions are organized for counterbattery initially. The corps



French 400-mm. howitzer

artillery, as it comes in, can either be "farmed out" to them, or can take over some of the tasks. In either case, little regrouping will be required. As to the AIS, the divisions will need it early, and perhaps they would be happier if they had it organically rather than have to wait on the brass hats to dish it out to them when they graciously decide to do so. The Germans (please pardon us) seem to think so, for they have put this service (the observation battalion) in the division organically. The *corps* has to take it on the fly, so to speak.

From here on the French text tells where the 105-mm. guns should march in the columns; how, where, and when they will go into position, and other features connected with their employment. It is so obvious that this could have been handled better by the divisions (indeed, they are attached to the divisions) that it is useless to carry this portion of the discussion further. The author with commendable logic decides that the place for this artillery is with the divisions, but for some reason not clear to us he fails to carry his deductions on through and *assign* the 105-mm. guns to the divisions.

The further handling of the "2d echelon" is strictly in accordance with our own doctrines. The only comment is that in fast-moving war, this 2d echelon will be employed in an orthodox manner if and when it "gets up." We must have it on hand, but must not count on having it available in the early stages of a fluid situation, even if the prime movers *can* roll along at fifty miles an hour (but are not likely to do so because of traffic jams, dispositions against enemy aircraft, etc.).

COORDINATED ATTACK

The final portion of the French text deals largely with the employment of corps artillery during a coordinated attack. The methods discussed, which differ little if any from those of World War and post-World War periods, seem adequate in general. There are features of modern war which the text did not visualize, however. One of these is the present tendency of the Germans to use antiaircraft and other flat-trajectory weapons, employing direct fire at close range, for the reduction of works hitherto attacked with high-angle fire. This will affect the problem of

counterbattery. It requires considerable study; and rather than presenting snap judgment we will only suggest that a proper solution may lie in having some counterbattery groups also emplaced well forward, or at least in having very alert forward observation, and a great deal of it. Another consideration is that counterbattery may have to be executed against heavy infantry weapons which cannot be attacked efficiently (or even reached) by corresponding weapons of our own infantry. This again will require much forward observation. The third and final thought which we wish to leave with our readers is that one of the greatest enemies of the tank is the field piece. Hence in supporting an armored attack, or an attack of mixed armored and motorized units, counterbattery during the assembly and just prior to the jump-off may constitute the most important part of the artillery support. Everything will be needed for this initially—corps, divisional, army artillery. But after the attack gets under way and breaks up into isolated fights, corps artillery will have no part in counterbattery.

CONCLUSIONS

1. Keep the organic corps artillery essentially as it is now; it will be needed.
2. Instill, in all minds, a realization that counterbattery in war of movement will devolve largely on divisional artillery. Train divisional artillery in counterbattery. Make them "think counterbattery."
3. Consider adding a unit of 105-mm. guns or an equivalent weapon to divisional artillery. Make sure that the medium caliber divisional artillery units are well equipped with radio and forward observation.
4. Strive earnestly and continually for air observation, but don't bank too seriously on getting it.
5. Study the question of the desirability of adding a flash-and-sound unit to the divisional artillery.
6. Develop a more mobile 155-mm. gun than the present standard one. We need a powerful gun that can be broken down into several loads so that it can cross weak bridges and traverse unimproved roads having a thin top-crust. Mobility doesn't necessarily mean high speed on paved roads.

NOTICE OF ANNUAL MEETING, U. S. FIELD ARTILLERY ASSOCIATION

In compliance with Article VII, Section 1, of the Constitution, notice is hereby given that the Executive Council has fixed 4:45 PM, Monday, December 16, 1940, as the time of the annual meeting of the Association to be held at the Army and Navy Club, Washington, D. C.

The business to be disposed of will be the election of three members of the Executive Council (two Regular Army and one Organized Reserve), and the transaction of such other business as may properly come before the meeting.

Proxy cards are being sent out to all active members of the Association within the continental limits of the United States, as required by the Constitution, and it is desired that they be returned promptly. Nominations may be made on the proxy cards or from the floor of the meeting.



Notes from The Field Artillery School

EDITORIAL NOTE: *The following digest represents current thought and methods now undergoing trial at the Field Artillery School, but which have not yet become standard procedures.*

GUNNERY

Conduct of fire.—In conduct of fire, the effort has been to remove unnecessary refinements and make the procedure simpler and more easily remembered.

In bracket fire, it is customary to open with four guns. The fire is handled as a group of bursts; deviations are measured to the burst center. A hundred-yard sheaf is used as the adjusting sheaf for all calibers; this sheaf is not changed during adjustment except when necessary to facilitate sensings and this is rare. Except against moving targets, fire for effect is always opened at the center of the bracket. These methods apply to both axial and lateral.

In precision fire, *c* habitually is used instead of the fork. Small deviations are ignored. Deviations which probably will hamper future sensings, or those persistent deviations which indicate that a change is desirable before opening for effect, may be corrected by a computation to the line. In general, however, if a round can be sensed the deviation is ignored.

Air observation.—The thought in air observation is to keep the plane in the air as short a time as practicable. This is accomplished by prearrangement as to missions, and by methods which permit speedy execution. A slow-landing plane, which can ordinarily find a suitable field in the vicinity of the artillery command post, will greatly facilitate prearrangement. It is *hoped* that such a plane can be procured. As to methods, registration and surveillance of fires permit rapid execution and therefore will be used more than adjustments. The pin-point center-of-impact registrations are particularly rapid, requiring only about two minutes per battery. For these, air photos must be available.

Gunnery technique of the battalion.—Battalions must be prepared to fire observed missions based on the adjustment of one battery, air missions, map data corrected, and transfers. The fire-direction center must be organized to permit ready change from one type of mission to another. To accomplish this, computations are centralized in the battalion. The data for all unobserved missions are prepared by the battalion. Observed fires may be by battery or by the battalion; all unobserved fires, except those schedule fires already transmitted to batteries, must come through the battalion.

Map data corrected is handled as in the past except that the battalion normally maintains the only weather correction diagram and computes all missions.

The thought on transfers (now being tested) differs somewhat from the technique used in the past. For all types of registration, the center of impact is known; the data required to hit that spot are also known. That spot is plotted on the chart and is designated, for example, as Check Point No. 2. Usually one battery only is adjusted; the adjusted data for the other two batteries may be computed readily. The quadrant elevation is used. When a target (within transfer limits) is assigned, the draftsman announces: BATTERY A, CHECK POINT NO. 2, RIGHT 80, 400 MORE. The 400 is measured from an arc, marked on the chart, through the check point with the location of Battery A as the center. The *K* and drift are ignored unless the range of the target differs materially from the check-point range. The officer handling Battery A prepares the fire commands and sends them to the battery.

Several check points giving command of the entire sector are desirable. Transfers to nearby targets are always accurate; those near the transfer limits are of doubtful accuracy.

When an air photo is used as the firing chart, it is usually necessary to have a trained NCO or officer handle the vertical control as his sole duty. He should determine the differences in elevation and compute the sites. He has a firing chart identical with that used by the draftsman, except that he has all known vertical-control data plotted thereon. It is hoped that in the near future he will be equipped with a stereoscope.

Short rapid bursts with the three batteries opening *simultaneously* should often be used. Frequently, two or more battalions should take a target under fire in this manner. Good tactical employment calls for surprise and mass; the gunnery technique must permit of prompt execution of these fires.

TACTICS

The greatest changes in tactics and technique of field artillery in the recent past have been those incident to changes in organization. The adoption of the triangular division and the adoption of a "Standing Operating Procedure" for use therein has materially affected the technique of field artillery.

The necessary changes in the doctrine covering the employment of field artillery of the triangular division, incident to the new organization, have not yet been determined upon.

Outstanding things about the new division artillery organization that will affect tactics and technique are:

- Elimination of regimental headquarters in triangular divisional artillery.
- .50-caliber antiaircraft guns added to many units.
- Six 37-mm. antitank guns added to each battalion.
- An antitank battery (75-mm.) added to the 155-mm. howitzer battalion.

Additional SCR-194 radio sets are added to the firing batteries of light and medium units.

In addition to changes incident to the change in organization, other changes have taken place as follows:

a. In fire direction greater stress is being put upon surprise effect of mass fire of one or more battalions being brought down on a target so as to attain neutralization of it in a short period of time.

b. Greater use is being made of the liaison officer with the infantry to give information, both to his own unit concerning the infantry and to the infantry commander concerning the availability of artillery support and the capabilities of the artillery at the time. Conduct of fire by the liaison officer is considered a secondary mission.

c. Each battery is assigned the battalion normal zone as its normal zone. The battalion commander organizes the battalion normal zone for observation by subdividing it into zones of observation and assigns one of these zones to each battery. In addition he maintains general observation through his battalion observation post. Each battery maintains one or more observers in its zone who, if they are forward, operate in direct contact with the fire direction center with radio (194 Set), and by wire or radio in other situations. If practicable, batteries are placed in the communication net of their respective forward observers for purposes of listening in and to enable the battalion to quickly decentralize fire direction, should the situation warrant such action.

d. All artillery orders have been made much briefer than formerly. This is done by considering many things as routine after proper training.

e. Speedy reconnaissance and occupation of positions, both initial and subsequent, are being stressed.

TESTS OF COMMERCIAL RADIO EQUIPMENT

Interesting and, it is hoped, far-reaching, tests of commercial radio equipment will take place during November. The Signal Corps Laboratories have obtained three Link, three R. E. L., and two G. E. frequency-modulated police radio sets for test by the Field Artillery and Infantry. In addition to the frequency-modulated sets, three amplitude modulated sets will furnish a comparison between the two types of modulation.

The installation and initial test will be conducted under the direction of the Signal Corps Laboratories assisted by Major E. H. Armstrong, the inventor of frequency modulation and one of the foremost authorities in the radio field.

Following the Signal Corps Laboratory tests the equipment, mounted in command reconnaissance cars, radio cars, and weapons carriers, will be turned over to the Field Artillery Board for tests at Fort Bragg. Subsequent to this, the equipment will be tested by the Infantry Board.

The Retreat to Dunkirk



I—NARRATIVE OF EVENTS

Shortly after the entry of Britain into the war in September of 1939 a force was sent to France, the strength eventually reaching 300,000 men, 300 guns, a tank brigade, a light mechanized division, some air units, and various auxiliary and service troops. This force was based on harbors along the west coast of France rather than on channel ports, it being considered, no doubt, that these points would be less vulnerable to air attack. Early in December it was announced that the BEF had occupied, some days previously, a sector on the western front. Though not stated in the announcement, this position was in northern France, along the Belgian frontier but not adjacent to the Channel.

During the winter the British improved their field fortifications and conducted training in rear areas. Apparently considerable energy was spent in trying to keep warm and to maintain morale during this period of combat inactivity.

Although several successive rumors of a German offensive circulated during the winter and early spring, the first intimation the troops received of the actual attack, says a correspondent of *The Gunner*, "was a goodish size raid on our lay-out at 04.15 hours on 10th May, when the nightingales in Regimental H.Q. chateau garden were suddenly jammed by the drone of coveys of Heinkels and

Dorniers. Much metal flew in both directions, but 'little material damage resulted.' Umpteen Battery crippled one Bosche, who was later finished off by L.A.A. fire. This, our first real battle, put morale absolutely on the top line. Twenty-four hours later we had advanced into Belgium. The speed of living during the next three weeks defies description, but briefly, we occupied eight different lay-outs, mostly at night."

The BEF, being motorized, moved rapidly into Belgium and occupied a position along the Dyle River between Louvain and Wavre (see map). Formation, I and II Corps (two divisions each) abreast, I Corps on the right. In addition to these four divisions on line, the 48th Division

of the I Corps was in reserve.

The 5th Division was moved up as reserve for the I Corps and the 50th Division occupied the

line of the Dendre, west of Brussels. The Army Tank Brigade, a collection of slow, very heavily armored vehicles, was moved by rail to a concealed area in the Forest of Soignes. The III Corps, two divisions, occupied a position on the Escaut, some sixty miles west of the Dyle. Four other divisions were held in rear areas to deal with parachutists, saboteurs, and to handle road control. The light mechanized (armored) division and probably other units did not enter Belgium, being held south of the Somme.

During the advance into Belgium and for several days thereafter the troops were comparatively free from German air attack, as the *Luftwaffe* at this time was engaged in destroying the French air forces, and in other missions.

A modern military epic*

*Digested from several British journals and personal conversations with participants.

For six days the British held the line against German attacks directed against the line: Antwerp - Louvain; the main German blow, however, was developing on the Sedan front. Even though the as yet unexplained failure of the Belgians to hold or destroy the Maastricht bridges permitted a German infiltration, and the Dutch resistance collapsed to the north, the British were holding well. The morale of the men was high.

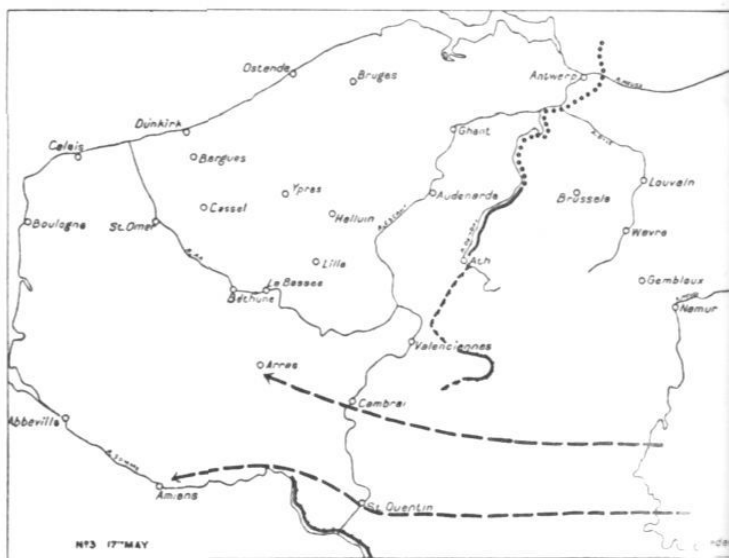
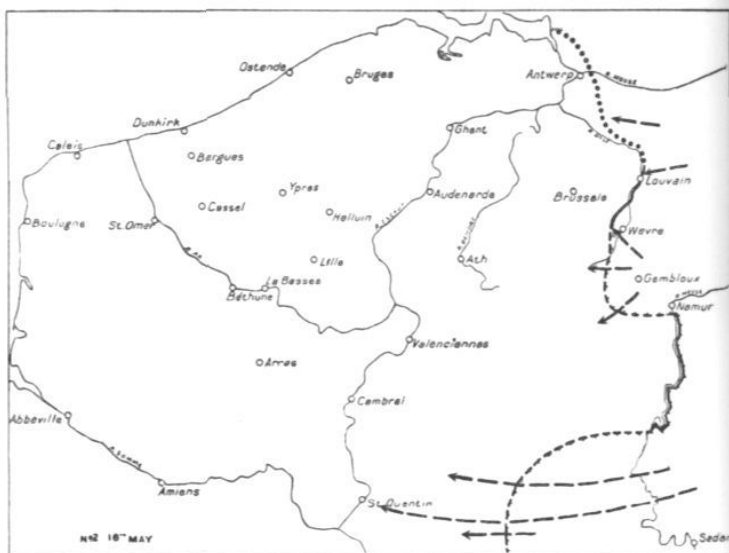
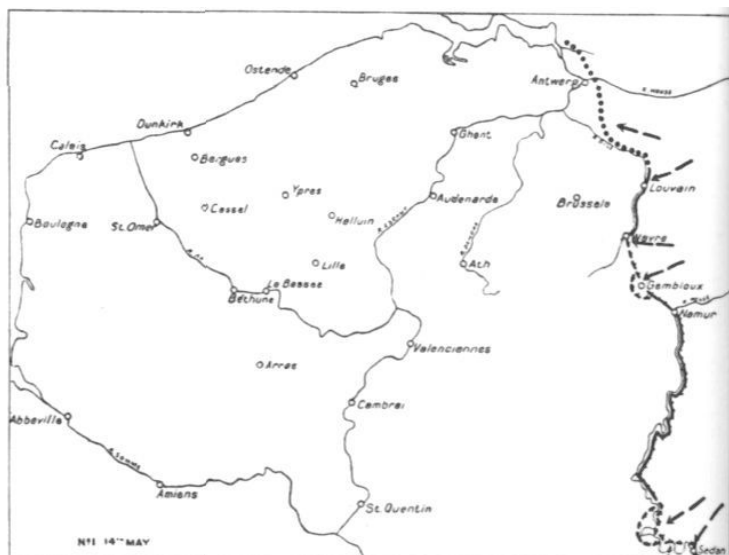
On May 16th it was known that the Germans had broken through on the Sedan front. The German armored units, led by motorcyclists and followed by infantry in trucks, penetrated forty miles in a single day, greatly to the astonishment of all concerned. The French Ninth Army dissolved, and the French First Army on the British right commenced to withdraw. The British were forced to conform to this movement, which they did at once. The I and II Corps moved back to the Dendre. The 48th Division prevented an attempt by a German armored unit to outflank the right.

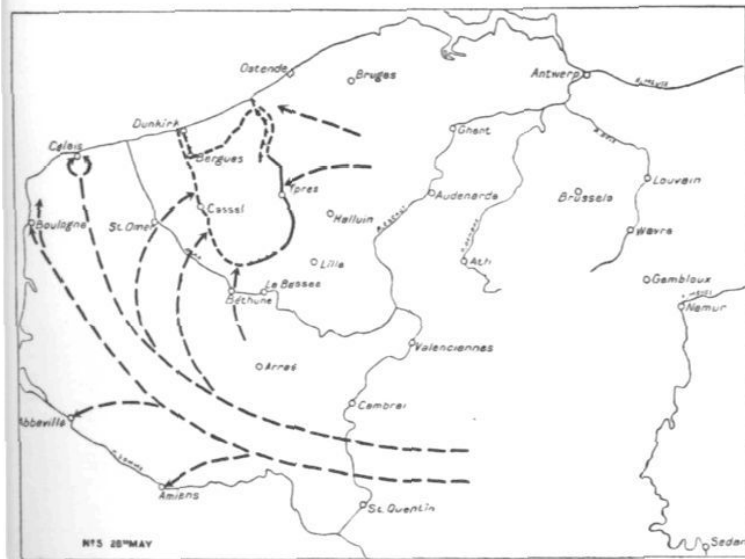
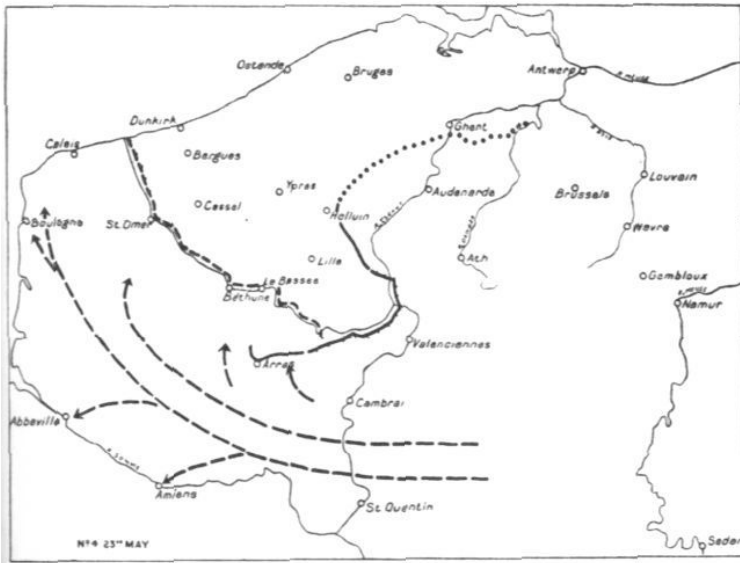
From then on French resistance went to pieces rapidly. The Germans continued to drive swiftly to the sea at Abbeville, and poured armored and motorized troops into the long arm which was now reaching around to encircle the Allied forces in Flanders. On the 19th the BEF was on the Escaut, with the three corps abreast in numerical order from right to left. The tank brigade, which had had to move under its own power rather than by rail, was in GHQ reserve south of Lille; it had made long marches for which the vehicles were not designed, but the British had no other armored units at hand.

It must be understood that by now the German air force was directing its fury on all troops moving on the roads, and these roads were jammed with troops and civilian refugees. German armored units were continually striking at the flanks and rear while the heavy infantry divisions, marching incredible distances, maintained strong pressure at the front. The British found it necessary to protect their right flank by occupying Arras and the line of the Canal from Gravelines-St. Omer-Bethune to Carvin. Composite forces were utilized for this purpose, and their good work permitted the withdrawal to continue without undue loss.

On May 20 it was learned that the Germans had cut the British lines of communication and were threatening the channel ports. It was necessary for the Allies to fight their way out to the south or to withdraw on Calais-Dunkirk. Gen. Weygand attempted to initiate an offensive to close the Cambrai-Peronne gap by simultaneous attacks from the north and south. On the 22d the British at Arras, assisted by a French light mechanized division from the Seventh Army and by their own tank brigade, drove south for some five miles. The French corps on the left did not attack until two days later. The French attack which was to drive north from the Somme never materialized. The plan was not abandoned by the Allies in Belgium for three more days, but the Germans kept them so occupied on all sides that they were unable to release sufficient units to form an adequate counteroffensive group.

On the 26th the BEF commenced to withdraw by





LEGEND

- British Troops ————
- French Troops - - - - -
- Belgian Troops ······
- German Troops ————

stages to the Dunkirk-Nieuport area. The operations of the last few days are well described in the *Journal of the Royal United Service Institution*:

On 26th May, all those composite formations which have already been referred to were abolished and the units composing them were absorbed in the new defence zone. The general line of the western flank ran as follows: Bergues—Wormhout—Cassel—Hazebrouck—Lille. This was held by: 46th Division, 2d Division, 44th Division, 48th Division. The 50th Division was in GHQ reserve southwest of Lille. The Belgian Army was requested to fall back to the line of the Ypres Canal. The east flank of the defensive zone was held by the 5th Division, one brigade of the 48th Division, II Corps, I Corps.

During the day the enemy intensified his pressure against the western flank and it became plain that a general withdrawal to the coast could no longer be postponed with safety.

On the night 26th-27th May the main bodies of the I and II Corps started to evacuate their positions, which were taken over by rear guards. "Adamforce" was formed to take command of all troops arriving in the Dunkirk-Nieuport perimeter and to prepare for their evacuation by sea. The War Office was requested to arrange for the necessary shipping and for ammunition, rations, and water to be dumped on the beaches. From now until arrival within the perimeter the troops had to be put on half rations.

Information reached GHQ early 27th May that the Belgian Commander-in-Chief had requested an armistice. The situation on the eastern flank of the BEF thus became highly critical. The 3d Division was moved up north of Ypres to protect the left flank of the 50th Division.

The retirement continued during the night 27th-28th May, and next night withdrawal of main bodies to the Dunkirk-Nieuport perimeter began. Rearguards fell back to the line of the Lys, northwest of Lille. A French Corps and portions of certain light motorized divisions conformed to the movement. The defensive perimeter was occupied in a methodical manner on 29th May and was held as follows: I Corps, west of the frontier in touch with French troops at Bergues; II Corps, east of the frontier.

Plans for evacuation by sea worked as smoothly as could be expected in such difficult circumstances. During the night 29th-30th May, the British government instructed the C-in-C to leave as soon as his force had been reduced to three divisions. The I Corps was selected to act as rear guard and to continue evacuation at the same rate as the French Army. The embarkation of the II Corps continued through the night of 31st May-1st June. The I Corps took over the defences at 6 PM on 31st May, at which hour Major-General Alexander assumed command of the troops left in and about Dunkirk. The intention had been to embark the whole of the I Corps during the night 1-2 June but, as this turned out to be impracticable, a force of about one brigade, including General Alexander, held on until the following night, when it was finally evacuated to England.

II—WHAT ONE ARTILLERYMAN SAW*

EDITOR'S FOREWORD: 2d Lieut. Peter Hazell joined his Territorial Regiment at a training center in England in February, 1940. Soon after his arrival he wrote a letter home which seems to indicate that rumors of destination and departure are subjects of conversation in British camps as well as in our own; and like our own rumors, they seem to be about as accurate. Extracts of his letter may be of interest as showing something of the training background of this unit before it went to France:

*Reprinted, by permission, from *With the Colours Again*, journal of Hazell, Watson & Viney, Ltd., London printing firm.

". . . As I only arrived this afternoon I haven't had much time to see what it's like. The officers are nearly all territorials who were together in peacetime in a territorial unit. . . .

"The Officers' Mess is the local pub, which is quite congenial, and I am billeted in a cottage with an old woman who looks like Methuselah, and another officer and his wife and child, aged 9 months, so the place is a mixture of valises, Sam Browne belts and baby's nappies!

"We are still hanging on here waiting for the word to go. Rumours of our destination and date of departure vary from day to day. The villagers, who appear to know much more about it than we do, announced yesterday that we aren't going to leave till March and then we are going to India. This I believe came from the Battery Sergeant-Major, who had been told by his landlady who was told by her son Johnny who goes to school with little Bert the postman's son, so it must be true. We've started another one now about going to Scandinavia in July and are waiting till this comes back to us. Our division had the honour of being mentioned by Lord Haw-Haw a week ago. . . . He told us where we were going and when. We are unpacking everything again, and so I expect we will be here for some weeks yet. We are now running a rumour that we are going to Palestine in May. We certainly never consider the possibility now of going to France, and have quite made up our minds that we are due for a more tropical and comfortable country. Nobody, of course, really knows anything."

Shortly after this the regiment went to France. Lieut. Hazell's story of the fighting there and in Belgium follows:

BY LIEUT. PETER HAZELL, 57th Sussex Regiment, R.A.

The Battery Captain's name was Clarke and so inevitably we called him "Nobby." The "New Army" hadn't been able to change that, anyway. He waved his hand vaguely round the little road we were standing on and said, "This will be your troop position." The fields in front of us sloped up gradually to the main road. Some of them were under plough, but mostly they were fine rich pasture. The cows were grazing contentedly in the hot sun and here and there a tethered goat wandered round in its eternal circle. There was a little whitewashed farmhouse on the left at the end of the lane, and an other just on our right. This had a small garden with a few trees in it with a good hedge running round it. "We could put a couple of guns in

there," the Battery Captain said. I thought so, too: the hedge and the trees would provide good cover. We opened the gate into the garden and went in to have a look. The farmer was digging a large hole in one corner, just behind the gooseberry bushes; obviously it was going to be his shelter for his wife and himself and two small children, and possibly his dog. He nodded a good-day to us and went on digging without asking why we had come in.

SOME TACT WAS NEEDED

Neither of us wanted to speak to him because it was hard to tell him that next day we would have to cut his hedges and trees about and dig gun-pits where his vegetables were growing, and when we had done that we were going to put two 25-pounders in the gun-pits, and probably the day after that they would fire; and it would be pretty certain that with the first round all the windows of his little whitewashed farmhouse would be shattered. So we didn't speak to him, and left him digging, and went down to the other house at the end of the lane. The Flemish owner had the same deep-furrowed work-worn features as the man at the other farm, but his smile was quick and his eyes humorous. He was repairing one of his fences near the house and his son was helping him. They had heard little of the war; they had only seen the continual stream of men and army vehicles, tanks and Bren carriers, guns and limbers go rolling by up on the main road. That had been a few days before when some divisions of the 1st Army Corps had gone by, forward towards Oudenarde. They had just been British soldiers so far as he was concerned, the British who had come quickly this time and would help stop the "sale Bosche" from trampling his country again underfoot. But his wife was obviously worried by our presence round her house and eyed us suspiciously. She watched us in silence as we peered inside their toolshed at the end of their house and took measurements with a foot-rule.

I think we both felt uncomfortable about intruding on their existence which seemed so peaceful; the soil there was rich and their crops were good, their cows and pigs and chickens were obviously thriving, and their vegetables were plentiful. They had evidently worked hard and with some pride to provide themselves with the bare necessities of their modest lives, and they had founded this existence, perhaps not 20 years ago, on a land which was nothing but mud and shell craters well strewn



British corps artillery in France

with the bones of men who had striven to beat back an invader who once again was bearing down upon them. So we didn't ask permission to come inside their garden and look inside their toolshed. I would have to talk to them soon I knew, but I wanted to put off the moment when I would have to say—"You see, we are going to pull down your toolshed, just keeping the roof standing, and dig a big hole underneath it and put a gun in it; I may have to pull the end wall of your house down because the brickwork looks very insecure and it might fall down on top of my detachment of gunners when they start firing. This means, of course, that you and your family must leave at once."

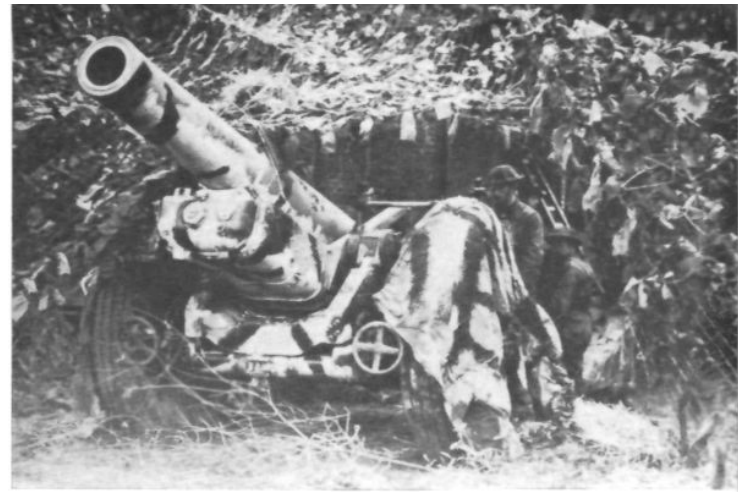
C'EST LA GUERRE

But the next morning I had to tell them, because we had orders to bring the guns in that evening and the gun-pits were started. Down came the cherry tree which stood in the line of fire of No. 3 gun, the hedges in the little garden were chopped about for Nos. 1 and 2, and down came the toolshed for No. 4. The gunners started digging furiously and in silence. They were trying not to notice the weeping woman in the house as she bundled a few belongings together in a sheet. The women of the two houses went first, with their loads slung over their shoulders, down the lane and out of sight round the corner, making for the main road two miles back where they would join that endless tragic stream of refugees. The men stayed for a few hours because they could not bring themselves to go. At last they came to say good-bye. Would I give them, before they went, some sort of certificate to show they were genuine refugees? On the back of an envelope I wrote: "Monsieur Grubbel has been forced to leave his home on account of the war," and signed it 2nd Lieutenant, R.A. It wouldn't do him any good, but he seemed pleased and asked me for my address in England. Then he said, "We are going now. It's sad to leave, but *c'est la guerre*. All we have is now yours—our cattle, our chickens, our pigs. Please milk the cows twice a day, then you will have good milk for your soldiers. They always come down to the corner of the field at milking times so you will have no trouble." We shook hands several times and wished each other luck. Though we hated their going it was a relief when they were gone. By the evening our guns were in position but the enemy were still out of range so everything was quiet except for the anti-aircraft guns which were kept pretty busy. So we got down to our farming. Gunner Nelmes was immediately appointed acting N.C.O. in charge of chickens. Gunner Talbot and Bombardier Brooks, who were farm hands in peacetime, were sent a-milking, and Gunner Budd, who was a butcher, was ordered forthwith to slaughter a pig. We took up residence in the biggest of the three farmhouses and that night forty-five gunners had a magnificent spread of eggs and boiled pork (local produce) and tea and biscuits (Army issue).

EGG RATION INCREASED

Next day our first targets came down by telephone from the observation posts and we opened fire. We kept firing off and on all day, but we managed in the pauses to milk some of the cows and collect the eggs. Gunner Nelmes (acting N.C.O. i/c chickens) reported in the evening that the gunfire so far from reducing the output of eggs as we had feared, had apparently jolted the hens into a frenzy of activity. He had collected 120 from a total of 150 birds. That night we scornfully waved on the ration lorry when it arrived. We were eating boiled chicken, onions and lettuce.

It was a pity that the Germans thought it necessary to fire back at us. The first shell came over early on the third morning, and we were forced to become more and more occupied with our guns.



British howitzer in Flanders

The farms became badly neglected, and when at last the infantry withdrew in front of us and we had to go back too, everything was in a very bad state from a farmer's point of view. The poor cows were in agony for want of milking, the glass hen-houses were shattered and the hens had panicked. The farmhouse just behind my command post had had a shell through the roof and was in serious need of repair. As we drew away I waited to see Sergeant Harrison of No. 4 gun get his gun out of the toolshed. Just as he pulled clear a shell landed almost on the doorstep of the farmhouse and the end wall collapsed, sending a ton of rubble into the gun-pit he had just left. I always had thought that the brickwork looked very insecure. . . .

ON THE WAY BACK

The five days which followed the battle of Escaut were exhausting to say the least of it. Continuous rearguard actions do not allow much time for sleep. In addition, tank warnings frequently came in when the guns would be rushed to action stations on roads and bridgeheads, then at night sudden orders to move again and we would be off to a new position some miles away, to be ready to fire again at first light next morning—and yet there were some good moments, like the time we found the deserted N.A.A.F.I. and we helped ourselves to everything from shaving soap to Walls' tinned sausages and we got enough cigarettes for an issue of 300 per man throughout the battery.

Our last stand was near Merville. We fired continuously all day, and when, at last, night fell the men laid down and slept by their guns. Only for a few hours, for at 3 o'clock next morning we received the news which we had hoped so much would never come. The Germans had taken Boulogne and were closing in from the south. We knew well enough how close they were on the northern and eastern fronts! So we rubbed the sleep from our eyes and received our orders. Dunkirk was still in our hands and we would proceed there immediately. The guns were limbered up again, the tractors and other lorries lined up in the road and the column started to move. A hundred yards down the road we met another stream of vehicles, mostly French, which were halted and unable to move through some road block farther on. We turned round and tried another route, but again we were blocked, this time by a column of about 50 burning lorries; apparently one unlucky shell had put the taper to them all. Scouts were sent out and found that all other roads not in enemy hands were similarly blocked. So we tumbled out of our vehicles and formed up at the side of the road in threes. The men were told that they were about to march 30 miles to Dunkirk, where ships were waiting to take them to England. Then: "229 Battery, move to the right in threes, Right Turn! By the right, Quick March!"

ALL SORTS OF TRANSPORT

So that strange journey started. It was still dark except for the fires which lit the skyline all round us. The continuous rattle of machine-guns was growing closer on our left, but there was nothing we could do now except get as far as possible towards Dunkirk whilst it was still dark. As the road was in places completely jammed with army vehicles of all kinds, it was impossible to keep formation, so we broke up into small groups each with an officer. Soon it became apparent that there might be better means to cover that 30 miles than on foot, a method of getting about particularly distasteful to a gunner. Someone found a discarded motor-cycle and made it work. After five or six miles' walking Gunner Harman came running up to report he had just found a number of brand new bicycles in a railway station. My party took no ordering to go and fetch them and get mounted. Not to be outdone, Gunner Nelmes (my batman) suddenly appeared beside me on horseback and, moreover, he was leading a perfectly good chestnut ready reined and saddled for me. Nelmes had been a groom in civilian life and was thoroughly enjoying himself for the first time for days. After a time I took our party of bicyclists off the main road, keeping to the smaller side roads to avoid the bombing or machine-gunning which seemed so inevitable on such a procession of troops. It was not very long before we came across a disbanded 3-ton lorry. To my surprise it had a little petrol in it and I decided that this was a better means of getting us to Dunkirk than the conveyances we had. So the bicycles were handed over to any pedestrians in sight and to Nelmes's great regret the horses were unsaddled and set loose in a field. Everyone clambered in, hopelessly overloading the lorry. Two men sat on the driver's cabin, others were hanging on all round. I let in the clutch and with a groan the old Bedford truck set off again. It took us five hours to do the last 20 miles, five hours of stopping and starting in a stream of vehicles which stretched all the way to Dunkirk ahead of us, and another 10 miles behind us, and all the time we expected the bombers any moment but they never came. We couldn't make it out—it must have been the largest and easiest target any German had ever seen, but we heard afterwards that the other road had been attacked at Poperinghe.

NEARING THE END OF THE JOURNEY

At last we reached the outskirts of Dunkirk where attempts were being made to reassemble in regiments as much as possible, considering the interference from the air. If we had wondered where the bombers had gone to on the way, we didn't have to look for them now. Wave after wave they came, breaking formation over the town and circling up in spirals like bees over a honey pot. Every few seconds one would reach the peak of its spiral climb, turn, and dive. Lying flat in a ditch, I would count the vibrations of the ground as each bomb fell. We were still about half a mile from the harbour, so you felt the vibration before you heard the explosions, and you could count the bombs more easily that way. Counting passed the time till they had finished, then we would all get up again and move on a bit farther till the next lot came. After a time we didn't bother to take cover till they broke formation. Then when the first dive started down we'd go in the ditch again and pray for Spitfires and count the bombs.

THANK GOD WE'VE GOT A NAVY

We were not sorry when darkness came, and we lay down in our ditch again to sleep. The faithful Nelmes woke me again at 2 o'clock the next morning. There had been a call for officers apparently, up on the road. People were being woken up and formed into a long queue, and when I reached the road I found a

brigadier who said that the 44th Division was being embarked straightaway from the beach. He told me to take 40 men from the head of the queue, all from other regiments than mine. Though I protested that I had a party of my own farther back it made no difference, and so off we marched across the bridge into the town, through the wrecked streets and out on to the sand dunes. Standing above that long stretch of sand we could just see in the semi-darkness the long lanes of men reaching out to the water's edge and, most wonderful of all, the dark shadows of our ships, destroyers, mine-sweepers, and merchantmen of all kinds lying at anchor as near as they dared to the shore. The orderly patience of those waiting men was certainly astounding, and the good temper still held when dawn broke bringing with it the expectation of the bombers. But they didn't come for some hours and when they did they made for the harbour quay again, though nobody was there by this time, as it had already been rendered useless. We almost enjoyed watching them attack it.

HOME AT LAST

After six hours of waiting our turn came to wade out to a large Dutch canal boat and be taken out to a waiting minesweeper. When we were all aboard we cast anchor and started off full steam for Dover. Dover! We were as good as home. I stood on the top deck wearing the first mate's grey flannel trousers and blue tunic and high-necked sweater, whilst my clothes were being dried. Nothing was too much trouble for the ship's company. Every man on board was given a cup of tea and a sandwich, and down in the wardroom they put before me something I hadn't seen for many weeks—coffee, rolls, and bacon and eggs. It was the best meal of my life!

QUITE SURE IT WAS COFFEE?

As I sipped my coffee I thought how different war had been from anything I had expected, how far from the text-books. Farming in the front line, firing guns over the horns of peacefully grazing cattle, ejecting harmless peasants from their homes, firing 25-pounder guns over open sights at advancing infantry, and now sitting in the wardroom in borrowed clothes looking like a cross between a chauffeur and a member of the local bowls club.

Yes—it had so far been a strange war.

III—MISCELLANEOUS ARTILLERY LESSONS AND EPISODES

MARCHES

The British field artillery was completely motorized, the prime movers being 4×4 or 4×6 specially designed military trucks which the British call "tractors." Other vehicles, including supply trucks, were mostly 4×2 commercial "lorries." The military vehicles functioned well and gave little trouble; the commercial lorries broke down frequently. During the retreat the roads became clogged with several lines of traffic all moving abreast on roads designed for only two lanes at the most. Consequently many vehicles became ditched and had to be abandoned. The artillery was generally tied to the roads, the ditches on either side making it almost impossible to get out into the fields. Although a density of eight vehicles to the mile had been prescribed to prevent loss from air attack, this ideal was seldom realized. German planes flew up and down the column at will, dropping bombs and firing machine guns. British artillery troops

(same as our battery) carry two .30 cal. machine guns; these helped some, but were not enough. Losses from air attack were heavy; however, the men quickly learned to dig slit trenches whenever units halted for any length of time, and these afforded fine protection. One officer stated that casualties from bombing were much lighter than one would expect, provided personnel dug in, that direct hits on trenches were few.

The Tank Brigade was able to move on an uncongested route and to maintain the prescribed density of traffic; consequently its movement from the Forest of Soignes apparently was not even detected by the Germans.

One of the principal lessons learned was that all men of a unit, and especially drivers, must know where they are going, and be able to read maps and sketches. Frequently a troop or a battery (same as our battalion) would start off with only the commander knowing the destination and route. Presently he would be killed or cut off from the command by cross-traffic, and no one else was able to lead the unit to the right place. Hence many units were constantly lost, as were individuals and vehicles, and great confusion, much of it unnecessary, resulted.

In moving across country, especially where the soil is heavy and often wet, traction devices (similar to the Hipkins) which can be fastened to the wheels of trucks are essential. Without them the British artillery would have bogged down almost at once. Winch trucks also were of inestimable value.

Shovels on the guns and trucks were indispensable for digging personnel shelters. The British artillerymen "dug their way from Louvain to Dunkirk."

A. J. C. in *The Tank* describes the march with typical British flair for understatement: "During the hectic days of the Great Withdrawal roads became increasingly congested, both with troops and refugees, providing the perfect dream of the Boche bomber and air machine gunner, so that marches were apt to be more exhilarating than the average man appreciated."

DEFENSE AGAINST AIR ATTACK

This topic has already been covered, in part. The principal defense was from small-arms fire, and from purely passive means such as camouflage and the digging of shelters. The thing that stands out is that if men are armed, even if with inadequate weapons, they will feel better, show more courage, and even account for a number of low-flying craft. It must be remembered that not all attacking planes were armored or proof against .30 caliber fire. A few unconnected incidents show what heroism and "sticking to one's guns" can accomplish:

Lieut. R. A. Bilton's 4-gun troop accounted for 18 German planes during the retreat.

Lieut. Norman Bradbury was stationed, with his troop, at the Dunkirk dockyard on June 1 and 2. His guns were repeatedly subjected to shell fire and low-flying bombing

attacks. Displaying great coolness, this young officer and his men accounted for 22 known airplanes.

Some elements of a battery were on a march with a Bren gun for road protection. German planes dive-bombed them and the Bren gunner succeeded in bringing down two bombers with his gun.

Sgt. R. Woodgate was stationed at the dock in Dunkirk. By maintaining an effective fire he dispersed several low-flying attacks on the mole.

On the afternoon of June 8 Lt. Ian W. C. Gordon and Sgt. A. C. Linton were in position with one gun section covering a road block on the Rouen-Forges road. An enemy attack developed and, when the infantry withdrew, the gun acted as rear-guard protecting the infantry from tank attack. The detachment, with its field piece, Bren machine gun, and rifles, is known to have accounted for two light tanks, one field gun and one airplane, and six parachutists.

Gunner Slaughter was manning a Lewis gun in an improvised post when a Stuka attacked the position. Gunner Slaughter engaged the plane and, although submitted to intense fire from the rear gunner of the plane, continued firing and brought the plane down.

On May 11, eleven Dornier 215 aircraft flew at a height of about fifty feet near the gun position at which Bombardier S. N. Thayer was stationed. Although a burst of machine-gun fire came from one of these 'planes, and he was unprotected by any form of emplacement, Thayer opened fire with his Bren gun. The approach of the aircraft was thereby turned away from the site, five 'planes flying to one side and six to the other. Thayer engaged each 'plane as it appeared, and one appeared to be hit a number of times. The rest of the gun crews were greatly enheartened by his courageous conduct, and remained at their posts.

CLOSE DEFENSE OF GUN POSITIONS

Field artillery frequently had to perform antitank missions, both in its own defense and for the common good. Furthermore, artillery positions had to be defended at times against infantry attack. Several examples have been quoted. A few more follow. All these incidents emphasize the point, frequently made in these pages, that artillerymen in open warfare must be armed and trained to protect themselves against armored attack, parachute attack, infantry attack, and air attack. No one weapon will do; several types must be available; rifles and machine guns, if properly employed, will prove their worth, as will heavier weapons.*

On May 29, while Lt. Col. H. J. Parham was covering, with some of his guns, the withdrawal at Bambecque, he noticed that enemy infantry had penetrated on his right. He and a number of artillerymen counterattacked successfully.

On May 26-27 Capt. B. P. Dixon held the two most important bridges at Merville against continuous attacks

*We have yet to hear of a pistol doing any good.

by German armored vehicles, motorized machine guns, and infantry. When the Germans, after intense fire, infiltrated into his position, this artillery officer repeatedly led his men in small counterattacks, bombing the enemy out and taking 20 prisoners. By his action he was largely instrumental in making it possible to hold the town, although it was almost surrounded.

On May 20 Lieut. G. G. Garman was in the leading lorry of an artillery column when on crossing the brow of a hill it met eight enemy tanks. Garman dismounted the men on the truck and engaged the tanks with a machine gun and two rifles. This enabled the other trucks to reverse and get away.

On the evening of May 29, when left with a forward gun to defend a bridgehead, Sgt. J. F. Smith kept his gun in action under heavy small-arms fire. He accounted for two tanks at point-blank range, held up the German infantry for a considerable period, and only withdrew when large German forces had approached to within 200 yards of his position.

Sgt. M. Dooley, R.A.: On the afternoon of May 30 his artillery antitank gun was subject to heavy and continuous small-arms fire from German positions on the far bank of a canal which ran parallel to the sea near the Dunkirk-Nieuport area, and was occupied by British forces to cover the embarkation. The position had to be held at all costs for two days or more. Sgt. Dooley held with five men and a Bren gun, sniping everyone in view until June 1, when German penetration on both flanks forced his withdrawal. Sgt. Dooley's successful work as an infantryman *pro tem* considerably influenced the course of the battle, according to his citation.

An artillery antitank gun was in position on the German side of this canal. It stood its ground with great steadiness and did not vacate the ground until the infantry withdrew. By that time the footbridge had been destroyed, but the gun detachment escaped by swimming the canal.

At St. Vanant, on May 27, Troop Sgt. Maj. J. O'Sullivan was directing the fire of one of his artillery antitank guns during a heavy enemy attack when the No. 1 and one man of the detachment were killed and two others wounded. O'Sullivan, though hit in the arm, continued effectively to fire the gun until the remaining unwounded man was hit. He then manned the gun alone and destroyed at least one more tank before a shell put his gun out of action and again wounded him.

On May 20 Sgt. Frank Thacker was No. 1 of an artillery antitank gun on the Escaut Canal. German infantry crossed the canal and the British infantry fell back. Almost surrounded, Sgt. Thacker fought the Germans with the Bren gun and rifles of his detachment until, although he himself and all but one of his men were wounded, he succeeded in destroying his gun and getting his men back to safety.

Bombardier R. L. Feeley was cited for firing, with his rifle, from the gun seat of his piece, on enemy snipers, and for knocking out a tank with direct fire.

Bombardier Stredwick, with a detachment of six men, was ordered to an emergency position near Hazebrouck. Eight German tanks approached at 1,000 yards. The leading tank was at once put out of action, and the British detachment immediately came under heavy fire from the other tanks. A second tank was knocked out, and then a third which had gotten around to the rear of the British gun. The Germans withdrew.

CAMOUFLAGE

Camouflage was of greatest importance; this lesson was learned very quickly after batteries had been attacked from the air. Camouflage nets were always erected *before* any digging commenced on the emplacement, and before the guns were brought in. Use was always made of natural cover such as hedges and buildings. It was common practice to knock a few boards out of the side of a shed or other small building and conceal a gun or machine gun therein. German artillery was quite active when the British were along the Dyle, and their fire was accurate. British officers testified to the fact that the Germans were "good gunners." The Germans had at least one observation balloon on the Dyle; later they had complete control of the air and forced the retreating troops to exercise every precaution against being observed from the air.

GUNNERY

At first the British had accurate 1:20,000 maps, and were able to do some map firing. They surveyed-in their guns, and registered, and executed transfers in the usual manner. However, they generally laid the guns by compass, and do not appear to have made much if any use of orienting lines. After the retreat commenced, they had fewer maps, finally none at all. Observed fire became the order of the day. Forward observation was common; the infantry were in close contact with the Germans, so that the artillery observers generally were within 500 yards of the enemy. They had no air-photos, and no British planes were available for air observation. Roving batteries were employed with great success to keep the Germans guessing.

There is a belief among at least some of the British artillery officers who were in the retreat that corps artillery will not see much action unless it has air observation or uses plenty of forward observation. One officer states that after they left the Dyle not even the Germans were able to get much artillery forward until the line was stabilized near Dunkirk; he says that the British suffered most during the period of movement from the fire of the German 5.9-inch infantry howitzer (a 155-mm. light howitzer drawn by four or six horses). This testimony is not conclusive, however, as others, including tank commanders, mentioned the effectiveness of the German 105's.

Staggered positions were *always* used; guns were scattered irregularly throughout the terrain, sometimes being so widely separated that they could not be controlled by one officer. But this was necessary. Furthermore the

guns had to be ready to fire in any direction, individually or by organization. On one occasion a light regiment found itself firing back-to-back with a medium unit. The British use a metal gun platform (see *FIELD ARTILLERY JOURNAL*, July-August, page 266) which enables the 25-pounder to be used readily as an antitank weapon, in spite of its box trail and narrow traverse on the axle.

Even though 1:20,000 maps were unavailable in the later stages of the campaign, the artillery was quick to use less accurate methods. "A regiment of the R.A.," says A. J. C., "in position near Nieuport carried out the most successful eye-shooting aided by ¼-inch maps, these unorthodox methods being necessary owing to their instruments having been destroyed."

Targets included small groups of German infantry, tanks and other vehicles in the distance and at short range. The artillery engaged antitank guns, infantry weapons, and artillery at ranges varying from 500 yards up. Often artillery observers would adjust on gun flashes seen dimly through the smoke and dust of battle. Identification of armored vehicles, distinguishing friendly tanks from hostile, was an unsolved problem. There were numerous tragic mistakes made. Antitank guns, using direct fire (as they do) and generally having no defilade, even though concealed in bushes, are disclosed by their flashes, and are often easy prey to machine-gun fire.

There were occasions when German and British gunners blazed away at each other at very short range, in the manner of warfare of a hundred years ago. On May 25, on the canal bank near Meurchin, a gun of the 293d Field Battery received a direct hit from a German shell fired at point-blank range from the other side of the canal. The gun crew, some of them wounded, escaped under the protection of small-arms fire.

COMMUNICATIONS

British batteries were well supplied with telephone and radio communication. They laid much wire during the retreat; many successive positions were occupied. But in most cases they took time to pick up their wire before they left, as they knew there would be no resupply. As to radio, troops appear to have had an adequate number of sets carried in trucks, but it seems that radio communication was not as satisfactory as it should be. The equipment was subjected to very rough usage in the haste and confusion of repeated withdrawal, and this misuse of equipment seems to be the principal reason for unsatisfactory radio operation.

The Gunner for July tells an amusing story of how communication had to be improvised in one case:

During the operation on the Scheldt, the Germans managed to float a barge across the river under cover of darkness, and early next morning were using this as a bridge. As a result, their infantry were pouring across the river in spite of active resistance from a battalion of Guards. The company commander realized that the situation would become very serious unless the barge was destroyed, so he sent for the Gunner F.O.O.—a young and

obviously inexperienced subaltern—and asked him to get on with the task.

The Gunner subaltern did not seem too confident of being able to hit a target so close to our own troops without risk of inflicting casualties on them. "To hell with casualties!" said the Guards' officer. "A few more shells won't do us any harm either way."

The F.O.O. had no means of communication to his battery, as all wire had been left in the previous position, which they had hurriedly evacuated, and he was without wireless too. But the Guardsmen were equal to the occasion. A platoon officer took the Gunner subaltern up to the top floor of a house from where the barge could be well seen, and said, "Now, you give your orders and we'll see they get to your battery." The Guards' officers then set up his chain of communications:

One Guardsman at the door of the top room;

A second ditto halfway down the stairs;

A third ditto at the back door of the house;

A fourth ditto 50 yards down the street;

A fifth ditto at the entrance to a cellar, where Company H.Q.'s were situated. Thence the orders were sent by telephone to Battalion H.Q., and on to R.A. Regimental H.Q., and finally to the battery.

The shoot then began, and the wonder on the faces of the Guardsmen, as they passed the strange sequence of orders, was only surpassed by the marked discipline with which they were repeated so accurately from one to the other. "Ack shot" they reported faithfully, but when this was closely followed up by "Charlie shot," their comprehension began to feel the strain.

Voice from Guardsman (stationed in street): "Charlie shot."

Answering Guardsman (at entrance to house): "Charlie? You mean Charlie Brown?"

1st Guardsman: "No, 'Charlie shot'—it's an order."

2d Guardsman: "Why, wot's he done—Fifth Column? Poor old Charlie."

1st Guardsman: "No, report 'Charlie shot' you silly ass!"

2d Guardsman: "Well, I don't understand it, but——"

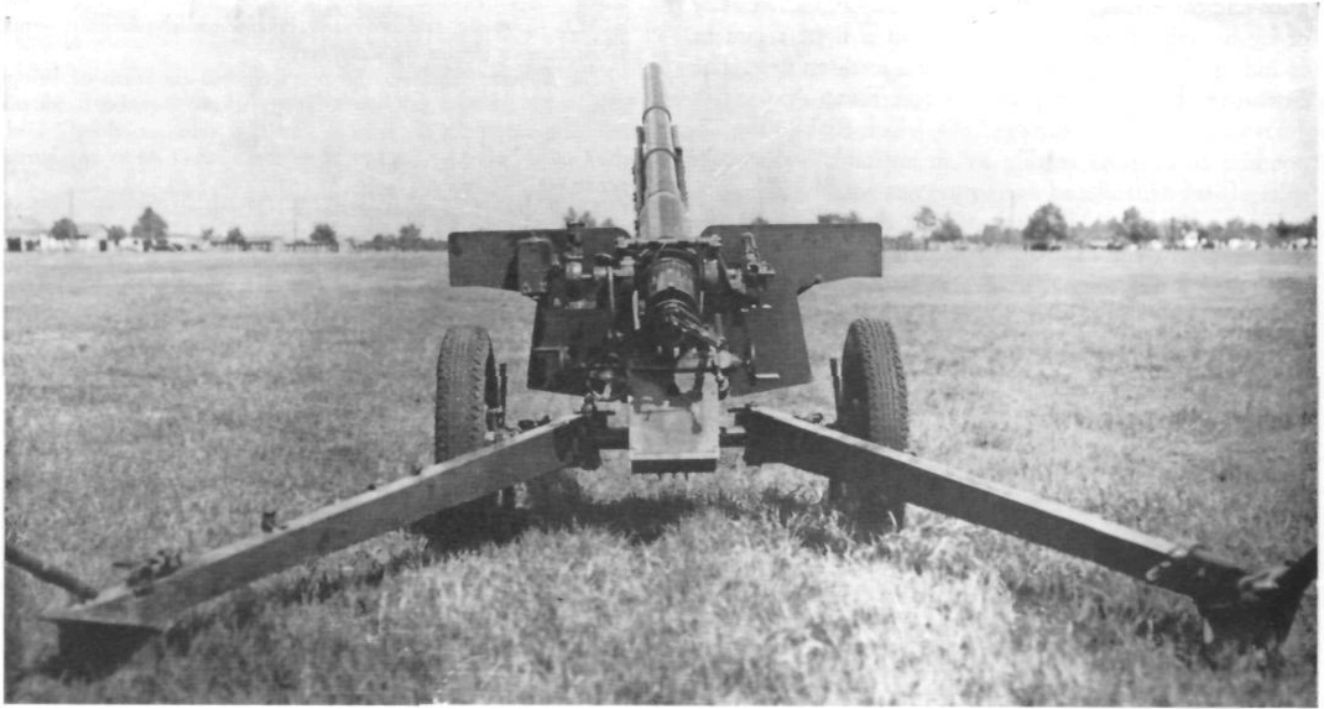
However, the orders eventually got through and in a remarkably short time the barge received a direct hit and burst into flames for, as it happened, it was loaded with oil drums.

SUPPLY

Before the retreat started the British had plenty of ammunition, and enjoyed excellent shooting. Later they were rationed to 20 rounds per gun per day. Had they not been able to salvage ammunition from abandoned lorries which were ditched all over the countryside, they would have been in serious straits.

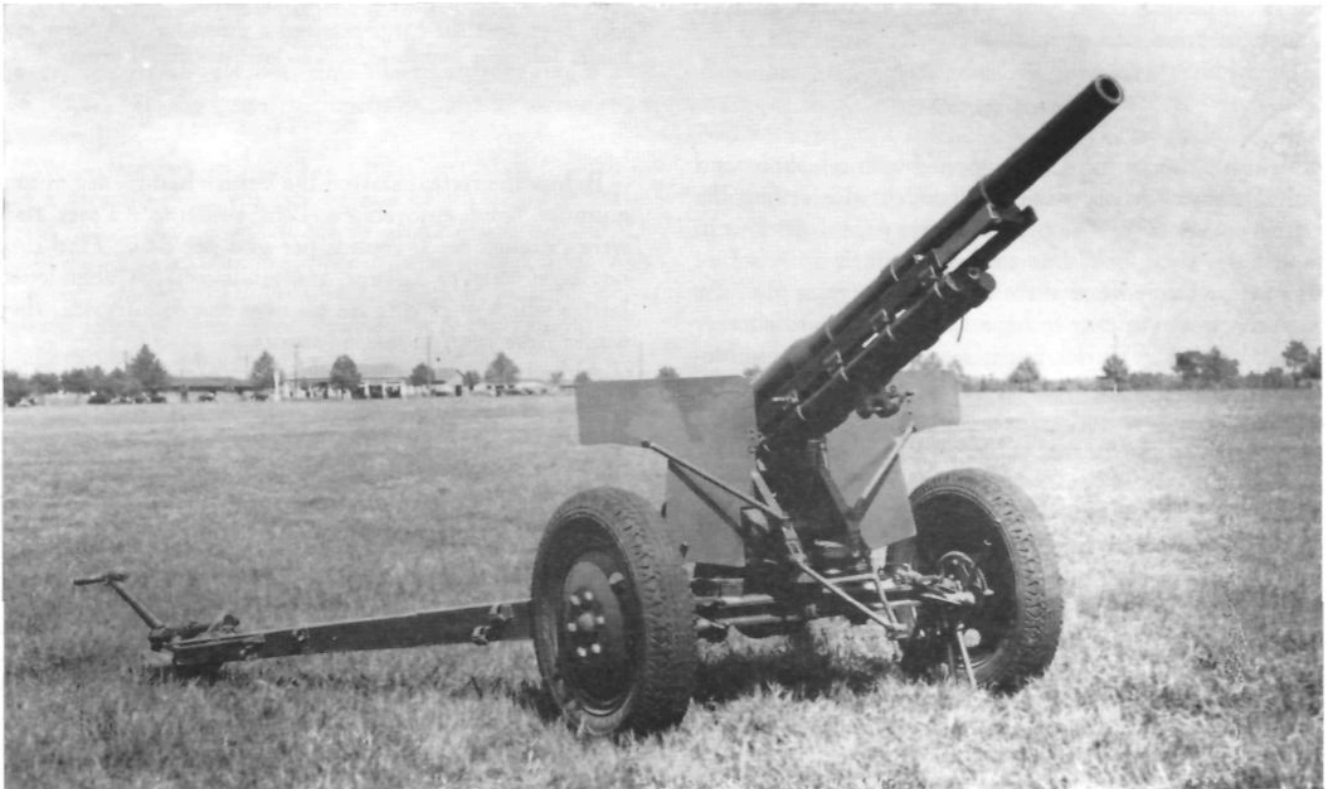
Although each troop had pressure cookers, issues of rations ceased during the withdrawal. The troops lived off the country, just as armies have always done from time immemorial. One officer says that Belgium today is flooded with signed chits for pigs, chickens, cows, and so forth; and he wonders who is redeeming these chits.

One troop was living off the country during the retreat, says *The Gunner*. In the course of the operation they acquired a cow, which they took along with them. On arrival at Dunkirk the men wished to bring the unfortunate cow back to England with them—a sort of mascot presumably; and they are credibly reported to have smuggled it right on to the quay at Dunkirk.



NEW 75-MM. GUN

Here are two views of the 75-mm. gun on its new carriage, M2A3. The carriage has been completely redesigned and is almost identical (except for size and weight) with the recently adopted 105-mm. howitzer carriage. The jack has been eliminated, wheel segments provided for greater stability in direct laying, the weight of carriage reduced considerably, and an improved sighting system provided. This "75" will constitute an excellent weapon for the new heavy antitank battery of the artillery of the triangular division or for such other units as are armed with guns of this type.



Field Artillery Firing Centers

By Major General William J. Snow, USA-Ret.

CAMP KNOX AND CAMP BRAGG

The location and selection of these two camps is an interesting story, especially with reference to Camp Bragg. Camp Knox was relatively easy. The 84th Division, located at Camp Zachary Taylor, Louisville, Kentucky, had leased ground at West Point, Ky., about twenty-five miles away, for a field training and firing area for its field artillery brigade. West Point was territory fairly well known to us, as in previous years we had held maneuvers there. Louisville was an excellent railroad center with six trunk lines radiating in all directions, and with the main line of the Illinois Central Railroad running from Louisville through West Point. The Louisville and Nashville also runs through there. Accordingly, when I needed more ground for a firing center, my thoughts at once turned to this area. I wrote to Colonel A. McIntyre, who had been my Regimental Adjutant in Hawaii the previous year and who was now in command of a regiment at West Point, and asked for an informal and personal report on the facilities of the place. His report was

comprehensive and favorable, so I telegraphed the Commanding General at Camp Zachary Taylor asking for a sanitary inspection of the West Point area. My anxiety about sanitary conditions was due to the fact that the vicinity of West Point was occasionally flooded by Salt River, to which it was immediately adjacent; in fact, high water had bothered the troops then in camp in that vicinity. The report of the Sanitary Inspector was also favorable, so I went down and inspected the place and found that we could get all the additional land we needed adjacent to West Point. It was an excellent farming community and it was, therefore, rather high priced land. As to the periodic floods, I discovered by flying over the area several times that immediately south of West Point the ground rose so as not to be subject to floods and that by clearing out some woods, firing grounds could be obtained. That left the Dixie Highway as the only obstacle. This through highway, extending generally north and south for over a thousand miles, was very much traveled and cut the proposed reservation practically in halves. But as no place is ever perfect, I decided that this highway was

Citizen soldiers arrive for training



Origins of Camps Knox, Bragg, and Taylor

not an insuperable obstacle, as we could control travel over it while we built a new Dixie Highway around the edge of the reservation. So we started to secure about 80,000 acres and began the construction of a cantonment on the high ground. I had a very warm friend, Mr. Gilmer Adams, who lived in Louisville. I told him of my intention to purchase Camp Knox and asked him to arrange a meeting of the men with whom I would need to consult. He arranged a meeting at his house one blistering hot night, so hot that each of us had a small electric fan in front of his place on the dinner table. Adams, to the day of his death several years later, was fond of telling of this evening when we all discussed this project, involving several million dollars, with not a scratch of a pen made and yet with each man faithful to his agreement. The men present, besides Mr. Adams and myself, were: A high ranking officer of the Illinois Central Railroad, who agreed to provide trackage stations, storehouses, etc.; the president of the leading title and guaranty company of the city, who agreed to handle options, titles, etc.; the president of the leading trust company or bank, who agreed about financing the purchase; the State Highway Commissioner, who agreed about the roads we would need; the Chief of Louisville Police, who agreed about the police protection for soldiers, etc.; and one or two other men whom I cannot now recall.

The selection of Camp Bragg was a different sort of enterprise, as far as ease of location was concerned. It will be recalled that I have already said that Camp McClellan was unsatisfactory as a firing center. I had to have an additional reservation. The Secretary of War said I could have it, if I could find it. I wanted a large one, two hundred or more square miles. I consulted the Railroad Administration and they told me that, due to congestion at all northern ports, I must seek a reservation south of Washington, D. C., and to outlet on one or more southern ports which were then being developed. I next consulted the Geological Survey and Coast and Geodetic Survey, explaining my needs, and asked these people to mark on maps several possible sections of the South where they thought I might find what I wanted. I had planned to place Colonel E. P. King in charge of a party to consist of himself, a geologist, a topographer, a sanitary expert, and some others whom I cannot now recollect, and send them to inspect these areas. But the day before the party was to start something occurred to delay furnishing the various experts I have mentioned, except the geologist. So I told Colonel King to get a staff observation car and proceed with the one expert available, as time was too precious to wait, and not to come back until they had found a reservation. I further told Colonel King to telegraph me once a day where he was and what progress he was making. It is a pleasure for me to record here my

appreciation of the fine work done in this search by Colonel King's companion, Dr. T. Wayland Vaughan,¹ the Geological Survey's Chief Geologist of the Atlantic coastal plain. He was a high-class and able man and his services to us were invaluable. All of the areas marked on the map proved unsuitable for one reason or another, but at the end of several days Colonel King telegraphed that he had found what he thought would suit me near Fayetteville, North Carolina. I immediately took the train for that place and spent all day riding over the proposed reservation. It was, however, so densely covered with blackjack and scrub pine that it was impossible to see more than a few yards in any direction, and I could form almost no idea as to the topography. Just before sunset we came out in the open and, after driving a mile or more to a high hill beyond the proposed western boundary, I could look back over the area. The sun was at my back, the light was beginning to fade, giving a blue tinge to the atmosphere, the sunlight illuminated and gilded the hills, the valleys were in shadow, and, as I looked over miles and miles of this, it was a beautiful picture. More important and practical, however, was the fact that studying the panorama with field glasses and the naked eye gave me an excellent idea of the topography and its suitability for a firing center. When satisfied on this point, I said: "I'll take it." We then arranged quietly and unostentatiously to obtain options on the numerous pieces of property involved. There were about 300 property owners and 170 families on the proposed reservation.

Within a surprisingly short time we had ninety-day options on about four-fifths of the area involved, and indications that the total reservation, about twenty-five miles by nine or ten, would cost not over a million dollars. Armed with these options, I secured an allotment from the Secretary of War of \$1,500,000 to purchase rather than lease, because all leases contained a clause requiring the Government to restore the leased property to its original condition, which of course would be impossible with the amount of artillery firing we contemplated. In addition, the Government had long needed just such a reservation east of the Mississippi River, both in war and in peace.

The Government was at that time buying so much real estate, scattered all over the country, that there had been created a Real Estate Purchase Board, composed of men whose civilian business had been real estate, and who were presumably experts in this line. Accordingly, I turned over to this Board all the papers and asked them to buy the reservation. They did so, but, owing to one cause or another, ended up by the government paying nearly \$3,000,000 for it. Part of this excess cost was caused by the slowness and lack of foresight of certain individuals in the Real Estate Section. My office advocated entering into agreements with the owners to purchase their property at reasonable prices to be fixed by negotiation, these agreements to provide for the immediate payment of a portion of the purchase price in order

¹For whom Vaughan Hill was named. Gen. King also recently informed the editor that Cooilyconch Hill derived its name from a misspelling of *Cuil-no-cronch*, a Gaelic word signifying "back of the hills." The origin of this name has long mystified Fort Bragg's personnel.

that the owners would be enabled to acquire homes elsewhere. These agreements were to provide for the purchase of approximately so many acres, final payment to be made upon the presentation by the owners of a clear title to the property in which the exact acreage would be stated. This procedure would have bound the owners to turn over their property at once, would have enabled them to relocate elsewhere, and would have given them sufficient money to pay for their new homes, yet would have placed upon them the necessity for clearing their titles and establishing their right to the property. The Real Estate Section, however, refused to negotiate for the property on this basis and, as I remember, allowed the options to expire before really getting down to business. The Real Estate Section bought "dabs" of land here and there on the Bragg reservation to "fix the price of adjacent land" and also created, as I remember, some sort of a Title and Guarantee Company to guarantee titles. In the meantime the Armistice came along, and many owners who had theretofore been perfectly willing to sell changed their minds. The profiteering spirit then became evident. This was fostered by one individual, who entered into agreement with a number of owners to pay him a certain percentage of all money they received through his efforts, in excess of what the government had offered them. This threw numerous cases into the courts and delayed matters over a year. Under the arrangement with this individual, some of the prices asked were fantastic, several hundred per cent, and in some cases even several thousand per cent, more than previously. And, while all this delay was occurring, Congress passed an Act prohibiting the purchase of any more land. At this time, while we owned a large part of the reservation, yet scattered all through it were farms we did not own. Our holdings were not contiguous and looked on the map like a huge checker board. We could scarcely use this huge reservation without trespassing on some private individual's land. Under these conditions, I accompanied a Committee of the House of Representatives to Bragg for inspection purposes. I showed them the reservation, convinced them that we must either round out our purchases or sell what we had, and I further convinced them of the need of the reservation, both in peace and in war. As a result, Congress, on February 28, 1920, appropriated \$1,128,000 to complete the acquisition of the present (1933) Fort Bragg reservation, which is somewhat smaller than originally contemplated.

We had some of this kind of trouble at Camp Knox, Kentucky, though to a far less degree; in fact, our troubles there in purchasing land were negligible compared to Bragg.

There was one feature connected with Knox which did not obtain at Bragg. The terrain at Bragg was composed of cut-over pine lands covered with scrub oak or black jack, or else of poor, sandy farming lands, with here and there a cotton patch. There was one stand of long-leaf yellow pine.

Knox, on the other hand, consisted of excellent farms and orchards, and generally the country was far more prosperous. In nearly the middle of the Knox reservation was the town of Stithton, a village containing the usual country stores, three churches, a drug store, and a national bank. It was, therefore, necessary almost at the outset to purchase this town. As I recollect, we paid about \$500,000 for it. I converted the largest church into a movie theater until we could build one. At Knox, our principal trouble lay in the relocation and rebuilding of the Dixie Highway. This got tangled up on the books with the cantonment construction.

While the acquisition of Bragg and Knox was, of course, started as a war measure, yet the government has in them, in peace time, two of the most important and useful military reservations it now owns. Bragg has the longest land range of any now owned. My idea, after the war, was to utilize it during peace as the station of the corps artillery (a thing which did not exist in our army prior to the World War), as the station of the Field Artillery Board with such troops as they might need, and as a Center of Field Artillery Studies. It was to be the Chief of Field Artillery's laboratory for experimental and development work, and for keeping abreast of the world's field artillery progress.

Knox, I hoped, would ultimately be provided with a permanent Field Artillery post, and, until that time arrived, would be a summer training ground and possibly a Field Artillery School location. In the former capacity, it is now the station of several regiments of field artillery as well as of the I Armored Corps. It is also crowded in the summer with National Guard, Citizens' Military Training Camps, Reserve Officers' Training Corps students, and Reserve Officers' Training; and recently over sixty thousand men of the President's Civilian Conservation Corps have been camped there. It has proven indispensable.

As far as I know, these are the only camps or cantonment reservations that were obtained and organized as the result of a purely military search for them. No Senator or Representative suggested his state or district, no chamber of commerce set forth the advantages of locating near their city, nor were there any of the other features characteristic of our other war camps and cantonments.

The selection of the names "Bragg" and "Knox" for these two reservations came from the fact that I had, at that time, a replacement depot at Camp Zachary Taylor, Kentucky. The name was long and it irritated me to take so much time in frequently writing or speaking about it. So when it came to naming these two new places, I told Colonel King to hunt up the names of two distinguished field artillerymen with short names, preferably of three letters each and certainly not over five. He suggested Bragg and Knox. I adopted them, giving Bragg to North Carolina, as I knew he had been identified with that State. I then recommended these designations to the Chief of Staff and he approved.



Review at Camp Zachary Taylor

One other incident may be mentioned in connection with the Camp Bragg acquisition in 1918.

It may be recalled that in the previous summer (1917) I had gone to Fort Sill, Oklahoma, and reestablished the School of Fire which had been closed in 1916 when all the Sill troops had been ordered to the Mexican border.

The Infantry School of Arms was also reestablished at Sill at the same time as the Field Artillery School of Fire, in the summer of 1917, and, as I commanded the reservation by virtue of my seniority, I came in close contact with a number of Infantry matters. In this way I learned of the existence of a Board of Infantry Officers (of which I think General Greene was president) that was seeking to find a large tract of land one or two hundred square miles in area and possessing the other requisites for such a school as the Infantry wanted.

I left Sill in late September of that year, went to Camp Jackson, South Carolina, and commanded a field artillery brigade there until the following February 1st, when I was appointed Chief of Field Artillery and came to Washington. Thus by May or June I had arrived at the point of needing an additional field artillery reservation, and had located Bragg. In the intervening nine or ten months since learning of the existence of this Infantry Board searching for a school site, I had naturally forgotten all about its existence. Imagine my surprise, therefore, when, in my elation over having found what I wanted in the way of land for the Field Artillery, I mentioned it to the Chief of Staff and he told me that this Board was then sitting in the War Department and for me to get in touch with it and find out whether they also had selected Bragg! This Board had been in existence over a year, had traveled thousands of miles, had visited numerous possible sites, had been north, south, east, and west as far as Texas, and

were still undecided! A year's search for a site in time of war! If any argument under heaven is conclusive as to the necessity for a Chief of each combat arm, especially in time of war, here it is! In the Field Artillery we had located what we wanted inside of two or three weeks, and I do not for a moment think this speed was due to superior wisdom or more brains or greater earnestness in the Field Artillery. It was because the Field Artillery had a Chief with power to act. The Infantry had no chief, but was run by the General Staff and many, many times during the war I wished that there was a Chief of Infantry with whom I could settle matters affecting us both and which simply dragged along under the then existing conditions.

Complying with General March's directions, I met this Infantry-land-searching Board, told them of my locating Bragg, and found that they favored a site near Columbus, Georgia (the present Fort Benning), but had not clearly and finally made up their minds. I suggested that they inspect Bragg and I inspect Benning. This was agreed to, and I sent Colonel King to Columbus, Georgia, to inspect for me.

In the meantime, the Infantry inspected Bragg. Colonel King, upon his return, said that Benning would answer our purposes, though far inferior, for field artillery use, to the one located at Bragg. I then told the Board they could have either site and I would take the other, *but* if they did not notify me in three days as to their selection I would take the one which suited me best. This apparent generosity on my part in allowing the Infantry to make the selection and give me what they did not want was not as altruistic on my part as it may seem, for the Infantry still maintained their School at Fort Sill, which was badly overcrowded, the field artillery work there was seriously handicapped by this Infantry School, and I was even then adding more field artillery work to

the School. The situation was intolerable. The Infantry simply *had* to be gotten out of there, and, if allowing them their choice of Bragg and Benning would expedite matters, I felt the results would be worth the price I might pay in getting the reservation that I did not prefer. When at the expiration of three days I had not heard from the Infantry Board. I simply notified them I had selected Bragg and proceeded to acquire it. They then took Benning, and again there followed what in my impatience seemed an interminable delay in moving the Infantry School from Sill to Benning. Finally, when they did start to move, the Commandant of the School of Fire at Sill telegraphed me protesting over the property the Infantry was taking and proposed to take with them in their move. I replied, telling him to let them have anything that was portable and which was not exclusively field artillery in its nature. I was determined not to delay their departure for even one day over anything whatsoever.

Here again was a case where a Chief could act and expedite matters. Had there been no Chief of Field Artillery, the usual procedure would have been followed of appointing a board of officers at Sill to determine what parts of the disputed property should be taken and what should not, and days would have been wasted and animosities engendered. Even more relevant to the necessity of a Chief of Arm, however, is the fact that at the time the Field Artillery started to search for a reservation, which ended with the finding of Bragg, had there been no Chief of that Arm we would have appointed a field artillery board to search for a reservation and it probably would have taken us as long as it took the infantry board. I do not for a moment wish to cast any reflection on this infantry board as a whole or on its individual members. It was the system which was at fault. I do not wish even to quote the old definition of a board as being long, narrow, and wooden. I merely want to say that however much wisdom there may be in a board, its nature is not conducive to quick action and time is "of the essence" in war. And in this reservation illustration had there been no Chief of Field Artillery to decide and act, and had this Arm followed the Infantry procedure (where there was no Chief) and appointed a board of field artillery officers to locate a reservation, and had this Board taken as much time to accomplish results as did the infantry board, the campaign on the western front in France would have been well along in 1919 before the reservation was located. There may be wisdom in a multitude of counselors, but there is no action, and war means action, action, action!

CONSTRUCTION COSTS

The construction of the firing center at Camp Bragg called for an expenditure of *seventeen million dollars*. When I took the papers into the Secretary's room for his action, I glanced at the clock and I again glanced at it when I came out after he had approved the project. I had been in his office *seventeen minutes*. Hence, this project might be called "A million dollars a minute!"

The three Firing Centers had been allotted over \$50,000,000 in two days! War costs money!

One day the Construction Division of the War Department telephoned me they did not have fifty million dollars of unobligated funds on hand, and asked me to appear before the Appropriations Committee of the House of Representatives and secure the appropriation. A hearing was accordingly arranged. I reached the Committee room a few minutes ahead of the Committee, and while waiting picked up a printed bill lying on the table and read it. It was a bill appropriating some money to erect a monument somewhere in Kentucky. Just then the Committee, of which Swager Shirley was Chairman, came in and my hearing began. It had proceeded only a few minutes when Uncle Joe Cannon, who was also a member of the Committee, came in and took his seat at the table. Mr. Shirley then said: "Uncle Joe, here is that bill you are interested in," and asked me to hand Uncle Joe the bill I have just mentioned as lying on the table. I did so, and Uncle Joe started to read it. Just then Mr. Shirley said to me: "How much will this cost?" I replied "Fifty million dollars." Uncle Joe turned to me, took off his glasses, and exclaimed: "Fifty million dollars for a monument!" Mr. Shirley explained to him that I was not testifying on that bill but on a totally different matter. Uncle Joe resumed his reading.

During the further course of the hearing Mr. Shirley asked me when I wanted the money. I said: "At once." He then asked me how soon I expected to get possession of the land. I said I already had it. He then asked me how soon the inhabitants would be required to move off the land. I said they had already moved or were moving. He looked hard at me and said: "General Snow, have you got the slightest shred of legal authority for what you are doing?" I replied: "Mr. Shirley, you know there is a war going on and I am doing my best to win it. I want to compensate these people promptly for abandoning their homes." He made no further comment.

THE FIELD ARTILLERY CENTRAL OFFICERS' TRAINING SCHOOL

The Field Artillery Central Officers' Training School was one of the four main features of my General Training Scheme. It proved, also, to be one of if not the most successful features of that program. The only criticism of it that I ever felt constrained to make was as to the length of its name, and this was not of my selection but was "wished" on me by higher authority.

The object of the School was to train selected enlisted men and civilians to become officers. Such training ever since we entered the war had been conducted in each divisional camp or cantonment, the instructors being selected from such field artillery officers as happened to be stationed at the camp or cantonment, and the enlisted students such men as desired to take the course. There were thus 25 or more schools, all more or less uncoordinated, all with different standards and different facilities

for instruction. The only uniformity among them was that each was distinguished for its wholly inadequate course of instruction, its incompetent instructors, and its insufficient equipment. The instructors were, in nearly all cases, reserve officers whose knowledge of field artillery was only what they had acquired in a similar previous school. It was truly a case of "the blind leading the blind," and each succeeding crop of officers was poorer than the one preceding.

It will be recalled that my General Training Scheme was submitted to the Chief of Staff on March 27th, and that in this Scheme I gave among other reasons why this School should be established the following:

- "(a) It insures an uniformity in the preliminary training of officers not otherwise obtainable.
- "(b) It enables us to select men for commission according to fixed standards, thereby securing both justice to the candidates and an uniform standard of fitness in the interests of the Government.
- "(c) It economizes the number of necessary instructors.
- "(d) It economizes the amount of necessary materiel of all sorts, most of which is not now available at the division camps."

I have always understood that The Adjutant General was the main factor in opposing this School, with the result that on April 14th the Chief of Staff notified me that "The General Scheme for Training of Field Artillery is approved, except for the concentration of enlisted candidates for commission at one place and their separation from their commands. Approval has already been given to the Divisional Training School for these candidates." In other words, my Scheme for making officers was disapproved.

When we were working on the General Training Program and had reached the point where I was convinced that only a Central Officers' Training School would solve the problem, in place of the many existing Divisional Schools, we cabled to General Pershing and asked him whether he preferred to have the School in France, we to send him the candidates, or whether we should have it here

in the United States. In this as in all other matters during the war, our desire in the United States was to give him what he wanted. The decision was to locate it here. He already had a school at Saumur. Consequently, the Chief of Staff's disapproval came as an unpleasant surprise to me. But when further experience showed that I was right, and that I simply had to have this Central School, I renewed my application to establish it. I finally got this authority, dated May 20th, just 50 days after I had originally urged it. It is also interesting to note that this authority was finally given, not because of the reasons I had originally advanced, but because in expediting the movement of divisions overseas the divisional schools were left stranded and their disposition became a problem. For this reason, a Central Officers' Training School was authorized for each arm of the service. However, the essential thing was that I then had the authority to go ahead, as my Training Scheme had now been approved in toto and the solution of Field Artillery problems was "up to me."

I had followed the same general plan in working out the detail of organization and course of instruction in this School as in the Replacement Depot and Firing Centers, and consequently these matters had long been settled when the authority to proceed was given. Many men in the office had worked on the plans for this School, filling in the details necessary to its success. I suppose I was exacting. I was thoroughly disgusted with the Division Schools then about to be eliminated, and I had in mind a vastly higher standard in every respect for the Central School. Colonel George R. Allin, Colonel A. H. Carter, Colonel R. McT. Pennell, Major E. P. King, Jr., Major R. L. Bacon, and Major R. R. Channing, Jr., all contributed valuable ideas and valuable work in the preliminaries necessary to the establishment of the School, and some of them in watching over it subsequently. In preparing for this School, I followed the same practice as in the other activities; that is, I placed in general charge of all preliminary work the officer who would

World War artillery training center



command the activity when established. This was Colonel A. H. Carter. The personnel of the School liked to refer to it as "The biggest university in the world." Six months after it started it had 14,000 students.

Of course no school can be created from nothing yet in a few months attain the size and character this one did without producing difficult and incessant questions. Later when Major Bacon, who looked after this School in its early stages, finally left my office to go to Sill, I brought in Major R. E. Coulson, one of the original instructors at the School, to carry on Major Bacon's work in connection with it. My choice of Colonel A. H. Carter as Commandant was fortunate. He was a quiet, levelheaded, clear-thinking officer with much executive ability, pleasing manners, and a thorough worker, never overlooking details. In addition he was always a model in neat, soldierly appearance. He and his wonderful corps of assistants accomplished, in almost no time, results far beyond my expectations. There was, however, considerable delay in turning over Camp Zachary Taylor for this Officers' School and for an additional Replacement Depot, since the camp was at that time occupied by the 84th Division. Finally the Division was sent to Chillicothe, Ohio, and the Central Officers' School opened on June 15th, with 160 instructors and 3,800 students, exactly 80 days after I had originally proposed it.

A sense of fairness compels me to state that I personally was not wholly blameless in the matter of the delay in getting this School under way. When we were formulating the General Scheme for Training, the best figures I could collect showed a surplus of field artillery officers which would amount to 5,000 or 6,000 by the latter part of April, when the Divisional Schools completed the course. As the then existing plans called for the creation of only 2 new divisions in 1918, it looked as though there would still be a surplus of 2,000 or more field artillery officers at the end of the year. Therefore I was not as much concerned with the quantity as with the quality of officers, as is shown by a reading of my reasons for wanting one Central School. Within a few weeks after this time, however, because of overseas calls, an expanding program at home, an elimination of unfit officers, and other causes, the anticipated surplus changed to a deficit. As I saw this approaching I realized my mistake in not pushing the School. It was then that I renewed efforts to get the School, and with final success. My surplus of 2,500 had actually, by that time, turned into a deficit of 2,000 officers. The instructor and student personnel with which we started were of course largely obtained by concentrating this personnel from all the division schools, which now passed out. My earlier complacency as to haste in getting this School under way now gave way to feverish efforts to get it established and operating. By the time it opened I was faced, not only with an actual shortage of 2,000 officers, but with a prospective need as nearly as I could figure of 15,550 new officers by January 1, 1919, for duty in this country. These I proposed to get for the most part from the

Field Artillery Central Officers' Training School and in small part from a flow of officers from France to this country. The officers from France were to be carefully selected (not culls) and were to be promoted one grade upon their arrival in the United States.

As to getting a flow of students for the new School, it was of course apparent that there was much competition among the different arms in every division to get students from the enlisted men, now that each arm had a Central School of its own. It was also apparent that many good enlisted men who were suitable officer material did not want to go to such a school, as it would delay and might wholly prevent their going to France. I was also convinced that battery commanders would "hold out" on good men. The demand exceeded the supply. I therefore looked around for a new source. In fact, from the start, I wanted to depend principally upon civilians as my source of supply, while not overlooking any worthy enlisted man. Telegrams were sent out combing the divisions to see whether any good man had been overlooked or was being concealed by a battery commander on account of difficulty in replacing him, and quite a number of men were uncovered in this way.

However, as a source of supply of officer material the divisions had been combed so often for this thing, that thing, and the other thing, that they were exhausted. The first source that occurred to me was the five hundred colleges graduating about thirty thousand students in June. Accordingly blank forms were sent to these institutions to be filled in by candidates.

I had found that in the National Guard Field Artillery there were so many inadequately educated officers, some of whom were thoroughly incompetent, but very hard to eliminate, that I determined to waste no time in the new school in trying to make field artillery officers of men who were so lacking in basic education as to be unable to absorb the course and to graduate. Of the officers of the National Guard Field Artillery, only about one-sixth had had any experience with this arm, another one-sixth had had experience with some other arm, and about two-thirds had had no experience whatever with any arm. This latter number represented what might be called the last appearance of the Volunteer System, a system that has been so disastrous throughout our military history. To the best of my knowledge, this group represented the only class of officers in our army in the World War who had been commissioned without some sort of military test. They had been to no training camp; they had submitted to no mental or educational test; but had simply been appointed commissioned officers of field artillery by the various governors of states. Some were educated and some were not. Some were excellent men and some were misfits.

The War Department was preparing regulations, setting forth among other things the qualifications which candidates must possess in order to be eligible for entrance to the Infantry and Machine Gun and Field Artillery Schools then being established. I accepted the

qualifications for the Infantry and Machine Gun Schools, and then inserted a paragraph stating that for the Field Artillery the candidate must, in addition, "possess a thorough understanding and working knowledge of arithmetic, algebra to include quadratic equations, and plane geometry. A knowledge of trigonometry and the use of logarithms was desirable. Men having had a previous scientific and technical education and training were most desirable, particularly those educated and trained as civil, mechanical, electrical, mining, or architectural engineers." Of course, I realized with regret that insisting on these qualifications would cut down still further the number of men I would get from the different divisions. But what I was really after was a maximum number of graduates of the School and not a maximum number of failures in the course. My decision proved sound.

As far as getting civilians was concerned, it must be recalled that the draft law at the time the School was established included men between 21 and 30 years of age and there was no way by which a man over the maximum age could get into the field artillery. The country was full of fine men, anxious and willing to serve but over 30 years of age. Many of these were the finest in the country, successful business and professional men, possessing excellent qualities of leadership. I especially wanted them for the higher grades in the field artillery, for, while every graduate would be a second lieutenant, yet I expected that many men would be promptly promoted by selection as they proved their worth after joining troops. It was perfectly apparent that as time went on and more casualties occurred and more new units were organized, the more would these men be needed. Although I searched long and hard, I could not find a way under the law of getting these men who were over 30 years of age into the Field Artillery until the law itself was changed in the late summer to extend the draft ages from 18 to 45.

In getting men from civil life I had the help of a most remarkable organization, The Military Training Camps Association. This organization was the outgrowth of General Leonard Wood's Plattsburg Training Camp idea inaugurated some years before we entered the war. After our Declaration of War, the Association aided the War Department in enrolling men for the Officers' Reserve Corps and the Officers' Training Camps, principally along publicity lines and in examining candidates. Of the 150,000 men thus examined, the government accepted 40,000 to attend these camps. Later, with the establishment of the Divisional Officers' Schools in which the student personnel was selected from enlisted men, the War Department no longer utilized the Association's services.

After I had spent many hours trying to see just how I could build up a nation-wide organization for selecting civilian candidates for my Central Officers' Training School and get it functioning quickly, Major Bacon, on duty in my office, called my attention to this Association. I wrote a letter soliciting its aid and the Association

responded right royally. Captain Arthur F. Cosby, who was its Secretary, immediately called at my office and placed the entire facilities of the Association at my disposal. Here was exactly what I wanted. It was already in existence and had a suitable organization. I at once grabbed it exclusively for the Field Artillery. The amount and value of the work done by this Association, at considerable financial sacrifice, is difficult to overstate. It organized committees in every city and town in the United States of over 50,000 population and these committees, composed of leading citizens, selected candidates for the Field Artillery Central Officers' Training School. The candidates thus selected were then passed upon by an army officer and when finally accepted were inducted into the military service for the duration of the war.

The Secretary of War sent for me, sometime after we had gotten going nicely, and asked me whether I knew that I had the "cream of this country" in my school. I told him that was what I was trying to get. But so well did the Training Camp Association do its work that later on the Chief of Staff took it away from me as an exclusively field artillery agency, and had it procure candidates for all the other arms also. However, before this happened we had gotten many thousand men and had secured wide publicity and the continued good will of the Association which carried us along quite successfully to the end of the war.

Among the many conditions that I laid down to govern the organization and conduct of this School, there are only two that need to be mentioned here. One was that all men, successfully completing the course, would be commissioned as Second Lieutenants of Field Artillery and not, as in all previous Schools, as Second Lieutenant, First Lieutenant, Captain, or Major, depending upon the estimate of the School authorities. It had always struck me as an absurdity and a grave injustice to think that the faculty of any school could, during the few weeks of the course, so accurately estimate a candidate's ability as to determine with any accuracy whatever the grade in which he should be commissioned. I had seen plenty of officers so commissioned in junior grades who proved themselves to be far better officers than those commissioned at the same time in higher grades. While, of course, the junior could in time be promoted, yet the senior could never be demoted, and the only remedy was to eliminate him. This was difficult, time consuming, wasteful, and destructive. The real problem was to get more officers, and not to eliminate those we already had. Many of these seniors would have made excellent juniors.

A second condition I laid down was that, just as soon as it could be done after we got the School going, all records of applicants to enter and in fact the whole matter of selection should be transferred from my office to the School at Camp Zachary Taylor. Washington was the Mecca of self-seekers at that time, and I wanted the candidates to be selected on their merits, impartially and impersonally, outside of this tainted atmosphere. One

of the rare exceptions to the usual run of men, who applied to my office to go to this School, was Walbridge S. Taft. He was, at the time, a Major in the Ordnance Department. He told me he wanted to transfer to the Field Artillery. I told him no officer could so transfer unless he had field artillery training; he asked how he could get the training; I told him that if he still wanted to come into the arm he could do so by resigning his commission of Major in the Ordnance Department, enlisting as a private in the Field Artillery, and going to the Central School to take the course of instruction. If he successfully completed the course, he would be commissioned a Second Lieutenant; if he failed, he would be sent overseas as an enlisted replacement. To my great surprise he replied: "Perfectly satisfactory to me." The next day he appeared in the office as a private of Field Artillery and got his travel orders. Needless to say, he successfully completed the course, was made a Second Lieutenant of Field Artillery, and successively passed through the other grades until he became a major. Had the Armistice not then stopped all promotion he would have gone higher. He proved himself a valuable officer.

The School course was of three months, preceded by a short preparatory course in what were called "Observation Batteries," and through which all candidates had to pass. The object of this preparatory course was twofold; first, to fit suitable candidates for the main course and, second, to eliminate those unsuitable for field artillery officer training. The average satisfactory candidate required two weeks in an "Observatory Battery"; a few required only one week; no man was allowed more than four weeks. At the end of that time, if a man had not shown himself to be suitable officer material, he was transferred to the Replacement Depot, as an enlisted man.

That the Field Artillery Central Officers' Training School actually produced results, is proven by the fact that the first class from this School to pass through the School of Fire at Fort Sill was reported by the Commandant there to be the best class since the beginning of the war.

From the opening of the School in June to the cessation of admitting candidates on November 11, 1918, 18,253 men had entered and over 5,000 had been commissioned as Second Lieutenants in the Field Artillery. The balance of nearly 14,000 were still students. Many interesting facts can be deduced from the elaborate statistics kept at the School. Among the students there were lawyers, teachers, journalists, engineers, students, farmers, business men, bankers, and so on. In fact, nearly every profession and calling was represented, and rating sheets were accurately and impartially kept from the very inception of the school. These records were made by an officer who had been the Registrar of Lehigh University. *The outstanding deduction made from the statistics, as kept at the School, was to prove the value of the educated man as officer material.* Such a man is not necessarily of better clay than his uneducated brother, but his education

has given him a far quicker, more alert, and more flexible mind.

The first two classes were graduated on August 16th and 31st, and contained, respectively, 1,086 and 2,454 men. These classes were naturally composed of the most advanced men who had come to the School from the disbanded Divisional Schools. They were given special training as soon as they arrived at Zachary Taylor, this to force them through at as early a date as possible and thus meet to some extent the then existing serious shortage of Field Artillery officers. This shortage continued during the remainder of the war, but would have disappeared shortly after January 1, 1919, when classes of 1,000 a week would have graduated.

No school ever reached so great a success in such a short period of time. Many commendatory comments came to my office, not only from Americans but from foreign officers who had visited the plant. As one of them expressed it, he "could not believe it was so young."

The ideal toward which I was bending all efforts in educating Field Artillery officers was to give them eight months' training; three months at the Central Officers' Training School to become Second Lieutenants; two months at a Replacement Depot to learn the actual handling, feeding, training, clothing, and caring for enlisted men; then three months at the School of Fire at Fort Sill to learn field artillery technique and tactics. But the ever increasing demand for officers, coupled with the late start we made, prevented the ideal ever being reached. Had it been reached, I would have matched these men, as a body, against any other group of field artillerymen in the world. I feel so strongly about this that I cannot refrain from saying that in any future war steps should be taken, immediately upon its outbreak, to provide a similar set-up with the equivalent of this eight months' training as I have described it.

By January 31, 1919, I expected the output of the School to catch up to needs and I could then get my head above water. Thereafter, the output would run ahead of the needs, and I could do something toward the elimination of incompetents.

On November 14th, the following telegram was sent out by order of The Secretary of War:

"No more candidates will be admitted. Candidates now in attendance will be allowed to complete the course, or will be discharged immediately from the Army, or at any time prior to the completion of the course of instruction which they are taking, at their option."

Under that authority many students took their discharge at once and others dropped out from time to time. However, 3,487 graduated subsequent to November 14th, the last class of 499 finishing February 1, 1919; and thus came to a close one of the most outstandingly successful activities of the War.



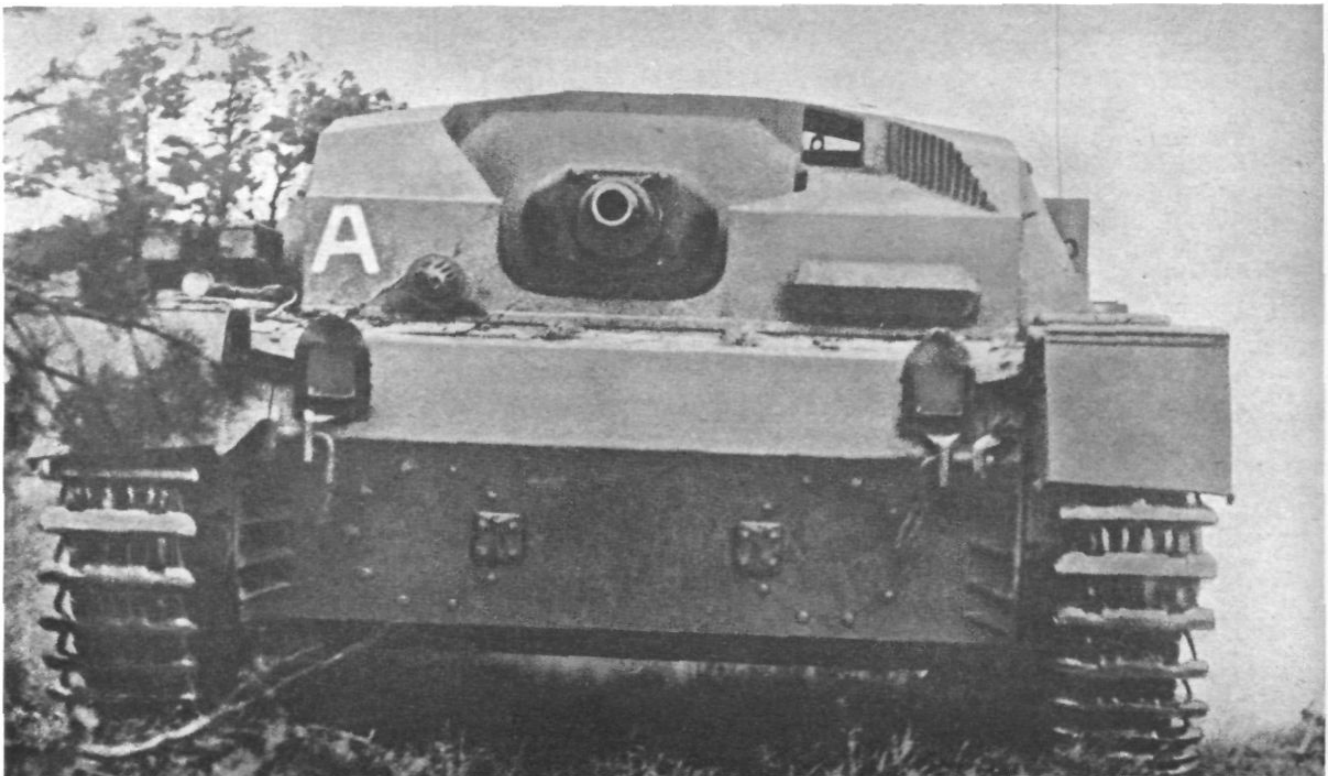
New German Weapon

Above and left:
ACCOMPANYING GUN —

STYLE OF 1918

We are indebted to the German magazine *Signal*, 2 September 1940, for these illustrations of accompanying guns of yesterday and today. The World War showed that the infantry needed more than machine guns and mortars to smash resistance. An accompanying gun was demanded. To fill this need the German regiment was equipped with infantry cannon. But now we learn that they have still a later development shown below —

Illustrated for the first time



THE OFFENSIVE GUN
as it is called in *Signal*; but perhaps a more descriptive title for it would be "armored self-propelled accompanying artillery." According to the German account,

this is not a tank. It belongs to the artillery. "The technique of its employment in battle is exactly that of artillery." Apparently it uses direct fire at short range or indirect fire with close, axial observation.



The accompanying photos do not show such details of construction as thickness of armor and caliber of gun, but we would surmise that the Germans have utilized obsolescent light tank chassis, that the front of the vehicle is heavily armored and the back, sides, and top are lightly armored. The gun appears to be the same as the 75-mm cannon used by the infantry. The main features are probably low silhouette, speed of movement, rapidity of fire, and sufficient power to attack machine guns and other infantry weapons. Employment is by individual piece, usually, and gun commanders must understand something of infantry tactics. German newsreels indicate that a vehicle like the "observer tank" is used as a prime mover for artillery with Panzer units.

Above:
When the gun approaches the front, the chief of section dismounts and works his way forward to the infantry to learn the situation and decide how best to employ his gun.

Right:
Chief of section observing the fire of his gun, which may be in a masked position or in the open.



The accompanying gun displacing. The commander is leading in an "observer tank." Note the trailer. We would guess that it carries signal equipment and other supplies.

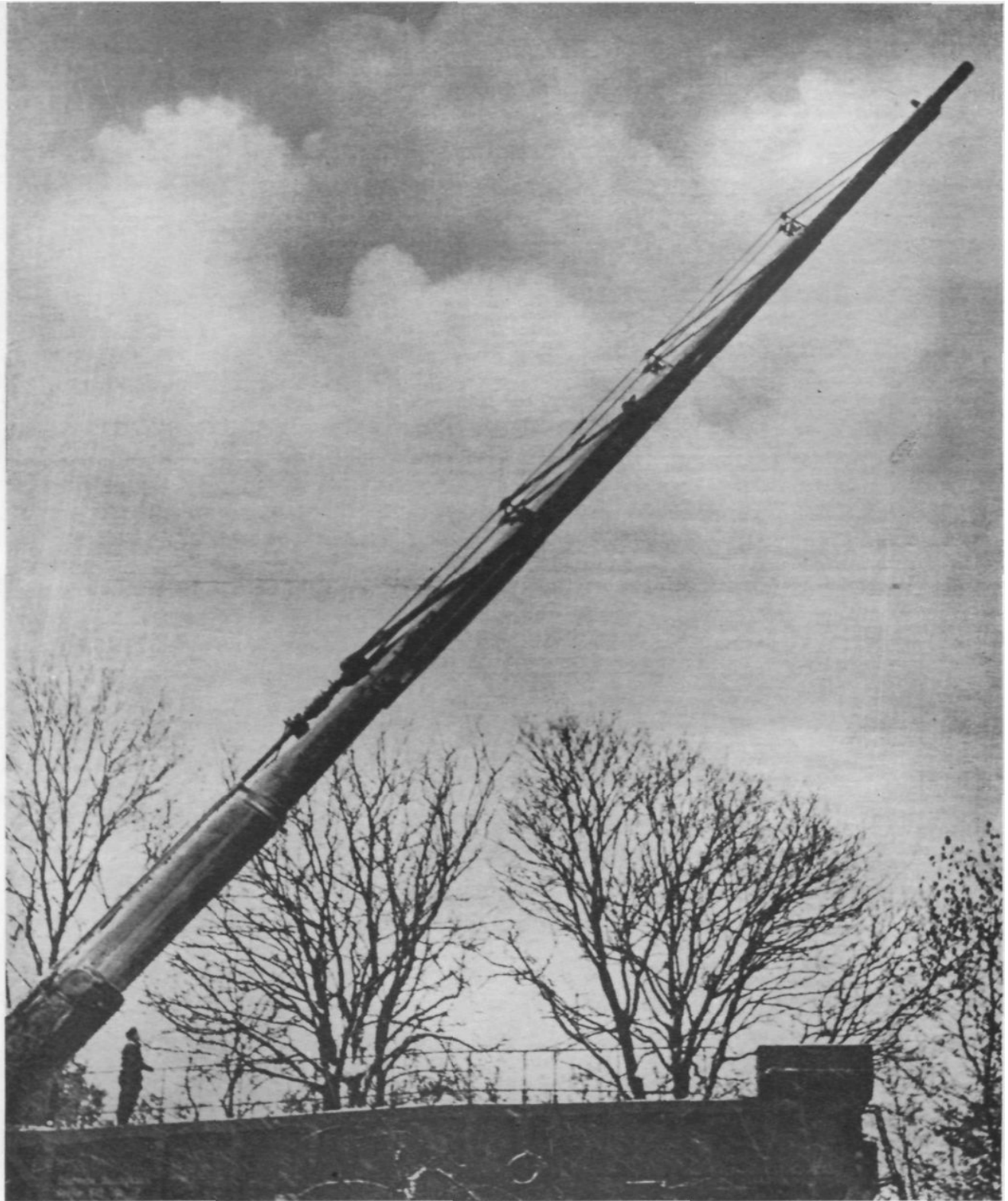


Right:
Ammunition being transferred from munitions carriers to gun vehicle. The munition vehicle always stays in sight of its guns.

Left:
May 10, 1940. Column of the new accompanying guns advancing into France in the vanguard of the German Army.



THE CAP GRIS NEZ GUNS

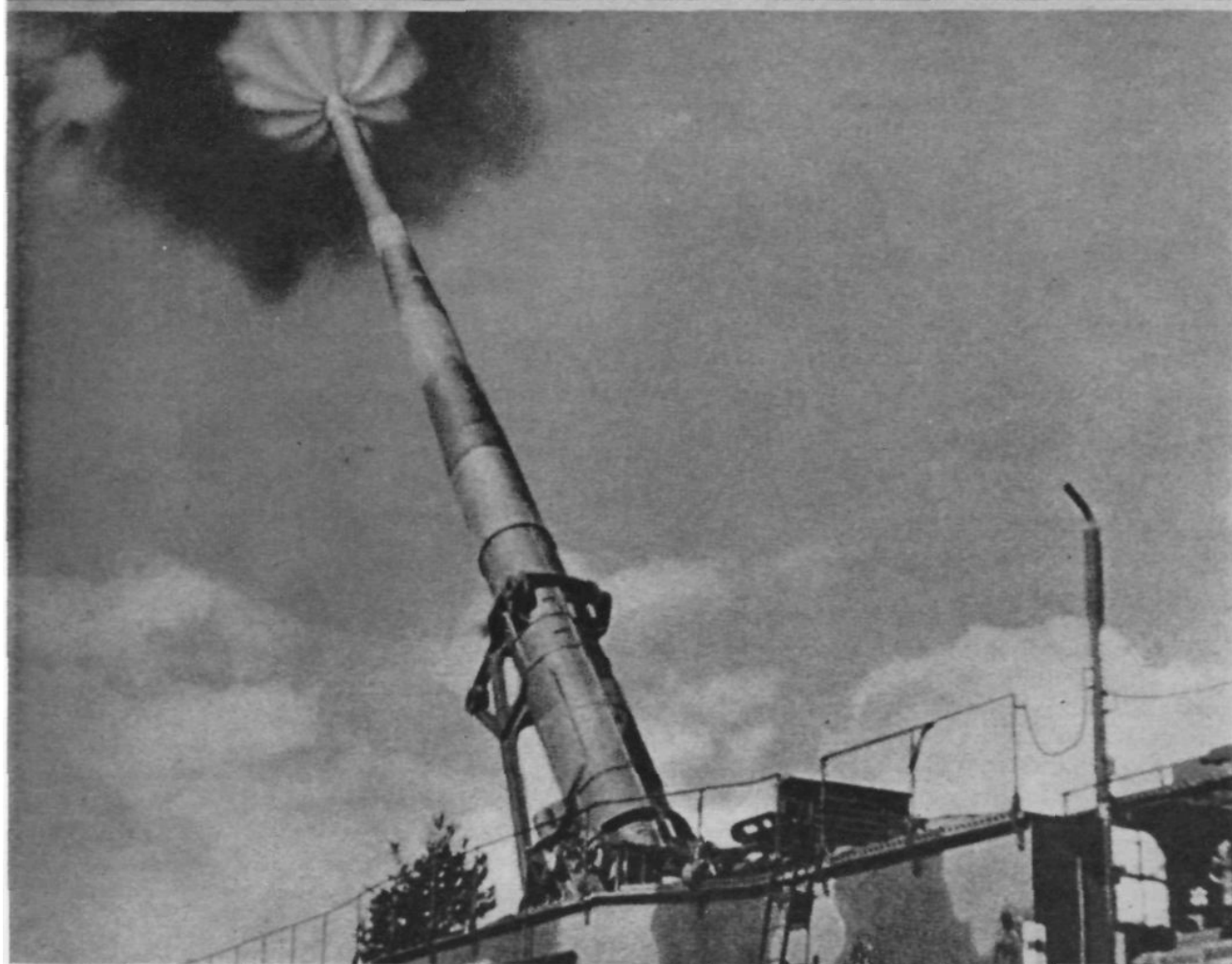


From "Signal"

GERMAN COASTAL GUN

German newsreels show that, when the piece is fired, the tube whips and vibrates like a fishpole.

Long-range German railroad artillery emplaced to dominate shipping in the English Channel. A number of these guns have been active near Calais since last summer, and in spite of frequent British aerial attacks, still fire occasionally at shipping in the Channel or at docks and ships near Dover. Photos from the German weekly pictorial magazine, "Signal."



A German railroad gun firing on a British convoy as it runs the Channel blockade. Can any of our readers give the reason for the curious shape of the muzzle flame? The telephotograph above shows shell-bursts in vicinity of the convoy.

Artillery in Open Warfare



An infantry-artillery team of a German motorized division in action in Poland*

I—A LIGHT ARTILLERY BATTALION'S BAPTISM OF FIRE

On the evening of August 31, 1939, the order came to march into Poland. With vehicle headlights masked, the battalion left its quarters and moved up close to the boundary line, into prepared positions. Everything went on as if it were still peace time. There was much discussion as to whether we could draw up the motor vehicles close behind the "position in readiness" or should assemble them farther away, and also as to whether we should place the command post of the battalion at a farmhouse or not. How often have we since laughed at our preoccupations at the time, and how things happened differently in reality.

The objective of the regiment and of our battalion was announced; reports of battery positions came in; "fire readiness" was announced, and only a short sleep separated us from the great event—the first actual shots of the war.

In the early morning hours a thick fog covered the landscape. The hour-hand had passed 4, and the time of the attack was near. The main terrain feature lying before us was the Kamionka, a small river which here in East Pomerania forms the German-Polish boundary. Over the tracks of the East Railway running from Berlin to Königsberg we saw on this side of the stream an armored train, of giant proportions, which appeared still larger due to the effects of the fog, making its way toward the enemy. (This is the same train whose battle exploits were described in *THE FIELD ARTILLERY JOURNAL* for May-June, 1940.)

At exactly 4:45 AM—in long lines our infantry has already passed through our position of readiness on its way to the front—we hear the dull and continuous rumble of heavy artillery fire to our left. In our attack sector it is quiet, and after a short time the order comes for a change of position. In the glen-like river valley there is at first some obstruction at the emergency bridge, but as soon as the trouble is removed we advance quickly. In thick fog

an infantry regiment is marching along the Blumfelde-Bonstetten-Goersdorf road. The battalion staff remains a short distance behind the regimental staff and the battery headquarters of the 1st and 3d Battery march close behind the battalion staff, while the 1st and 3d Battery, after having changed position, have placed themselves in the march column farther behind us. The 2d Battery has been given a special mission under the 2d Bn. and is now with the latter at the head of the infantry regiment. In the villages we are enthusiastically received by the ragged, sorrowful-looking German population; along our route are columns of fugitives coming toward us and, at first fleeing at our approach, turn back again, because our advance has overtaken them and fighting is now going on ahead.

The battalion staff has just passed Goersdorf when we hear through the fog, which has not yet cleared away, some shots fired by a light battery. That can only be our 2d Battery, which has gone into position east of Goersdorf. The battalion commander goes forward quickly, shakes the hand of the battery officer, who is beaming with joy, and congratulates him on having fired the first actual shots of the battalion in this war. There is general rejoicing among the officers, NCO's, and men when now, after another command, 10 volleys of the battery (40 shots) are heard in the fog toward Dtsch.—Cekzin. It is 9:15 AM.

Farther on, the vehicles are moved ahead fast. The infantry point has advanced still farther with the armored scout cars. The sun has finally pierced the fog and the thick curtain presented by the latter is slowly drawn away. The battalion staff with battery headquarters of 1st and 3d Batteries reaches Schlagenthin and first goes south to Hill 174 for the purpose of making a halt. From this excellent place of vantage we can now get our bearings well. At the same time the report comes in that our own infantry has stopped on the line Dtsch. Cekzin-Judenberg-Abrau before what appears to be a strong enemy force, so that we get the impression that the enemy really intends to defend himself on the

*From *Militärwissenschaftliche Rundschau*, March, 1940.



Map 1. Situation at 9:15 AM

fortified works known to us on the other side of the Wittrich sector (Wittrich Abschnitt on map). The battery headquarters with their numerous vehicles have likewise arrived just west of hill 174, on the highway. We have for the first time an assemblage of a large number of motor vehicles, something which we contemplate with uneasiness. Messengers are dispatched to bring the advancing artillery echelons to Schlagenthin. Another NCO is given the mission to bring up, to the east edge of Schlagenthin, also the repair echelon and the baggage of the battalion, which was brought up at closed intervals. No sooner has the last motorcycle messenger roared away when the commander of the infantry regiment comes up, informs us of the new situation, and at the same time transmits to us the latest orders of the division. According to this, the Poles have really taken up a defensive position on the other side of the wide stream sector. Over this sector the infantry regiment is attacking the enemy in his field position, and for this purpose the 1st Battalion of the 2d Artillery Regiment is attached to the infantry regiment. The 2d Battery is likewise again at the disposal of the Battalion, and while the adjutant sends a messenger to the 2d Battery with the order: "Change battery position, battery headquarters here at hill 174, the rest of the battery at the west exit of Schlagenthin," our battalion commander receives the following order from the infantry regimental commander:

"My regiment, with its 2d Battalion in the front line, is to deliver an attack over Abrau and Sicinny against the defensive field positions of the enemy lying between Tucholka and Jehlenz.

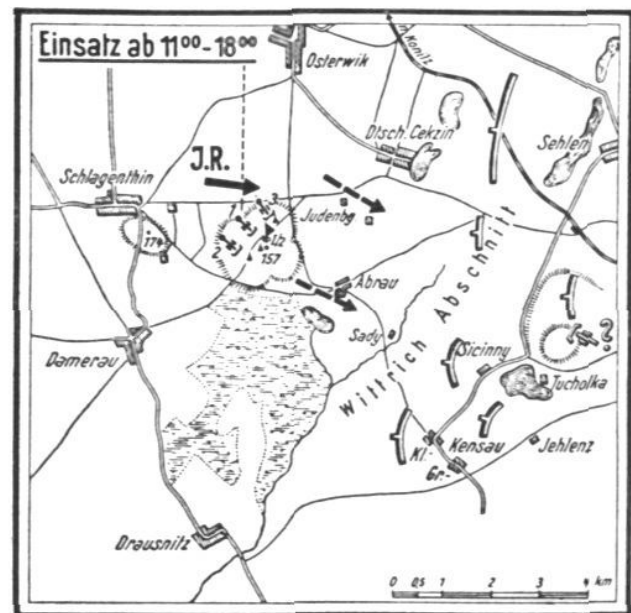
"To support this attack, the 1st Battalion of the 2d Artillery Regiment goes into position with observation at point 157 (2 km. west of Judenberg) and with firing

positions almost directly northwest of point 157, so that the attack may be effectively supported by concentrated fire.

"My observation post likewise will be in the neighborhood of point 157."

So, then, operations have proceeded this far. There is great joy at the prospect of concentrated employment of the battalion, and everybody is moving forward. The battery commander (2d Battery) comes in at just the right time with parts of his battery headquarters, so that it is possible to begin issuing orders to the battalion. Fortunately, we are not pressed for time. The mass of the infantry regiment is still farther behind, and some of it marches dismounted along the approach highway, so that we may not expect the attack before 1:30 PM. It is now 11:00 AM.

"Battery headquarters and intelligence platoon go forward with me; I reconnoiter the positions of the battalion. Batteries forward at the exit of the village Schlagenthin," is in brief the "saddle order" of the battalion commander, after all the commanders have been informed concerning the missions of the battalion. The messengers rush away quickly to the batteries; everybody mounts, and the entire regiment, now consisting of over 40 vehicles, and behind them the intelligence section with 20 vehicles, drives forward over the road leading from Schlagenthin in an eastward direction toward Dtsch.-Cekzin. Here we reach the covering forces and are soon in front of our own infantry. Bending away from the road in a southerly direction, we also reach the unoccupied hill 157. As a scanty protection only a few motorcycle messengers ride ahead. We drive halfway up the slope and go up the rest of the way on foot to the top, in the middle of which and at the highest point we find just the right place (peacetime) for the observation post of the battalion commander and for that of a "call battery"



Map 2. Situation from 19:50 AM to 6:00 PM. Note batteries close to OPs on hill 157.

(battery within earshot of the OP). From here we get an excellent view. Before us, in the bright sunlight, lies the entire sector. At first we have the light against us but, as the hours pass, the sun moves more and more to the side and finally is at our backs. We can see far over enemy terrain and into the villages that we are to capture. From this excellent height we also have a faultless view to the rear, so we can now use the battalion under conditions that are just as ideal as any we might picture in our imagination for a peacetime tactical inspection.

Another quick order from the battalion commander:

"Observation posts of the battalion: 2d Battery to the right and forward on this hill; of the 3d Battery, to the left and forward; of the 1st Battery (which is the 'call battery'), here." At this place is also the observation post of the battalion commander. Firing positions—pointed out in the terrain—close behind the observation posts.

Orientation points are selected for the map target indicator, and orders for the signal communications are given; then work begins. The signal platoon has come up; the telephone is already busy, and in view of the busy battalion staff and of the batteries coming in after a short time, as well as of the wonderful fall day of late summer, one has the impression that he has been transplanted to a formation inspection on maneuver grounds for troop exercises. Base points are plotted; tracings are sent to the batteries by dismounted motorcycle messengers; the missions of the battalion are again formulated in writing, fire missions are assigned; the signal communications are tested and then the batteries report over the wire: "Ready to fire."

At first, observation with the scissors telescope does not discover anything concerning the enemy positions. On the other hand, enemy movements are detected in the village of Sicinny. Opposite us lies the Pomorska Polish cavalry brigade, part of whose led horses seem to be standing there. So then we prepare a concentration on Sicinny with 10 volleys for each battery (120 shots from the battalion). For reasons of surprise, ranging is forbidden. The battalion wishes to open fire with a great hammer-blow of fire. Of course, we have not yet received the fire permission of the infantry to which we are subordinate. The battalions of the latter now seem to be on both sides of Schlagenthin, to our rear, on a broad front and moving toward us; we are waiting for the order to fire. It will be a great moment for us, the realization of our peacetime training.

And then the order comes in: "Battalion is free to fire," and the order is heard: "Commanders at the telephone." The adjutant passes the word: "In 30 seconds, fire concentration against Sicinny, 20 seconds to go," the commanders repeat "15 seconds to go"—below in the fire position stand the cannoneers with the lanyard in the hand—10 seconds to go. *Attention, Fire!* Boom, boom, boom,—the great moment has arrived; with sustained reverberation 120 shots are fired by the battalion. While

everybody is listening with rapt attention, our shells begin to burst over the target. Volley by volley they explode in the village. In spite of indirect fire, the shells fall at the right place without exception. "The shots of the battalion have fallen accurately," reports the telephonist upon order of the battalion commander. Full of pride, we watch the action. Galloping riders and fast motor vehicles leave the village, which is veiled in fire and thick smoke. We see the enemy for the first time.

The next target is designated. It is again a village, because we can see nothing of the well-camouflaged field position of the enemy. The battalion again fires a concentration (Feuerschlag) which falls well, without ranging.

Now comes fire on the edge of a forest in which movement was reported. But still we can see nothing definitely of the enemy. The concentrated fire of the battalion is trained on the long edge accurately and quickly, until the batteries report a target and then they are free to fire. Thus our battalion continues to fire, while the fully deployed infantry battalions come up slowly from behind. Then all at once there is a hollow crack over there and we hear a whistling in the air that causes everyone to stop and look into the air. This is the first enemy artillery shot. And then we see far behind us the first large black smoke cloud and this after a brief interval is followed by a weak explosion. A shell. And again a gun is fired in front of us and again a whistling sound over us and the shell falls.

No one observes the enemy any longer. All eyes are turned to the rear as the third shell strikes behind, halfway between us and our advancing infantry. It is a strange sight to see hundreds of infantrymen, with the appearance of toy figures, advancing over the wide plain. At the sound of each shell, they suddenly stop and hundreds of heads are turned backward. The whole mass of infantry again starts forward and comes nearer and nearer us. Again a shell, which falls closer and makes a louder report. The advance stops again. Heads turn as if on a string, and then the movement starts up at a more rapid pace. They want first to get out of the Polish artillery fire, which is still weak. The companies climb up our hill, pass by our observation post and disappear in the distance ahead.

The Polish artillery continues to fire. At first the shells fall singly. Some shells fall close in front of the firing position of the 2d Battery; then the Polish fire is thickened in our battalion area, as the first volleys come howling.

A hit in the firing position of the 3d Battery! The battery reports: "No one wounded." Has the enemy found out the location of our battalion and its firing positions? For a moment the idea of changing position flashes through our heads, but then we decide to remain in the old position; past training asserts its influence.

Shells fall again, this time in the neighborhood of the battalion observation post. Everyone immediately takes actual cover against fire, and approaching messengers are

called upon from afar to conduct themselves as becomes a combat situation.

The observers are looking feverishly for muzzle flashes in enemy terrain. *If we only had with us now an observation battalion!* Now the 3d Battery reports locating a Polish firing position (see Map 2). At the same moment a salvo strikes the observation post of this battery. The powerful explosion is deafening. The telephone wire is broken. A foot messenger takes the fire commands to the battery. All batteries of the battalion are firing fast. The infantry in front is attacking. The forward observers are notified that the batteries are released to fire individually, and soon the black bursts of our ricochets show over the meadow in front of us. The heavy weapons of the infantry intervene in the fire-fight, and again the concentrated fire of our battalion strikes here and there.

In spite of this, the resistance of the Polish artillery and infantry does not cease. In the distance we see a retreating Polish march-column on horseback. Unfortunately the distance is too far for our artillery. All of us regret it. The fire-fight increases in intensity and our own attack stops. The radio of the forward observers reports that it is difficult to detect the well-entrenched enemy. Nightfall coming on slowly makes observation difficult. The horizon all about is lighted up by burning villages. In front rise the first flares of the infantry and light up the enemy positions which are to fall into our hands tomorrow. The first prisoners are brought in; they concur in the opinion that our ricochets produce a great moral effect. Then on the terrain before us the battle dies away; one battery is still employing harassing fire but the fight is over. As night comes on quickly, it stops.

II—A "HOT" DAY AT THE OBSERVATION POST OF THE 2D BATTERY, 28TH ARTILLERY REGIMENT

On September 15, the battery, covered with dust, had already traveled more than 40 km under a hot sun and over Polish country roads knee-deep in sand, when all of a sudden, at 2:00 PM, the battery, advancing in march column, received the following order: "Battery forward at a trot, great haste is imperative!" At the end of the village of Chmielek the battery commander, hastening forward in a gallop with the battery headquarters, meets an officer of the reconnaissance detachment, who reports briefly and with joy: "It is good that you come, because there is 'blue hell' forward!"

We quickly pick out a firing position to the side of the city and give the aiming-circle officers orders to take all necessary measures. We then go forward quickly to seek out a battery observation post, and easily find one in the elevated churchyard behind the village of Chmielek. In a few minutes we have established telephone connections with the firing position, so that within only 15 minutes after the arrival of the battalion it is possible to announce readiness for fire. In the meantime the commander's observation post has picked up an enemy battery firing in

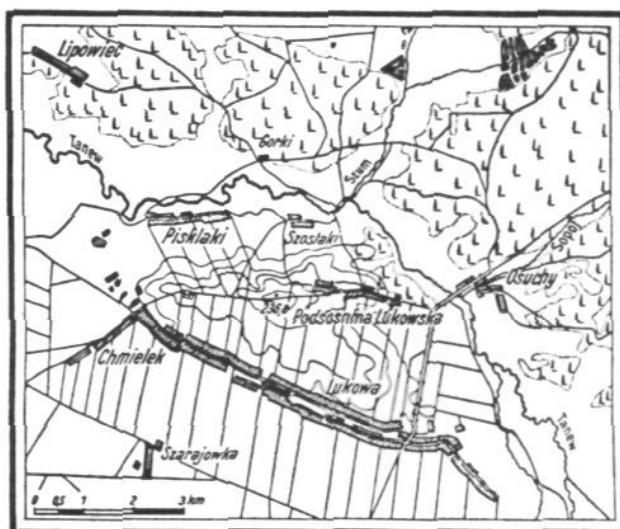


*German 105-mm. howitzer in action
Note base deflection chalked on shield*

the forest on the left flank. It is silenced by a few salvos. The telephone connection to the battery is broken, and then the forward observer is sent forward.

In the meantime reports from the west edge of the village of Podśosnina Lukowska become more and more urgent; at that place parts of the reconnaissance detachment are having a hard fight with superior Polish forces. The Poles attack our cavalry and motorcycle squadrons. In order to bring them under more effective fire, our battery observation post is quickly moved about 800 meters farther east toward the front. Through heavy machine-gun fire it goes up the country road to the two cavalry squadrons, which have already suffered considerable losses in fire combat. The Polish attacks are supported by artillery.

German heads are fired at from every house and fold in the terrain. It is not until our battery bombardment sets the foremost houses on fire and holds down the attacking



Poles for some time by means of a well-aimed ricochet fire, which in the form of rapid fire is laid in first one place and then the other, that the Polish attacks stop for some time; but they break out again in a new place. Since our own infantry is not yet in position, battery headquarters, together with the fire-control personnel, must defend itself with rifle in hand, especially as the closest Poles finally get to within 100 meters of our observation post.

At very close range one can observe here how well our light field howitzers can fire. Although our ricochets strike only 100 meters beyond our own cavalry position, no shot falls in our own ranks, which lie in a semicircle around the west exit of Podsosnina Lukowska. It is only now and then that a splinter greets us with its presence at our commander's observation post, whose men have entrenched themselves in a potato field, shoulder to shoulder with comrades of the cavalry squadron.

The stubbornness with which the Poles try to hold up our advance here is clear from the fact that in spite of extremely effective continuous fire from one heavy battery and three light ones, which direct all their fire against the front line, and in barely two hours fire approximately 2,000 shells into the ranks of the attacker, the Poles try time and again to overcome the weak chain of defenders (reconnaissance squadrons and artillery commander's observation post).

Toward evening, when the situation has become really critical owing to the fact that we have put the last shells in the batteries, we see on our flank our own infantry regiment advancing over a broad front from the long village of Lukowa. Immediately thereafter the Poles clear

out of the west part of Podsosnina Lukowska just at the moment our ammunition and that of the other weak parts of the defenders gives out.

The village of Podsosnina Lukowska, which, due to its elevated location and its very rugged terrain, has already been the focus point of a battle during the World War—the old trenches of 1915 are still clearly visible—offers after sundown a horrible spectacle in the light of the many wooden houses that are burning. Trucks and other vehicles, materiel, and horses that have been torn up by artillery fire, are lying about helter-skelter; cattle wander about, bellowing among the burning stalls; and pigeons, circling around the places where their lofts had been, fall with singed wings into the fire.

The combat itself has shown that well-directed artillery fire—along with the proper kind of observation such as this—is readily capable of driving off superior enemy attacks against weaker forces. On the other hand, the members of the battery headquarters found out that in war the artilleryman may also at times successfully defend his life without infantry assistance.

When twilight shadows spread over this hotly contested battlefield, the battery brings up new ammunition as quickly as possible and in the gray of evening, with well-placed fire, quickly smothers an enemy battery on the edge of the forest north of Podsosnina Lukowska and scatters a marching column east of Osuchy.

Prisoners, captured at night partly by the infantry and partly by our own flank security force, are unanimous in affirming that German tanks and German artillery are feared in the Polish ranks.

NATIONAL GUARD NOTES

On October 22, 1940, the Field Artillery Section of The National Guard Association met at a luncheon in Washington, D. C., Col. William A. March, 108th FA, presiding. Major General R. M. Danford, Chief of Field Artillery, delivered an informal and impromptu address, in which he described recent changes in materiel, organization, and methods which have been adopted for the Field Artillery, and discussed the immediate future of the Arm insofar as it can be visualized at present. The fact that many of the matters brought up were not of general knowledge (because their restricted nature has prevented publication in service magazines and in the press) greatly added to the interest of the talk. Other officers present at the meeting were:

Samuel T. Lawton, Major General, 33rd Division; Thomas H. Atherton, Colonel, 109th FA; Arthur P. Schock, Colonel, 176th FA; Thomas J. Shyrock, Jr., 54th F.A.B.; Henry C. Evans Lt. Col., 110th FA; W. S. Nye, Major, FA;

Norman E. Hart, Lt. Col., 139th FA; William H. Sands, Brig. Gen., 54th FA Brig.; Leo T. McMahon, Major, FA, Instr. Pa. N.G.; Sidney P. Godsmen, Captain, 168th FA; Ralph M. Bitler, Major, 168th FA; W. R. Dunlap, Brig. Gen., 53d FA Brig.; Sumter L. Lowry, Jr., Brig. Gen., 56th FA Brig.; Charles C. Haffner, Jr., Brig. Gen., 58th FA Brig.; Louis L. Roberts, Colonel, 139th FA; Samuel B. Wolfe, Colonel, 190th FA; E. L. Compere, Colonel, 142d FA; Ellerbe W. Carter, Brig. Gen., 63d FA Brig.; Elmer F. Straub, Colonel, 150th FA; Walter F. Wright, Lt. Col., 63d FA Brig.; B. L. Goulet, Captain, 172d FA; C. C. Seavey, Major, 172d FA; F. B. Skeates, Colonel, 124th FA; R. E. Myhrman, Colonel, 122d FA; D. B. Hardin, Colonel, 123d FA; Harry Ward, Colonel, 185th FA; Grover C. Wamsley, Colonel, 158th FA; Paul A. Cannedy, 127th FA; Philip L. Brown, Colonel, 180th FA; William F. Howe, Brig. Gen., 51st FA; Henry B. Curtis, Colonel, 141st FA; Brenton G. Wallace, Lt. Col., 166th FA; P. A. Dayries, Lt. Col., 141st FA.



MEN IN ARMOR

TANKS BEFORE WARSAW!

Many FIELD ARTILLERY JOURNAL readers have been asking that we print more combat experiences of small units in the European War. We are glad to comply, and hope we can make this a regular feature. The account below is from *Militarwissenschaftliche Rundschau* for March, 1940.—EDITOR.

Warsaw is a word which marks the termination of a fight without parallel. Warsaw means our victory, and all that goes with it: A glad and joyous ringing of bells, thankfulness, pride and feeling of happiness; but also anxious care, gritting of teeth, self-sacrificing attacks without which such a decisive victory could not have been possible. Do you still remember when troops of the German army penetrated the enemy capital for the first time after the outbreak of the war? Do you remember when the whole world listened breathlessly as the first news came over the ether of that first powerful knocking at the gates of that city which had been held up as a symbol of the hoped-for destruction of the Third Reich? But do you know who the German soldiers were who, on September 8, 1939, after a week of uninterrupted marching and fighting, raised for the first time the flag of the Reich in the heart of the enemy territory and by so doing laid the foundation for the decisive battle fought in the bend of the Vistula?

On that evening when the radio brought the news of the penetration of German troops into Warsaw, the German people looked with pride and astonishment upon its tank corps, which had lately been created by the Fuehrer, and which could have given no better proof of its worth than it did by its advance against Warsaw. The sharp point of this steel arrow was the 4th Tank Division. It had been in existence only a year, yet had already been welded together by its renowned winter march in March, 1939, when as a very young division it moved over 1000 kilometers through snow and ice in two and one-half days, passing over Alpine regions and the frontier mountains up to Iglau in Bohemia.

And this time? On the evening of September 6, the troops, out of breath, thirsty, and tired, fight their way to an open field opposite the enemy lines north of Petrikau. Here they

secretly hope to snatch a few hours of rest and sleep in some humble shelter or on a haystack. Here they view one of the most terrible pictures of the war, so full of rich contrast. Nightfall comes on, compassionately veiling the signs of battle, but here and there the sounds of fight still may be heard. Clothed in thick clouds of dust, the tanks, artillery, wagons, infantry troop carriers, radio trucks, and supply vehicles—everything pertaining to the motorized column—move forward to their night's destination. It is almost dark when all of a sudden, as if at a secret signal, every village, farm, and straw pile, as far away as the eye can see, bursts into flames. Hissing and crackling, the fires leap heavenward. Showers of sparks shoot upward when a roof or a wall caves in. There is an acrid smell of burning materials. Thick smoke rolls in giant fantastic shapes over the night sky, forming a gloomy cloud mass that chokes the air. The atrocious Polish firebrands light these fires again and again during the night. They hope to hold up our advance.

Early the next day our tank division rolls inexorably forward through this land of waste. Twice on the 7th and 8th we break through the lines of the enemy, who defends himself desperately. Finally we break through for a rush of 100 kilometers. Heedless of our right and left flanks, we roar northward, with only one thing in mind—*Warsaw*.

Late on the afternoon of September 8 the first German tanks and motorized riflemen penetrate the outer ring of the Polish capital. Through the deserted streets of the suburbs, past gloomy-looking houses, across railway lines torn up by German aerial bombs, and over torn down trolley wires, run the combat vehicles, most of them flying the swastika flag.

Fire from the first barricades show us what the Poles mean by an "open city." Under these circumstances the occupation of the city must be deferred for the time being. Nightfall is already approaching.

During the following night the division deploys on a wider front and makes ready for a coordinated attack. Early on September 9, after a brief artillery preparation, the attack on the city commences. Some parts of the division press forward as far as the railroad station. The fighting is stubborn and bitter, but the enemy defense is so strong and systematic that the attack cannot be carried



German Panzer troops attacking Warsaw

further by the tank division, which is not equipped for street and barricade fighting. From the roofs and cellars of the houses the Poles — soldiers and armed civilians, yes, even women and children—throw hand grenades and bombs upon the tanks standing before the barricades. In various stories of the houses certain windows are fitted up as combat positions. Everywhere behind gates and walls are machine guns, antitank guns, and field pieces, which meet the tanks and advancing German infantrymen with a rain of fire. Even from the east bank of the Vistula enemy batteries are firing and making considerable gaps in our troops advancing to attack from the southwest.

There is nothing to do but get out of the city. This one tank division alone is too weak to take possession of a strongly-fortified and well-defended city and hold it.

But, after all, was not our attack a great success? Eight days after the beginning of the war German tanks knock on the gates of the Polish capital with a powerful fist. They have surrounded the city from the south and west. In a great military success they have cut deep into the rear; and before the gates of the capital have severed the enemy communications leading to the west and southwest.

The division remains here for days, often fighting in several directions, and beats off sallies from the city as well as attacks from the west.

* * *

Staff Sergeant Ziegler, in *Die Panzertruppe* for November, 1939, discusses his experiences in the operations south of Warsaw:

On September 9 the division of which Ziegler was a member was southwest of Warsaw awaiting orders to attack the city. Reports from the air observers indicated that the entrances to the city were barricaded. The tanks had spent the preceding night in a *hedge-hog* formation; that is an pentagonal group facing out to give all-round protection. The men were nervous and full of fear from imagined dangers; as a result no one got much sleep.

Ziegler was in command of the headquarters tanks of his company, evidently a light tank with three men in the crew including himself. The other two men were the driver and

the radio operator. His three tanks were supposed to protect the company commander, perform reconnaissance, and maintain liaison with the combat sections.

At 6 AM the company formed for the attack. Nervousness still persisted, unallayed by the heavy hostile artillery fire passing overhead. The order to attack came by radio, and as they approached the city, small arms fire rattled on the outside of the tank. The leading section leader was held up by stoppages in his weapons, which he reported by radio. The company commander ordered the next section to pass through and take up the lead. This section was stopped by a minefield; the attack seemed stalled.

At this point Sergeant Ziegler lost his nervousness and felt a fighting spirit come over him. With the permission of the company commander he took charge of the remnants of the leading sections; ordering them to follow him, he moved forward under heavy rifle and machine gun fire, through hedges, fences, gardens, summer houses, and crossed the first streets. Here the Poles had been entrenched, but were fleeing in dismay when they saw that their minefields had not stopped the German tanks.

Other Poles in buildings were firing heavily on the tanks. Ziegler kept in touch with the C.O. by radio, and kept moving on from hedge to hedge. When he had time to look back he saw that no other tanks were following him except that of the C.O., about 30 yards to the rear. An antitank rifle shattered the prism in the driver's vision slit. They stopped to install a new prism, meanwhile Ziegler was revolving his turret and looking for targets. He saw that he was now alone, although three other tanks had stopped some 30 yards away. His machine gun jammed. With sweat pouring from his face he started to change barrels, when he saw a Polish civilian run forward and throw a grenade at his tank. As the Pole started to throw another, a round fired from the 37-mm. gun blew him to pieces. Then Ziegler got his machine gun going at fifty Poles who were jumping from a railroad embankment.

The radio operator switched to the battalion frequency and received an order for Ziegler to take command of

the company and lead it forward. Two light tanks and one medium tank came forward. They moved forward into the streets and rolled toward the center of Warsaw. A 75-mm. gun fired at them from a garden. Ziegler replied with his machine gun, used up a magazine full, but the Poles fled with their gun.

The tanks passed through a barrier one at a time, one tank giving covering fire. As soon as they were through the barrier the 75-mm. gun opened again. Ziegler replied with rapid fire. While changing magazines he looked out and saw that both his light tanks were in flames. He ordered the medium tank to turn and follow him back. At that moment the medium tank was hit by a 37-mm. shell. Fortunately for him one of the smoke candles which are fastened to the rear of the tanks broke away from one of the burning tanks and covered his retreat. One shell went under his tank, damaging the under carriage. As the last remaining other tank had disappeared, he turned and withdrew at full speed through the smoke of burning tanks. Although expecting his finish at any moment, he reached the gardens where there was only rifle and machine gun fire. He took into his tank three survivors from the burning tanks, who had hidden in the bushes. After breaking through a strong iron gate his tank managed to reach a main road, where he found more tanks of his battalion. By this time his turret was jammed from some injury.

He now saw his company commander fighting on foot with a pistol, being fired on from surrounding houses. He rescued him also. With these survivors he made his way back to safety. The fight had lasted five hours, and they had been driven out of the city.

ACCOUNT BY CAPT. P. R. C. HOBART OF PATROL ACTION,
JUNE, 1940

(From *The Tank*, October, 1940)

This is the story of a patrol action which took place between four light tanks and German AT guns and infantry when the Germans broke through south of the Seine during the closing phase of the campaign in France.

2d Lieut. Bell took his troop of light tanks out on patrol one sunny afternoon. He was accompanied by a captain, also in a light tank, who was to have a look around wherever the spirit moved him.

The patrol pursued its way along its appointed route without incident until a certain crossroads was reached. After passing this, machine gun fire and rifle fire was encountered from a spot straight ahead down the road, possibly five or six hundred yards from the crossroads. The tanks turned about and returned to the crossroads, and after a short discussion it was decided that the Troop should run down and finish off the machine gun post and a few of the infantry, and then return to the crossroads and continue the patrol; meanwhile the captain was to investigate movements reported down one of the other roads.

The subaltern then started off towards the machine gun post leading his Troop, and the captain departed on his lawful occasions. When the subaltern was about half-way to the machine gun post, antitank guns opened fire, and for some unknown reason he ordered his tank to halt. As the tank halted the first shot crashed through the front, wounding the driver in the legs. This was followed



Street fighting in Warsaw



German tanks in the streets of Warsaw

by another direct hit, which again hit the driver, and yet a third, which hit the mantlet of the guns and burst the water jacket of the Vickers.

The tank was now immobilized and under rifle and machine gun fire. The driver's body blocked the entrance to the driver's seat from the fighting chamber, as after the second shell had hit him he had tried to climb back out of his seat. The gunner was then ordered to get out and try to enter the driver's seat from the front. Finding the front visor locked from the inside he was unable to do this, and he was ordered by the tank commander to get back to the crossroads and bring help.

Meanwhile the captain, having heard that something was wrong, came back to the crossroads, where he found the other two tanks of the subaltern's troop. On finding out what had happened he signalled the Troop Sergeant to follow him and started off down the road towards the disabled tank. Immediately the two tanks showed themselves, heavy AT fire opened up from three or four AT guns, and the Troop Sergeant's tank was hit and immobilized. The captain, however, did not know this and, thinking he was still being followed, he continued down the road. After travelling a few hundred yards down the road he saw the gunner of the disabled tank behind a tree with his revolver drawn. He stopped, questioned the gunner and continued his advance, zig-zagging down the road and going at full speed. Then at last the antitank guns registered their first hit, which carried away the offside jockey roller and bracket complete, but mercifully did not break the track.

It was now possible to get off the road, which was getting a bit too hot to be pleasant, so he turned left over a

ditch and a bank and continued to run parallel to the road firing at the flashes of the AT guns between the poplars which lined the road. After travelling forward a few hundred yards in this way a wood barred further progress, so he turned right, crossed the road and the ditch and the bank on the far side to try and attack from that flank. AT fire was still heavy and it was extremely difficult to pick up the guns or to get any telling fire on them.

On this flank another wood barred the way round to the flank of the guns, so the tank went on as far as it could, turned about and returned to the road once more and back to the crossroads—zig-zagging and moving flat out with the guns still flashing behind it.

On reaching the crossroads the AT fire ceased and the captain found the Sergeant's tank, which had managed to crawl back under cover after being hit, and had been firing at one of the antitank guns from there. The Sergeant thinks that he managed to knock out this gun.

These two tanks then decided to try the right flank again and see if they could find a way through the wood. This was done, but no approach could be found, so after returning to the crossroads once more and firing off a belt in the direction of the guns, the two tanks retired to rejoin the squadron.

The fare of the subaltern and his driver remains unknown.

An unsuccessful and rather disappointing action, which does, however, serve to bring out two lessons:

Firstly, keep moving; go like a bat out of hell and change direction if you want to avoid being hit.

Secondly, AT guns can be expected with the very foremost German soldier.



ON ENLIVENING THE DEAD-SPACE CHART

By Major S. E. Vaughan, 144th FA

Those of us who have long white whiskers can remember when TR 430-85 was the Field Artilleryman's Bible, Hoyle and Emily Post all rolled into one. The newer texts have left out many complications of technique, but when the axe begins to fall, many an innocent head suffers with the guilty, and in my humble opinion the effort toward streamlining often leads to the elimination of very desirable features.

One of the paragraphs of 430-85 which failed to reappear in either the Red Books or the FM's dealt with the so-called range graph which looked somewhat like Fig. 1. The axis on the left read in feet and represented the difference in altitude between gun and target. The axis on the right read mils and the curved line was graduated in yards. By the simple process of laying a straight-edge across this graph one could read range in yards, angle of elevation in mils, and difference in altitude in feet. The simplest use was to find the angle of elevation, having been given the range and difference in altitude. It was suggested that this graph be used for determining dead space but the method indicated always reminded me of the story of the buffalo who wore his robe for thousands of years with the hair outside, never realizing that it would be so much warmer with the hair inside. The construction, too, was a bit cumbersome, the graph being something over two feet long and for ranges over 6500 yards, the angle at which the index cut the axes became so acute that accurate reading was difficult.

These two major faults can be cured by one operation, namely, by folding or overlapping the scales. This may be

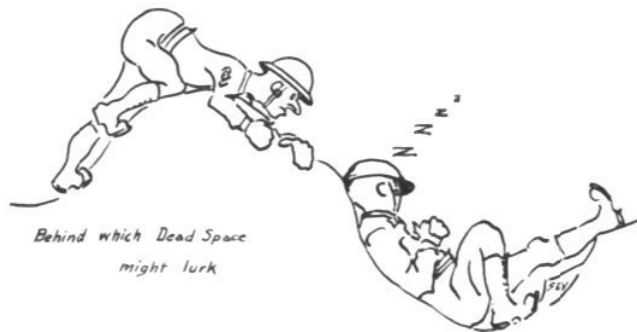
done in two ways. Fig. 2 shows the angle of elevation scale doubled on one axis. In Fig. 3 the elevation scale has been cut and placed on two axes. The first layout is the easier to construct, but the second is certainly easier to read in use and is conducive of fewer mistakes. The chart is now half the original size and the angle of intersection between index and axes favors easy and accurate reading.

The graph illustrated in Fig. 4 is what might be called the standard form. If one keeps on hand a few blank paper scales it is a great convenience to letter one to cover the range of altitudes in the zone of action and pin it to the graph over the altitude scale in such a way that the map altitude of the battery covers the zero graduation of the standard scale. This eliminates the necessity for figuring difference in altitude; and contour readings may be used directly on the graph.

To complete our equipment we shall procure a strip of celluloid about 12 inches long and one inch wide, scratch a straight line down the center and put a pin hole on this line near one end. We save the pin for use as a pivot for this index. Equipped now with graph, scale, index and pin, we get down to the work in hand.

A dead-space chart presupposes a more or less accurate contour map and it is assumed that we have one pinned to the board. Place over it a sheet of overlay paper large enough to cover the area to be charted and extending a few inches beyond the maximum range. Pin this down and draw radii from the gun position at intervals of a hundred mils or so to cover the desired area. We are going to tear off the main part of the chart so that

We laddies with the GPF's favor mechanical aids because our first thought has to be our final one. "Once we sets, we're sot."



we can see the contours, which is eye-killing enough without peering through tracing paper, leaving only a strip at the far end of the trajectory to indicate the direction of the radii. Therefore label each radius so that the mark will appear on both the main part of the chart and on the indicator strip. Now tear off the chart, leaving the indicator strip pinned to the map.

Place the graduated steel straightedge on the map along a radius as indicated on the indicator strip, with the zero at the gun position. Follow out along the ray until you arrive at a crest behind which it appears that dead space might lurk. Starting at this crest, test at intervals, using range and altitude taken from the map as values on the graph. If, as map range increases, angle of elevation as read on the graph also increases, there is no dead space. If, however, at any point an increase in map range results in no change in elevation or in a decrease, dead space is indicated and the point of change is the point of graze. The problem now is to find some point on the ground, as represented by the map, of such range and altitude that the angle of elevation is the same as for the point of graze. This of course will be the point of fall and if the point of graze is on the covering crest near the battery, the point of fall will be on the minimum range line of the position. To solve this problem with the graph, pivot the celluloid index about the elevation for the graze point by means of the aforementioned carefully saved pin. It is obvious that as you rotate the index across the other two scales, it will indicate every possible combination of range and altitude which will give as a result the angle of elevation used as a pivot. You have only to find somewhere along the radius being investigated, a point, whose range and altitude can be duplicated on the graph under the rotating index arm. That point is the point of fall sought.

Repeat this operation for each crest along the first ray, marking the results on the corresponding ray of the main chart. After each ray has been marked, a study of the map will indicate how to connect the marks so as to outline the dead areas. Shade in the areas and the chart is complete.

In place of the steel straightedge mentioned above, I use a celluloid arm which I can pin to the map at the gun position and which is graduated along the radial edge. This is a great aid and is easily constructed from sheet celluloid obtainable from any auto supply store.

For those who may be interested, I shall give detailed directions for constructing a range graph for 75-mm. HE shell. (Of course, a different graph must be constructed for each combination of projectile, fuze and charge.):

On a piece of tracing paper or tracing cloth about 11" by 15", lay out three parallel vertical axes, 30 mm. long and about four inches apart. Graduate these axes in millimeters. The left axis should be labeled "Difference in Altitude between Gun and Target, Feet"; the other two "Angle of Elevation, Mils." Since our own firing is done in a mountainous district, I have provided for altitudes from minus 1,000 feet to plus 2,000 feet. This places the zero mark at 10 cm. above the bottom of the left axis. Start numbering the other axes at the top, the middle one from zero to 300 and the right one from 300 to 600.

To construct the range curve, proceed as follows:

Find in the range tables the quadrant angle of elevation for range 1000 (17.4 mils). Draw a fine line from the zero on the Altitude scale to the proper point on the Elevation scale. Next make a definite change in elevation and attribute it to site. Thus a 200-mil increase in

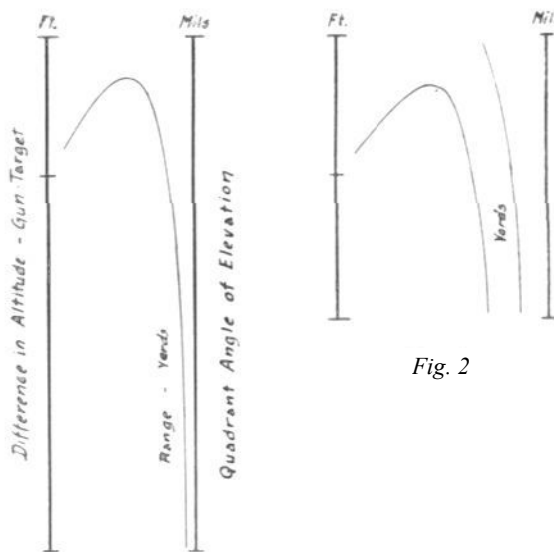


Fig. 1

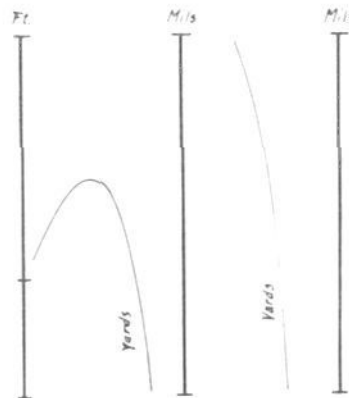


Fig. 2

Fig. 3

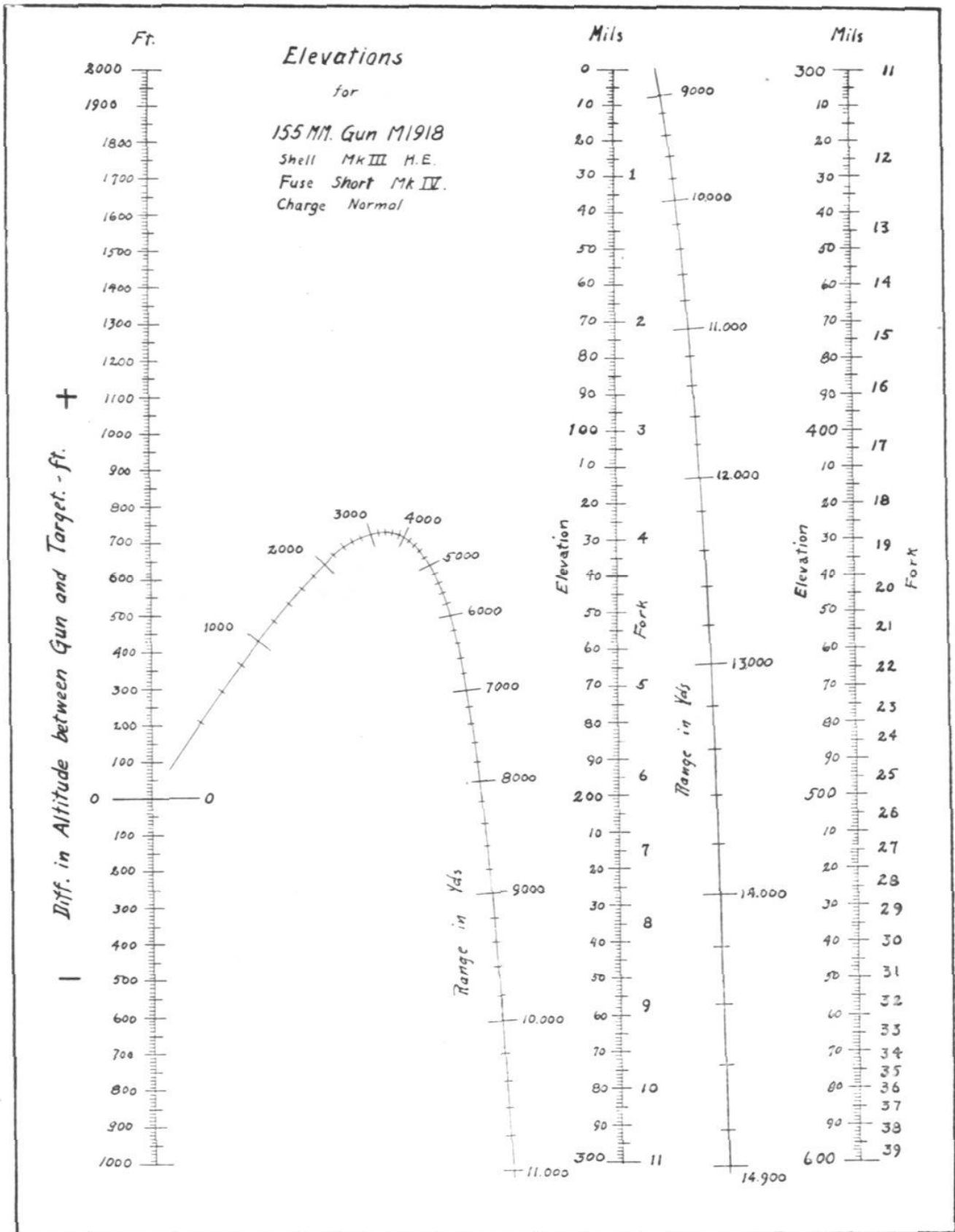


Fig. 4

site, at one thousand yards' range, would indicate a 600-foot difference in altitude between gun and target. Draw a fine line from plus 600 on the Altitude axis to the proper point on the Elevation axis (217.4 mils). The intersection of these two lines will be the 1000-yard point on the range scale. Repeat this procedure for each thousand yards, or better, for each 200 yards, connect with a smooth curve and the scale is complete. The smaller graduations may be put on with a single calculated line. In laying out the curve it is wise to select values of Altitude which will give an intersection as near 90° as possible.

If it is desired, the complementary angle of site may be included in the calculations for the range curve. A compromise value of the complementary angle must be used at the longer ranges, as it is different for plus and minus sites. The error introduced, however, is slight, being minimized by the fact that with increasing range, though the error in mils increases, the value of *yards per mil* decreases.

When the range graph has been constructed with the complementary angle of site included, several other problems of some interest, though perhaps of minor value in the field, may be solved on it. For instance, what is the maximum ordinate for a given range (the new tables do not give it) and what is the range to the maximum ordinate? Lay the index on the graph, cutting the elevation scale at

the elevation for the given range and tangent to the range curve. The reading on the Altitude scale is the maximum ordinate and the range at the point of tangency is the range to the maximum ordinate.

A fairly accurate diagram of the trajectory for any range can be drawn by means of ranges and ordinates taken from the graph. Pivot the index about the elevation corresponding to the given range and note the ranges at which the shell is 100, 200, 300, etc., feet above the ground as read off the Altitude scale. It will be noted that only the far end of the trajectory can thus be plotted when using the right hand axis.

C, of course, can be read easily and the angle of fall can be deduced roughly by noting the fall of the shell in feet for a range change of 100 yards. The angle of fall in mils equals 10/3 times the reading on the Altitude scale, and will be within 10 mils of table values.

This graph idea was resurrected and put to use in the Fourth Army maneuvers in 1937, when a preliminary study of the map showed that our flat trajectory weapons were going to have trouble placing the shells where we wanted them. While we didn't exactly win the war, at least our rapidly constructed dead-space charts prevented the umpires from accusing us of "firing" impossible problems. Since that "trial by fire" the range graph has been an integral part of our equipment.

Additional Medal Winners



1. Cadet Sergeant Marlin W. Camp, Vinemont, Ala., Alabama Polytechnic Institute; agriculture; Scabbard and Blade, Alpha Gamma Rho, Blue Key, Alpha Zeta, staff of "Alabama Farmer." 2. Cadet Lieutenant Joseph G. Kearfoot Miller, Kent, Ohio, Ohio State University; economics. 3. Cadet W. Bruce Pirnie, Concord, Mass., Harvard University; graduate CMTC, Fort Devens, 1937; Varsity Crew. (For the following medal winners we have no pictures.—Ed.) 4. Cadet Lieutenant Tracy A. Rasmussen, Neponset, Ill., University of Illinois; Pershing Rifles, Scabbard and Blade; served one enlistment in the 80th Field Artillery, Regular Army. 5. Cadet Master Sergeant Roy Milton Kottman, Manly, Iowa, Iowa State College; animal husbandry. 6. Cadet First Sergeant Charles F. Ostner, Jacksonville, Fla., University of Florida; Scabbard and Blade, Delta Tau Delta, staff of "Florida Review." 7. Cadet Captain William Meyer Milton, Clayton, Mo., Stanford University. (Winner for 1939).

**ALL ROTC CADETS ARE ELIGIBLE TO BECOME ASSOCIATE MEMBERS OF
THE FIELD ARTILLERY ASSOCIATION**



On maneuvers—the old and the new

BLACK and BLUE WAR

Descriptions of incidents seen, or heard described by reputable witnesses,—any similarity to persons or organizations, living, "dead," or "captured," are not entirely coincidental, but must not be taken too seriously, nor regarded as being motivated by malice or the spirit of destructive criticism.

Early in 1940 rumors began to trickle down through the Reserve Corps that there would be no CPX at Ft. Meade, as previously contemplated, but that warfare impended somewhere north of the Adirondack Mountains. Unpassed appropriation bills prevented official dope, but the rumors persisted. Twenty-one and/or twenty-eight days, instead of the usual fourteen, was to be the length of tour, and everybody was to go to the Thousand Islands—some as Corps staff officers and umpires, some with the Regular Army, and others with the National Guard.

The rumor stage persisted even longer than the usual annual guessing contest, but finally orders began to arrive. Field artillery battery officers were to be attached to the National Guard, and for fourteen days, the remaining seven days of the maneuver period to be spent by the Guard at service practice. Apparently only a very few Regular Army units were to participate—the rest were undergoing reorganization as parts of combat teams in new triangular divisions. Arrangements for taking extra time away from the civilian job were hastily called off.

By Capt. John W. Haines, FA-Res.

There was a new angle this year to the old contest—uniforms and equipment. Rumor said wool, with full field equipment, but other disquieting information mentioned cotton in some regiments, slacks and leggings, boots, web belts, leather belts and slides, etc., etc. Lucky individuals received definite dope from the regiments they were to join, and very fortunate ones even found out a few days in advance what their assignments would be, in time to take a look or two at the appropriate Red Book. Thanks are due to those considerate National Guard regimental commanders and adjutants who took time out from the pressing duties of their own preparations for camp to welcome the prospective attachees from the Reserve, by letter or phone. Equally apropos would be a slight verbal kick in the pants to those Reserve people who upset the assignments by failure to inform their organization commanders as early as possible of inability to get to camp. Even worse censure seems

merited by those who never let anybody in on the secret, but just failed to show up.

Eventually August arrived and the war started. The third component of Uncle Sam's Army scanned road maps, located Gouverneur and Heuvelton (New York), and advanced thereon, orders in hand. It proved a two-day drive for most of the Third Corps. The processing had familiar aspects, but there were variations. Pleasant innovations were the lack of physical examination in camp—that had been taken care of during the preceding month—and payment of travel allowance (both ways) upon arrival at the Reception Center. The field equipment resembled full pack for a truck; hardened by experience was the member who held up the line to count tent pins, etc.

Field education began at once. The organizations were completing long marches, establishing base camps (tents) and getting settled. They had many recruits and newly promoted officers, and far too many personal problems to worry much about attached Reserve personnel. After a period of initiation—spent in shifting from foot to foot, trying to keep out of the way, and/or attempting to be of some help — everyone was assigned sleeping and messing arrangements, and set about the usual tasks of becoming acquainted, finding out what he was supposed to do, and getting squared away for the field training.

During the first week minor "wars" took place, reenforced brigades and divisions opposing each other. It was a training exercise of our civilian army, Americans with the typically American discipline, or lack of it, and initiative. In great part they were spending their whole annual vacation period learning more about the business of war, insofar as weather, terrain, and disheartening lack of equipment allowed.

This vacation attitude was mainly responsible for the simulated war-time conditions being less war-like than they might have been. It may also have buttressed the desire to supervise training of subordinate units which caused B-Gs to dash into traps, and get themselves captured and "killed," in some cases two or more times, with utter sang-froid. Seriously, it did make for an attitude, particularly on the part of enlisted men, which might appear undisciplined to the military purist. Never once, however, did the writer encounter or hear of a case of insubordination, or lack of "war-time discipline" during an actual "battle"; although numerous cases of laxness and inattention to orders appeared when it was a question of some matter such as returning to base camp at a given hour on temporary pass between "wars." A typical case in point occurred on Sunday, the day preceding the big final war. A regiment granted leaves until 6 PM for regimental and battalion staffs, and taps (10:30) for everyone else. A warning order came down to be ready to move out to "the front" at midnight. At 11:40 one battery's highest ranking NCO present was a corporal, who proceeded ably to form the battery, march it to the gun park, and make all arrangements to move out. To complete the illustration, ten

minutes later all sergeants had reported; the battery marched in excellent order at the appointed time, and did its full share in the campaign which followed.

More or less amusing incidents were numerous throughout the maneuver, more of them due to failure to recognize the enemy than to any other cause. The Blue troops were in regulation OD uniform, the Blacks wore denims, with their officers wearing red hat bands. It rained practically all of the first day of the final exercise, and the resultant raincoats served further to confuse the identification. No such excuse could be offered, however, for the Black cavalry brigade in rendezvous in and beside the road in a grove of trees, where they allowed a Blue truck convoy to thread its laborious way through horses and men, and after some minutes resume its march up the road unchallenged and uncaptured.

On the same day a Black column, including, according to reports, a Major General, was held up by artillery fire at a bridge, while umpires prepared weighty conclusions as to casualties and lost materiel. Through the conclave a Blue motorcycle company advanced, and gaily went on its way without recognition or hesitation.

During the 28th (Pennsylvania) vs. 29th (Md.-Va.-D. C.) Division war, one of the best laid plans of men almost "ganged agley" when the third assistant G-3 of the 29th designated for capture with full plans and maps for the next morning's attack (allegedly on his way to the infantry brigades) was forced to ask directions three times before recognition and capture. The stratagem succeeded beyond most optimistic expectations, however,



Third assistant G-3 designated for capture was forced to ask directions

and the resultant changes in dispositions were of great benefit to the 29th.

During this same battle, two young artillery officers increased their knowledge, as well as reputations, to a considerable extent. One of these, a regimental staff officer, during the night transported a regiment of infantry from one side of the division front to the other to be ready for the dawn attack, and arrived at the proper place at the proper time, displaying a commendable knowledge of the details of logistics. At the same time he favorably impressed the infantrymen, who subsequently lost the same regiment twice trying to get them into position. The second, a liaison officer, forded streams on foot, relayed messages by runner, radio, and wire, using all three at one point in the problem, and spent considerable time keeping the doughboy battalion commander informed as to the whereabouts of the doughboy's own CP. He justly deserved the subsequent characterization, by one who knew: "That bird would get a message through if he had to run a wire around the General's neck."

A pleasing impartiality was displayed in antiaircraft fire by machine guns and automatic rifles. This was probably due to ground and air troops getting their signals crossed. The rule book stated: "Black planes will carry black streamers on the wings, all others will belong to the Blue forces." The black streamers never appeared, although many of red, and other colors, were seen. The umpires' planes—no one ever knew what they were—were taken under fire by both sides. Since most of the shooting was done at planes well beyond range of 3-inch guns, the simulated bullet holes they received probably caused no damage.

Some slight error in troop disposition may have been a more important cause than was faulty identification, however, when the Black infantry battalion commander defending the river line got one of the record red faces of all time. An umpire reconnoitering the situation engaged the officer in conversation.

"Your mission is defending this segment of the river line?"

"Yes, sir, and I think we have the situation well in hand."

"What dispositions have you made?"

"I have patrols out all along my shore, and they are extremely alert. See, here comes one of them now. . . . My G , that's a big patrol!"

The "patrol" drew near and shortly was identified as a regiment of enemy infantry advancing without molestation, having completed their crossing some minutes before.

Reports of the famous crossing vary, but apparently one Blue infantry battalion commander had at least a pink shade of complexion about that time. A Division—some say only a Brigade—commendation arrived, and was duly presented to the KO in bivouac, anent his fine "demonstration" against one point along the river, thereby enabling the crossing force to gain its objective without

undue opposition. The commander was somewhat astounded — his outfit was, and had been, in bivouac, and he had seen or heard of no demonstration. The commendation stuck, but the investigation by the battalion commander got under way forthwith. The fact that a sleepy staff officer had written down, receipted for, and pocketed the message, immediately thereafter falling into deep and undisturbed slumber, without thought of alarms and excursions, has nothing to do with our narrative—though something might be learned therefrom, as doubtless did the gentleman in question.

A rumor of the lower part of camp current about the same time concerned another staff officer who was also overly fond of bunk fatigue at the wrong time. It was said that one division had in its grasp the opportunity to end the big war within an hour of its start. So rumor had it, the enemy staff officer responsible for getting his division under way slept; while the enemy would have crossed the stream and slain all in their beds, as well as ending the exercise three days ahead of schedule, had it not been for the ubiquitous, sometime umpires.

Those latter gentlemen had their moments, also. A column of artillery on the road came finally to discover that they had been viciously shelled for two hours, without the knowledge of anyone in the column, or any delay to its march or final installations. After questioning, it was learned that a busy umpire cruising rapidly down the road had halted momentarily, hopped out of his car, waved one of those inexplicable flags (the rule book said white on red, or red on white, no one ever knew which, meant "Artillery fire"), mounted up, and proceeded at speed.

Even during the final exercise, the uncontradictable umpire had his times of trial (and possibly error). The gentlemanly Coast Artilleryman who allowed the 75-mm. battalion staff to talk him into ruling out a battalion each of artillery and infantry at a certain cross roads for a matter of thirty minutes or so was told gently by a fellow umpire (F.A.) that ranges of 12,500 yards were not so effective for the lights. It seemed reasonable to him; they were persuasive; they showed him the new Mk. IV ammunition in the book and expounded its virtues; and, besides, such ranges were child's play in his league. By that time, the ruling-out was virtually over, and the CR was quite a distance away, and Brigade and the doughboys had taken over much-needed transportation, so there seemed to be no practicable way to remedy the injustice, if any. In any case, the trails were being dug in when the practical man investigated. (What would you, as a battalion commander, have done? The 75s were out of range practically all day, had had no missions assigned, and had been refused permission to displace forward into reconnoitered positions. "One regiment of 75s is enough to cover the crossing," said the CG. To add injury, one battery had just been ranked out of an excellent gun position by Division Headquarters!)

The same cooperative member of the CAC had previously

been impressed with the logic of registering on a simulated base point, with imaginary ammunition, by high-burst adjustment at night, by means of an orienting line. The "firing chart" was a 62,500 map, and the orienting line measured approximately 70 by 950 yards, but, after all, it was an imaginary war and firing was required at dawn.

Less than sacrosanct appeared the umpire (a Major in the Regular Army) who argued with the youthful chief of section for fifteen minutes before the latter was finally subdued and "captured," with his command. His was the fourth section of a battery marching with intervals of 100 or more yards. The third missed a turn and ran head on into a battalion of enemy infantry, being captured without loss of time. The section chief in question halted his truck fifty yards or so from the enemy, dropped his trail and proceeded forthwith to scare the tar out of, as well as disperse, the enemy, by means of several rounds of "shrapnel" fired at point-blank range with zero corrector. Fortunately, there were no actual casualties, though no one could quite figure out why not, and after a time both sections were duly immobilized for the proper period. Considerable time and logic were required to convince the gunner that a couple of hundred rifle men would probably have annihilated his gun crew in an actual engagement. ("But, Major, we licked them; you can see for yourself they're on the run.")

Another case proving the superiority of the Field Artillery in a hand-to-hand fight, as well as the danger thereof even with blank ammunition, resulted again in great fright to those at the wrong end of the guns, but nothing worse. This battery had taken position without registration, intending to fire a preparation about dawn, laying the guns by some more of those strange methods. A road passed across the front at a distance of about 100 yards. Two friendly tanks pulled off the road into rendezvous, or wherever tanks go, almost directly in front of the 75s. Promptly at 4:30 everything cut loose, to the dismay of the tank personnel, whose commander threatened a blitzkrieg right through the position of the next guns who should crack down on him at any such range. He cavalierly disregarded the BC's explanation that



"Fortunately, there were no actual casualties. . . ."

he thought the noise of the tanks was caused by vehicles passing on the road. Anyway, why shouldn't tanks look around a little, to see if anything dangerous is near them?

Despite the errors of commission and omission, in this writer's humble opinion the National Guard Field Artillery, and, to a lesser degree, the Infantry, at least the outfits he saw personally, did a fine job throughout, and deserve praise for their individual training and initiative, their interest in their assignments, and their

high morale. Regardless of the many recruits, the outfits did everything they were asked to do, and did it well. The individual officers and men knew their jobs, and displayed the results of many hours of toil and painstaking effort in the armory. Their ingenuity was amazing to an observer without previous maneuver experience. It was stated that the Damage Officer of one battalion, a First Lieutenant, could "build fences out of imagination and toothpicks," and on several occasions that seemed no exaggeration. The farmers with property used by that outfit were lucky; they had better fences after cutting and repair than they had before, and the sites of the various installations were policed, too. It was in jobs of that sort, as well as in extricating ditched and mired trucks, that the officers commissioned from the ranks showed their superiority over the ROTC graduates. The enlisted men (mostly graduates of high school or more advanced institutions) were highly intelligent and better educated, on the average, than is the case with many units of the regular service.

The advantages and shortcomings of the American army in any war were plainly visible—the job was done well, often in spite of poor staff work or faulty plan. Initiative there was in plenty, as well as energy, imagination, and ability, and the familiar disregard of, or mental reservations toward, red tape and the strict word of the regulations. The team work—particularly on the part of the staffs—was poor at times, and undoubtedly training, and reassignment in some cases, were needed. There seemed to be no faults that a period of extended training should not rectify, after comparatively minor adjustments. The sight of Maryland and Virginia infantry regiments marching upwards of 25 miles in a day

in the rain (after two weeks in camp) with packs literally growing heavier every hour, was reassuring to anyone interested in the safety of these United States. True, the typical "grousing" was in evidence, but they functioned so well that they were always a day ahead of the problem as set up. (A particularly sore point was the sight of those artillerymen in trucks. "Where are the 'brush-jumpers'?" "Down in the woods!")

A word might well be added here in regard to the property owners encountered during the "campaign." Only on one occasion did the writer hear of an unpleasant word offered by an irritated citizen. He was perfectly right, but was finally pacified by the diplomat assigned to the task,

and went away happy. Aside from that incident, the people of New York State were uniformly hospitable, courteous, and interested in the wars going on around them. One old farmer was deterred from insisting that a whole battalion of 75s, with kitchens attached, park on his front lawn, only after a lengthy dissertation in re concealment from air observation.

To conclude, the war was a success, and much was learned therefrom. The writer came away full of admiration for the spirit, training, and ability of the regiment of the National Guard to which he was attached. Their ungrudging and hospitable cooperation made the tour a valuable and pleasant one.

ARTILLERY WITH CAVALRY

Brief Lessons from the British Campaign in Palestine

(a) Artillery serving with cavalry is very vulnerable to hostile fire and attacks by raiding forces. A cavalry escort should be provided, and not leave the batteries exposed to attack. Artillery should seek some cover; machine guns should be sited for defense of the flanks.

Incident: Near Huj, during the Battle of Beersheba in the fall of 1917, Turkish batteries were holding up the advance of the British Yeomanry. Colonel Gray-Cheape managed to lead ten troops under cover to within 800 yards of these batteries, then charged. The Turks tried, too late, to limber up and escape. Although they continued to serve their guns until most of the crews were killed or captured, three batteries were lost. The Turks had failed to use their escort properly, keeping the front of the artillery safe from raiders until the cannon and machine guns could be put in action.

Incident: Three batteries of Royal Horse Artillery with the 4th Light Horse Brigade in one morning fired 200 rounds per gun. For five hours they participated in a running fight in full view of the enemy, always under artillery fire and often under small-arms fire. Finally so many horses were killed by machine-gun fire that nine guns were lost.

Incident: During an action near the Jordan in September, 1918, Hant's Battery galloped up and took position in the open. Two Turk batteries fired on it and every gun was hit within a few minutes, yet all continued to fire. The situation was saved by a squadron of Yeomanry working around through an arroyo, and from concealment charging and capturing the two Turk batteries.

Incident: On Mount Carmel one squadron of Mysore Lancers and two machine guns were sent to the flank to capture a Turkish battery. After putting the machine guns and Hotchkiss rifles into action the commander only had fifteen men left—the rest were casualties. Nevertheless with these men he charged and captured two guns. Just then the Turk escort came up, but he was saved by the timely arrival of a squadron of Sherwood Rangers. The Turks had failed to site their machine guns for flank protection.

(b) As in support of infantry, it is generally best to keep the artillery under divisional control, and not disperse it.

Incident: At the Jordan crossing at the Bridge of Jacob's Daughters, the two batteries of the Australian Mounted Division, while in action against machine guns on the east bank, were each ordered to report to a brigade. The brigade commanders ordered them to displace forward and to the flank. As a result both batteries were out of action for about two hours during a critical stage of the crossing.

(c) The British artillery commander stated that he thought that one battery of each battalion should be composed of 105-mm. howitzers.

(d) High explosive was used almost exclusively in rough country; considerable shrapnel was employed in open country.

(e) If the guns are to be available after a long march they should have been put near the head of the column and given good roads.

(f) Water shortage will be a major problem in campaigning in an arid country. The British carried gasoline-cans full of water on the foot-boards of all vehicles; they also trained their animals to become accustomed to but one watering per day.

(g) All horses in the battery should be of a type suitable for draft. Small, compact halfbreed horses proved superior to the big hunter type.

—From a Study of the Palestine Campaign, by LIEUT. COL. J. E. LEWIS, FA.

GUNNER IN LUZON

FOREWORD

The 37th Infantry, USV, was organized at Manila as of August 2, 1899, of discharged regular and volunteer soldiers, and except for a few second lieutenants its officers were also veterans of the spring campaign. Some was nicknamed the regiment "Otis's Own" because Major General Elwell S. Otis, the Commander in Chief, had intended it for some special service and had given it a special organization. Company G was a mountain battery and Company H a cavalry troop. Lieutenants B. M. Koehler and Ernest D. Scott were promoted to Captains, USV, and assigned to the battery and troop respectively. Lieutenant Charles Boyd, 4th Cav., was promoted to Major USV, and assigned to the battalion in which these units were. General Otis's selection for Colonel was Lt. Col. William Wallace, 1st Montana Inf. (1st Lt. US Cav.), who had just returned from the States, where he had been sent to recover from a bullet wound in the lung. The Majors were, in order of rank, Boyd, Orwig, Cheatham (Major General, Ret.). The latter had brought a battalion from the Tennessee regiment—the only one ever at full strength. In April, 1900, he was promoted to Colonel, on the death of Wallace. The original idea for the regiment was never carried out; its infantry units initially were scattered on garrison duty from Manila to Pasig, the troop and battery sent to San Fernando de Pampanga. Later all units saw extensive service and piled up an imposing record, but the regiment was never fully assembled until the first week of January, 1901, in camp on the Luneta, en route for the States.

THE POSITION NEAR SAN FERNANDO

Koehler and I were still hospital patients or on a sick-in-quarters status. We each secured the appointment of a First Lieutenant for his unit — Koehler a Corporal Jesse G. Lowenburg of the old battery, I a First Sergeant of the 4th Cavalry named Balch. We attended the first—and I

believe the only—regimental dinner, and departed on sick leave for Japan. I returned early in October, Koehler a month later.

Ashore at Manila I went directly to Headquarters and there learned that "Otis's Own" would probably never function as its creator intended—a sort of expeditionary force, "shock troops" in modern parlance. Reasons were several; the old wound in Colonel Wallace's lung had given trouble and he had been sent home, the Lieutenant Colonel was a non-military man holding a judgeship in one of the southern islands, regiments of Regulars and Volunteers were pouring in from the States in numbers to meet all needs, higher-up interest in the 37th seemed at an end.

The headquarters of the 37th, Major Boyd commanding, was in the old Exposition Buildings in Ermita—just south of the Walled City—as were the two infantry companies of his battalion, while the troop and the battery were at San Fernando de Pampanga, 40 miles north of Manila, on the railroad. The other battalions were on garrison duty in the Pasig-San Pedro Macati district. Cheatham's battalion had just returned to San Pedro Macati from a reconnaissance toward Muntinlupa through El Desierto in which initial successes led them on until they found themselves hemmed in by superior forces on the lake shore. Relief forces and ammunition had to be sent to enable them to fight their way home again. They had the

distinction of being the first of the new volunteer forces to get into action, and established the fact that our old friends of the South Line were still quite willing to meet us.

Next day I took the train for San Fernando de Pampanga and was met there by Lt. Lowenburg, who took me out to my command. Its condition was deplorable — alarming, in fact. The Infantry commander at San Fernando had assigned it to a small village outside the outpost line, and there it had been for some weeks. The armament consisted of the six 3-inch mountain guns of the former Hawthorne's Battery, one service pistol in possession of the lieutenant, and one pocket pistol in

CONCLUSION

YOUNG'S EXPEDITION



By Brigadier General Ernest D. Scott, USA-Ret.

possession of a soldier. Each soldier had provided himself with a stout club for use in the event of an attack by insurgents. It was hardly likely that the latter had not learned of the almost defenseless condition. A night raid (that would probably mean a massacre) might occur at any time, and the nerves of the men were wearing pretty thin. I learned now that the soldier I had secured as my First Lieutenant had brought about forty men from the 4th Cavalry and other sources, then had been detailed to the Macabeebee Scouts, the first battalion of which was being organized under Major Batson. So the two companies were commanded by Lowenburg. They totaled 78 men. He had tried to get proper arms and equipment, but without success. I went in to see the commanding officer at San Fernando, hoping to get the command brought within the outpost line at least, or failing that, borrow some rifles until I could make other arrangements. I got exactly nothing.

Next morning I took the down train to Manila and went straight to Colonel Tom Barry, the Chief of Staff. To him I stated the whole case, taking care to emphasize the conduct of the commanding officer of San Fernando. Barry listened to the tale with mounting anger, pronounced an explosive and very profane opinion, then called in an officer and directed him to see that I got everything I wanted in arms and equipment, etc. Things moved fast! Next day I returned to San Fernando with a carbine and pistol for every man in both companies, ammunition, belts, etc. And what a gay scene the village presented as the men broke

out the weapons, cleaned them up, tried aiming and trigger pull, practiced loading and unloading, loosened up the stiff loops on the belts—they were like a lot of boys, laughing, cracking jokes, calling to each other, singing—reaction after weeks of uneasiness and dread. No need for any formal instruction; by dark even the gunners were handling weapon and cartridge quite expertly. There was no opportunity to fire until next day.

Company H was almost entirely made up of cavalrymen, thoroughly trained in the use of the carbine and revolver. The latter were 45's, sufficient 38's not being available for issue. The 45's were of the single action variety, had a tremendous kick, and were not accurate. The six sergeants had had from eight to seventeen years' service in the cavalry—a great help. I only had to be "The Captain"! Many of the other men had long service. One named Tinker I took as my orderly; he had nineteen years to his credit. We had no mounts and no prospect of getting any soon, a keen disappointment.

Company G was almost entirely made up of artillerymen with the old prejudice against handarms so prevalent then. They were delighted to get them now but a few weeks later were agitating against the carbines, and were finally relieved of them.

ITCHING TO GO

On October 10, a small force assembled at Mexico—one battalion of the 24th Infantry, three dismounted



American light battery in action in Philippines, 1899



Ferry at Arayat

troops of the 4th Cavalry, a detachment of Engineers, and our two companies of the 37th Volunteer Infantry, the whole under the command of Brig. Gen. S. B. M. Young, U. S. A.

On October 11, the command marched to Santa Ana, where there was a slight skirmish. And again I must digress to relate one of those things so important to us as men. "Dobie itch" was one of the curses of the country that few who served in the field escaped. It usually appeared on the feet and the crotch of the legs, seemed resistant to treatment, and caused real suffering. An inflamed area, slowly spreading, and with small pimples scattered over it, was the general appearance. Few persons could resist scratching, which only accelerated its spread. Most of the men and my one lieutenant had it, as did I a day or two after joining. A native passing through the barrio had seen men applying an alleged remedy and stopped to tell them he could cure the condition. In the yard of the house where they were he collected some leaves and told them to rub the affected areas well with them. They did so and in two days a cure was well advanced. Another day or two elapsed before I heard of it, but I jumped at the chance to get this remedy for the pest. The old native could not be found, the vegetation in the yard was quite varied and much broken, the men could not identify the leaves—our hopes faded and then we marched off anyway.

At Santa Ana I went to the medical unit and asked that something be done—the smarting and itching were aggravated by sweat and particularly by riding my pony. I was told that an orderly would be at my shack at a certain time that afternoon to administer local treatment. He arrived with a small bottle containing water and crude carbolic acid, a bundle of small bamboo splinters, and a

roll of cotton. The treatment was to twist some cotton around a splinter, lower the latter into the bottle through the water and to a certain depth in the acid, withdraw and apply to the inflamed area. It burnt like fire! There was little sleep that night and the saddle next day made my crotch as raw as a beefsteak. My breeches were a bloody mess. And before the skin had healed the pimples of the dobie itch were breaking out through it. What an example of medical efficiency that was!

About a month later my friend Koehler, whom I had left in Japan, joined us. He had carried to Japan a slight case of dobie and had been cured there by an ointment described as "Chryso-robin 10 per cent." He had a little box of it the size of a dollar. He gave me a small amount, about the size of a large pea. In two days the pimples were pretty well dried up and the inflammation mostly gone. A slight additional touching up gave me a clean skin in a week. The little box was a life saver to a number and we were able to get a fresh supply from Manila and cleaned up the whole command. Of course, I spread the good news and tried personally to get different ones of the American medical personnel interested in the ointment and in trying to learn from natives the identity of the herb—with no success whatever.

On October 12, we marched to Arayat. The advance was held up about a mile short of that town by quite stiff enemy resistance. The colored troops did most of the fighting, supported by two of our guns that kept up on their skirmish line. Captain George McMaster with his company displayed remarkable coolness and bravery and did more than all the rest of the command to drive the enemy from his position. The Lieutenant Colonel commanding the advance was a fat person, his belly actually



Maccabeebe Scouts

bulging over the pommel of his saddle. He seemed fearless, at least, keeping on his pony in the middle of the road close up to the skirmish line. In his right hand he grasped a quart bottle of whiskey, its butt resting on his thigh like a trumpet. From time to time he raised it to his lips. I last saw him at noon as we were entering Arayat, still seated on his pony, sweating, bleary eyed, about two inches of whiskey still in the bottle. He was the same officer whom I had seen presiding over a poker table where youngsters were being fleeced and ruined, as related elsewhere in my memoirs.

A SKIRMISH WITH THE MACCABEEBEES

We remained some days at Arayat and were joined there by mounted troops of the 4th Cavalry and some other units. On the 18th we crossed the Rio Grande de Pampanga and marched for Cabiao. Enemy action delayed the advance quite a bit and it was late in the afternoon when we finally stretched out on the road. It had been a tiresome day after crossing the river—"wait here for orders" seemed the rule for us, and then be forgotten. The high command was over-cautious, communications were poor, enemy rifle fire caused interminable delays, finally the infantry and cavalry took to the one road and pushed on during one of our "Wait here for orders" periods, without our knowledge. We at last went on without orders.

I had a map and had been over this road—in the opposite direction, returning from Lawton's first expedition to San Isidro in May. I felt confident the silence to the east meant that the enemy resistance had ended and that our troops were in Cabiao, which was correct. But I had no idea how far we had come and could not locate our position on the map, but thought an hour or so would see us at our destination. But darkness came and still no sign of a town. We plodded on and on, and misgiving grew—perhaps there was another road and we were wandering into enemy territory, who could tell? After a couple of hours, at a turn in the road, began a little drama. Lieutenant

Lowenburg was with the "point," two or three men, armed like them with a carbine. I was at the head of the column about three hundred yards back. The road turned left at right angles and just as I reached the corner, a fusillade rang out beyond where the point should be and then came the cracking of their carbines. I halted the column and galloped to the point. The men were in the ditch on either side of the road, firing at flashes further on. My bugler, Bagan, an ex-Marine, had wandered up to the point and now rose from the ditch—"Come down of that horse, Captain," seized my arm and practically pulled me out of the saddle. The pony ran back along the road, I joined the Lieutenant in the ditch, and ordered our fire to cease. It was explained that the point was trudging along and was suddenly startled by a challenge in Spanish. It was answered in English and repeated in Spanish, followed by a shower of bullets. The men dropped into the ditches and returned the fire. I had a powerful voice and, firing having ceased, I stood up in the roadway and called out to know who our opponents were, only to be answered by more bullets. When it stopped I tried again with the same result. And a third time, and such words as were called out were unmistakably Spanish. Small wonder that by this time I had become convinced that an enemy force was confronting us. Some ten or fifteen minutes had elapsed since the first firing. I told the Lieutenant to remain with the point while I made preparations to attack and to stay on the road with the men until I let him know the guns were ready to fire down it, then take to the field on the right. I walked back to the corner, explained the situation to the men, put two guns in the road ready to fire, deployed Company H to advance through the field on the left of the road, and called to Lowenburg to clear out. Came the response that someone was calling to them in English. I mounted my pony and galloped up. This time my query was answered in good English—"I am General Young's interpreter, sent down from Cabiao to learn what the firing is about; who are you?" What a relief that was! I sent Lowenburg back to bring up the command and rode forward with the point. Within two hundred yards we came to a bridge—an outpost of Maccabeebe Scouts, about twenty of them. One had a bullet through his hand, the only casualty in what might have been a very serious affray.* At headquarters General Young came at me like a cyclone, demanding to know what I meant by firing on one of our own outposts. But I was equally angry, besides being tired and hungry, and I wanted to know who had been so stupid as to place an outpost of natives on a road over which our troops were known to be approaching—in the darkness and with no knowledge that any American Filipinos were in the command at all? That appealed to him as exactly right

*In 1934 Colonel Dennis Quinlan, Judge Advocate, 3rd Corps Area, had the officers of Edgewood Arsenal and Fort Hoyle assembled for a conference. At its conclusion he told the story of this incident from the other side. It seems he was a sergeant on duty with the Maccabeebees and in command of the outpost.

and he shouted for the Field Officer of the Day to be sent to him.

A TRAGIC INCIDENT

Next day, October 19, we marched east in fog and rain which with occasional sniping, slowed down the advance very much. At last came a definite halt at Calaba, a little barrio on the San Fernando River, a small branch of the Rio Grande. Our road had run nearly due east for a mile or so, then due north for about 300 yards, then east again. The barrio was at this point, the enemy entrenched under its huts. Their only good view in our direction was down the road to the first corner mentioned. Major John Green Ballance commanded our advance, consisting of his own battalion of the 22nd Infantry and my command; the cavalry were following well back and the Macabeebes had been sent north of the Rio Grande. I reconnoitered on both sides of the road but the only position I could find where the guns might be used was the road corner—and enemy fire swept it every time anyone showed himself there. General Young, Major Ballance and I talked it over. I wanted to run two loaded guns by hand out in the road, fire and repeat as fast as possible, not only firing at the huts visible at the end of the road but right and left thereof. The General feared the fire might catch some of our infantry; Major Ballance assured him that none of his infantry was to the left of the road so that I could fire there and at the end of the road with safety. But the General still demurred, the fog and rain made the visibility poor, the fields were full of shrubbery—some of the infantry *might* have got to the left of the road without the Major's knowledge, etc. The Major sent for Lieutenant Bob Hannay, who commanded his left company and received assurance that no men were on the left of the road. My plan was approved and carried out. The appearance of the guns was the signal for a storm of bullets that ceased when the first two shells went screaming down the road. Quickly the next were sent on their way and then to our astonishment a lot of figures appeared at the huts—even in that wretched light they appeared to be Americans, and one or two were waving their hats towards us. I jumped on my pony and raced down there. It was a group of our doughboys all right, about twenty of them. They had gotten on the left of the road probably before the enemy position was uncovered, had approached its right unseen, and rushed it with the bayonet just as my shells arrived, which accounted as much as them for the sudden cessation of enemy fire. But one of the doughboys was on the ground with part of his hip torn away, dying. Fortunately the shell had failed to explode; had it done so the whole party might have been wiped out. That was one of the worst moments of my life, and I was heartsick for many days. So strongly did I feel that had there been any honorable way out, I would have dropped my military career then and there. The boy did not suffer at all, the shock not wearing off during the short time he lived.

ADVANCE TO SAN ISIDRO

The following day the march was continued in the same order as before but at a roadfork halfway to San Isidro enemy action led the advance to follow the right-hand road and we had quite a lively skirmish about two miles to the south of that town, while the cavalry continued on the main road and peacefully occupied it.

The conduct of the advance to here and for some time after was quite in reversal of accepted form. But there was good reason for this. It was just the close of the rainy season and every cultivated field was a quagmire where the heavy American horses would bog down, or at least wear out in an hour or two and be useless for the day. Ditches, even small ones, were impassable obstacles—soft bottoms and no footing from which to jump them. The cavalry were largely recruits, and mounted recruits are vastly less efficient in all respects than dismounted ones. So far as enemy action was concerned, every road corner had its little covering detachment ready to sweep the road with fire to the range of its rifles, and there were plenty of other unexpected places. Cavalry might very easily be caught on road stretches where they could not get off into the fields, resulting in heavy loss of horses and of men. Our infantry normally marched in two Indian files, one on each side of the road and as close to the edge as possible. When fire came down the road they simply disappeared from enemy view into the bushes and worked their way forward to the enemy position. Usually a few were left to return the enemy fire and give him the idea that the advance had been halted, thus giving the men in the bushes a chance to approach close to his position unobserved. Sometimes the enemy was thus taken by surprise, as in the case described above; more often he took alarm and the doughboys found only an empty trench. This form of resistance slowed up our advance greatly, and had the Filipinos been any sort of marksmen, would have caused us many casualties.

Later, when the fields became drier and passable to the cavalry, and when the latter discovered that the Filipinos could be counted on to skedaddle when they saw the big American horses coming down the road at a gallop, the system changed. The Filipinos knew that they could delay our infantry as long as they chose and make their getaway in safety, but the appearance of a single troop of cavalry gave them more concern for their rearward departure than that of a whole battalion of infantry—and they generally played safe. The American advance became very rapid; "Young's Cavalry Column" swept from the Rio Grande de Pampanga at Cabanatuan to Vigan, a hundred and fifty miles airline, in a month, infantry following as best they could and taking over the garrisoning and policing of the country.

TROUBLES WITH MATERIEL

Several days were spent at San Isidro. My transportation was so inadequate that General Young used his

personal effort to improve it, but got no encouragement from Manila. He had some captured Philippine currency with which he might buy ponies, but his Quartermaster's offer to buy such met with no response. The local authorities said there were no ponies in the town, all having been carried off by the retreating Insurrectos. I knew better and said so. The General told me to find them, and in a few hours thirty-five had been brought from their hiding places and most of them were purchased for my use. We had two-wheeled carts drawn by one pony for most of our supplies; I was able to place three ponies abreast on each. One pony had been pulling each gun; I added another in tandem. A few ponies were designated as mounts, pooled for use. And just before we resumed the advance three light wagons with two mules for each were added to our equipment, which put us on easy street.

A case or two of new ammunition for the guns was received here and I took it to a suitable place outside the town to try it out. It was Frankford Arsenal made. Ten months previously new ammunition for these guns had been requisitioned. It could have been obtained by purchase from the Hotchkiss Company in France, makers of the guns, and could have been delivered in Manila before the outbreak of the insurrection. But those responsible chose to have it made in the United States. That meant getting or making the necessary jigs, dies and heavy machinery and setting up a plant, training workmen—all to supply the ammunition that the only six guns of the type the United States possessed might use. And the war in which it was to be used had been going on for eight months before the first of it was delivered to the guns!

I selected a field that was open as far as one could see, and that had a three-foot dyke across it, about six hundred yards from a road. I had a mark placed on the dyke and stationed Lowenburg a hundred yards or so to the right of it to observe. The first shrapnel was fired for percussion, hit the dyke, bounced off, struck the ground some distance beyond, again bounced and was lost. I had examined it to see that the safety pin was removed before loading. We tried again, with the same result. Then I tried punching the fuze for time fire. Same as before. Then I tried shots for time and percussion at greater ranges, thinking the angle of impact might have something to do with the failure to explode, but again no results.

We returned greatly puzzled and chagrined; our new ammunition was no better than solid shot. Then the solution dawned on me. The shrapnel was armed with the same F. A. fuze used in the ammunition for the 3.2-inch gun which had a muzzle velocity of 1420 foot seconds (1685 old type); our guns had a muzzle velocity of 825 foot seconds—insufficient to "arm" the fuze on discharge. Did General Young storm when I laid the matter before him! A hot despatch to Manila got the Arsenal on the job of weakening the ring in the fuzes on hand, but all the subsequent battle firing of the battery was with the old defective ammunition.

Late in 1898, about the time this ammunition was requisitioned, the then battery commander, Lt. Harry Hawthorne, had designed a limber for carrying ammunition—small carts carrying about 40 rounds each—and their construction had been ordered at the Arsenal. I now learned that they were still incomplete, while the shops were repairing carriages—public and private—for officers on duty in Manila. Again General Young sent a hot despatch and it got results; the limbers soon arrived. Two or three ponies were assigned to each, and a little later some mules arrived. One to each in shafts gave excellent results—much better than did the lightly constructed native pony carts.

On October 23, the "Third Brigade, 1st Division," Brig. Gen. S. B. M. Young Commanding, was organized. It comprised the 3rd and 4th Cavalry, the 11th Volunteer Cavalry, and my command. Ballance's battalion of the 22nd Infantry remained attached. The 3rd Cavalry was just arriving—fresh from the States—half the 4th Cavalry was with the 2nd Division on the railroad and remained there, I do not recall that the 11th ever joined us. Other troops at San Isidro at this time were Batson's battalion of Maccabeebe Scouts, Lowe's Scouts (Tagalogs), and I believe a regiment of volunteer infantry, also Battery F, 4th Artillery, Captain Taylor. This last was the first light battery I had seen in the Islands, fully horsed and equipped. It had marched over much the route of Lawton's San Isidro expedition in May, but now got no further. Its men—armed with pistols—were actually doing outpost duty and that on the side whence enemy action might be expected. General Lawton arrived just before we marched on and I took occasion to call his attention to this, and he promptly ended it.

On October 27, we took the road for Cabanatuan and at Tambo Barrio had a lively skirmish, followed by a heavier one at the Taboatin River. The enemy was well entrenched on the opposite side of the river, their right protected by the Rio Grande, their left extending indefinitely. The terrain was almost identical with that at Calaba, except that the trenches were beyond the river instead of on this side as at that place. The road corner was a hot place and one of my men was killed there. I brought the guns up near it and put all six in position along the roadside short of it. Direction was estimated, elevation given by the quadrant—an early application of indirect fire. Ballance's battalion were *all* to the right of the road this time, working their way through the scanty cover, the cavalry had passed to their rear and was trying to find the enemy left flank. When all was in readiness the guns opened up and with surprisingly good results, about half the shells bursting where they would do the most good. The first fire brought a very heavy return but that soon ended. Our doughboys effected a crossing by their right, some half mile upstream, and the enemy fled. The cavalry did not effect a crossing in time to pursue.

As soon as the firing ceased, Lowenburg and I hurried forward to the Taboatin. We found a deep and sluggish



Crossing at Taboatin

stream about a hundred feet across, between high vertical banks. It had been crossed by a bridge of which only a few piling were left. Beside it was a ramp to the water's edge, but the ferry it once served was gone. We brought up most of the men and while part stood guard against possible appearance of an enemy in the deserted trenches on the opposite bank, the others hastily constructed a raft of material obtained by wrecking some huts, a small covering party went over led by Lowenburg, then two guns and some ammunition were ferried over. Men stripped and swam over, leading the animals. Before any doughboys had crossed, Lowenburg was on the other side with two guns and ammunition, ready to take part in the pursuit. However, the infantry were pretty well used up, and the advance of the day ended with the establishment of outposts about a mile to the north of the river. The rest of my command crossed more leisurely and all went into camp.

Next day the advance was resumed and at Santa Rosa the enemy made quite determined resistance for a while, but flanking action by the cavalry induced him to decamp. Some of our troops pushed on and occupied Cabanatuan without resistance, and we entered that town next day.

GOAT SOUP

At the entrance to the village of Santa Rosa the oldest billy goat I ever saw was tethered to a tree—the only living thing in the place. His beard and the hair on his belly reached the ground! He literally stank, so much so that the men detoured around him to windward. That night we had no food of any sort. Lowenburg and I spread our blankets (saddle blankets by day, sweat soaked and nasty), on the ground and tried to get some sleep. We were roused by a soldier who asked if we would like some soup? Would we! And in the darkness we drank half a cup between us of what seemed highly flavored water. Inquiry revealed that the men had slaughtered Billy, found him too tough to eat, and had boiled him for soup. Again we sought slumber but were again aroused by someone calling for Captain Scott. It proved to be a white Sergeant serving with the

Maccabeebees, who had known me somewhere, and hearing of our destitution, had brought me a cup of real soup and half a dozen hardtack. I hope he is still living and enjoying the fat of the land.

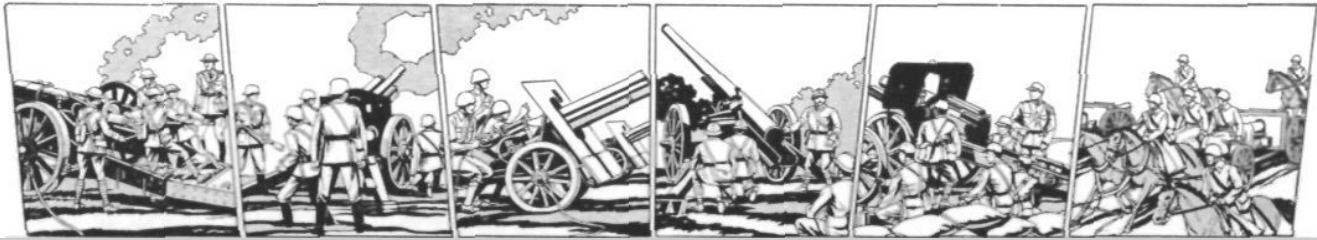
This repast filled us fairly well and we slept. Next morning when we woke we found that part of a hardtack had been dropped in the darkness, had been more or less rolled on during the night, but its fragments were there on the filthy blanket. We carefully picked up and ate every one—our only breakfast. Let those shudder who never knew the pangs of starvation!

CONCLUSION

With the occupation of Cabanatuan ended the first phase of Young's operations. In his official report of "Expedition into Northern Luzon, October 11, 1899, to January 5, 1900," written about the latter date, he had the following to say (War Department Reports, 1900, Vol. I, Part 4, page 269):

"The magnificent, fearless and rapid work of all the officers and soldiers of my command engaged in the action, and especially the splendid fire discipline exhibited by Ballance's battalion and Scott's battery at close range, inspired me with full confidence in the belief that with the officers of high ability and these trained soldiers who enjoyed a dash into the jaws of death as the recompense for a forced march through sloughs of despond which would have barred Christian in his pilgrimage, I could defeat, smash or scatter, all forces Aguinaldo and his generals could concentrate at any given point to defeat the accomplishment of my object."

AUTHOR'S NOTE: This is the last installment of "Gunner in Luzon," as it closes my service as a field artilleryman. Captain B. M. Koehler took over the command at Cabanatuan and the troop became a permanent escort for the battery. They continued on with Young's command to Vigan and Laoag, and on Christmas Day were relieved at the former place and started for Manila (less one platoon under Lowenburg). The flesh-pots of Manila were a strong magnet—the 128 miles to Dagupan were covered in 5 days. There was no fighting after Cabanatuan. Later the command moved into Cavite Province, but again returned to Manila without fighting. Then the divorce came—the battery was sent to Camarines, the troop on good American horses, to Laguna Province, where the regiment was.



FIELD ARTILLERY ABROAD

THE VERTICAL LIGHT-SHOT.* By Col. Berlin in *Des Artillerist (II)*, a popular manual based on German regulations. Translated by Capt. Arthur Hercz, FA.

(A) *General.* Survey procedure with vertical light-shots is based on the principle that when a point to be located can not be seen from known points light-shots are fired vertically from the required points and intersected from known stations. The new point is plumbed upward with this light-shot and thus made visible. The greatest accuracy is obtained when:

- (a) The intersection is carried out from trigonometrically determined points.
- (b) The distance from the observing points to the new point is from 3 to 8 km.
- (c) The wind does not change the direction of the shot.

The vertical light-shot may be used advantageously for speedy determination of a large number of points which can otherwise be found only by tedious methods such as traversing.

(B) *Sighting.* The sighting is carried out with the most accurate instruments available. If possible a distance not less than 3 km should be used, since otherwise the time during which the vertical rocket remains within the optical field is too short for sighting.

The azimuth and time of firing is given each observer, so that he may quickly find the first round (smoke tracer). He then may readily sight the second round of smoke tracer with his instrument. As a check and to allow an accurate reading, the following shots are sighted. Under conditions of poor visibility the number of smoke rounds may be increased. With low ceiling, smoke tracer alone may sometimes be used.

The sequence of 2 smoke and 3 measuring rounds at intervals of one-half minute has been found satisfactory.

In selecting points the position of the sun must be considered in the morning or evening.

The lowest visible point of the trajectory is sighted. The lower 2/3 of this distance may be measured accurately; above this the dispersion and wind influences are noticeable.

In order to compensate as nearly as possible for stronger

wind effects, one man at the firing point observes the plumb of the shots and corrects the direction of fire accordingly.

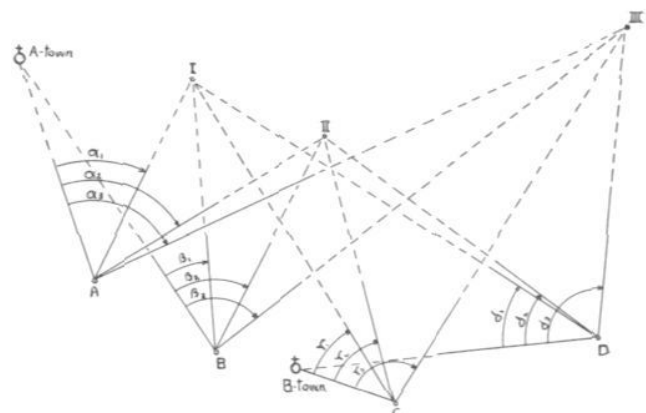
As a guide to the observing troops the following will hold:

- (a) The direction in which the vertical light-shot will appear is previously determined with a protractor.
- (b) The first round is observed without glasses.
- (c) One man of the survey party watches the time and announces when the instrument operator must start his observations.
- (d) The readings are designated as accurate or approximate.

(C) *Concealment.* In the daytime special precautions are not necessary, since the sighting of the shots is only possible for those of our observers who are properly prepared with azimuth and time of firing. In order to prevent the enemy from measuring the required points at night the necessary shots are fired at irregular intervals and alternated among the various points; if necessary, according to a definite schedule which is given those concerned. Further deception may be obtained by firing extra rounds which are not to be measured and are at slightly varying points; or by measuring a meaningless offset point from which the required new points in the vicinity may be located.

(D) *Evaluation.* The evaluation may be done graphically or analytically.

Example: In the figure, A,B,C and D as well as the



*Evidently a shot from a Very pistol or similar device.

church steeples of A- and B-town are known map points and I,II and III are new points to be surveyed in.

At each of the map points A,B,C and D an aiming circle or BC-scope is set up and oriented by using the base-angle (A and B from Church A-town, C and D from Church B-town).

New point I fires 2 rounds of smoke (tracer) then 3 light-shots (tracers) at intervals of $\frac{1}{2}$ minute.

New point II begins at x plus 5 minutes.

New point III begins at x plus 10 minutes.

By averaging the angles measured at A,B,C and D one obtains:

at A	$\alpha_1, \alpha_2, \alpha_3$	at B	$\beta_1, \beta_2, \beta_3$
at C	$\gamma_1, \gamma_2, \gamma_3$	at D	$\delta_1, \delta_2, \delta_3$

The angles determined at points A,B,C, and D between the orienting points and the new points, are plotted on a chart of as large a scale as possible (not smaller than 1/25,000) on which points A,B,C, and D as well as the orienting points have been plotted.

The intersections of the corresponding rays determine the positions of the new points.

SIMPLIFIED RANGING UPON AREA TARGETS. Captain Reinicke, in *Artilleristische Rundschau*, August, 1940. Translated by O. L. S.

Experience shows that in adjustment with ground observation, careful preparation of fire generally brings the first shot approximately in line, at least so as to be observable and sensible. With a broad target, or one covering an area (skirmish lines, occupied trenches, embankments, hedges, or the edges of woods or villages), even a reasonably good preparation of fire will be certain to bring the first shot in line. According to the usual procedure, the 400-, 200- and finally 100-meter brackets are obtained, each round being separately ordered and each shot separately observed.

With targets of this nature, deflection changes during adjustment are often unnecessary. In passing to fire for effect a deflection change is usually called for, to cover the target completely. If the observation station is far to the flank, changes in deflection during adjustment are especially undesirable. An inexperienced officer is often misled into a series of incorrect deflection changes, because, if he is on the right, overs appear to him as right, short left, and *vice versa*. But if no deflection changes are

made, but only changes in range, the line of fire is drawn on the ground by the line of bursts. In sensing shots for deflection and range, terrain sensings are very useful.

Since, on principle, the deflection is not to be changed, much time is lost in announcing range separately for each round in securing the 400-, 200- and 100-meter brackets; for the firing officer has to wait to observe each round before giving the next command. This delay may be avoided by giving the commands for all the necessary ranges, in 100-meter bounds, as soon as the first burst has been observed.

Example: The first round fired at 3800 is observed short. Next command—"1 round 3900 to 4200." The 100-meter bracket is 4000-4100. Command for fire for effect—"Fuze, delay action. Battery 2 rounds, 3950 to 4050, 50-m bounds."

The first advantage is, that the bracket is secured very quickly, say in 30 seconds. Fire for effect can be opened in one minute from the first shot. No more rounds are required than if the 400, 200 and 100-m brackets are secured successively, for the same ranges must be fired, in the one case on separate commands, in the other case on a single command.

The second advantage is that the adjustment, especially for inexperienced officers, is easier and simpler. There is no temptation to make unjustified deflection changes. Then too the individual rounds, fired rapidly, with an interval of only about 5 seconds, are observed almost simultaneously, and draw the diagram of the line of fire more clearly than if they are fired more slowly by separate commands, to form the brackets successively. The officer finds it easier to sense the rounds; and his instinct for sensing is trained and developed.

Finally, adjustment with lateral observation loses all its difficulty, and is reduced to the simplest possible terms.

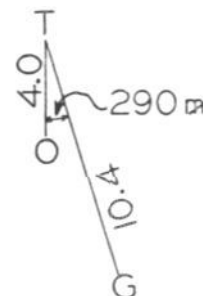
No new words of command are required, but the old commands are modified according to the conditions, as authorized.

This procedure expedites and simplifies adjustment upon terrain features, for the purpose of quick action on fleeting targets. By it, the artilleryman can satisfy the perennial, and just, demand for quick action against infantry. It may be used to advantage, also, in adjustment with a single gun, where the results are to be used for a whole battalion. The quick succession of shots expedites the adjustment, and hence the battalion concentration. It also interferes with the enemy's sound ranging, for the series of shots is so rapid that the observer can not get his apparatus into action in time.

SUBSCRIBERS: Please note statement relative to changes of rank and address printed at bottom of contents page.

PROBLEMS IN GUNNERY

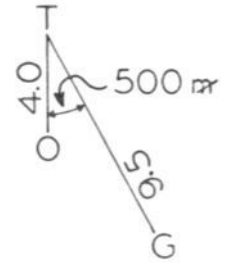
Type problem, precision, small T.—Mission: Registration on a base point. Materiel: 155-mm. M1917 gun (on the right). Ammunition: Shell MK III, normal charge, fuze quick. T = 290 mils; r = 4.0; R = 10.4; F = 12; S (modified) = 7 (12/5 × 3); r/R = .4. Map data corrected.



Initial commands: B Adj, Base Angle 890, Sh Mk III, FQ, No 1, 1 Rd, Q 300.

Rd. No.	Commands	Elevation	Sensing		Remarks
			Dev.	Rn. Def.	
1	Q	300		30 L ?	.4 × 30 = 12
2	R 12	300		+	Small deviation is ignored.
3	L 7	288		—	A one-S change in deflection to compensate for a one-F range change
4	R 4, 3 Rds	294		— ?	Range may be sensed by rule. Deflection is short and is changed 1/2-S to get a deflection bracket.
5				— —	
6				+ ?	
7	R 4	294		+ +	First group of 6 rds has been completed. Fired at 294. 3 shorts, 3 overs. Adjusted elevation is 294.
8				+ ?	
9				— ?	
	L 2	294	Not fired		Fire should be continued in series of 3 rds until deflection is correct.

Type problem, precision, large T.—Mission: Registration on a check point. Materiel: 155-mm. M1917 gun (on the right). Ammunition: Shell MK III, normal charge, fuze quick. T = 500 mils; r = 4.0; R = 9.5; F = 10; S (modified) = 12 (10/5 × 6); C = 5; D = 12; C D = .4. Map data corrected.



Initial commands: B Adj, BD L 100, Sh Mk III, FQ, No 1, 1 Rd, Q 250.

Rd. No.	Commands	Elevation	Sensing			Remarks
				Dev.	Rn. Def.	
1	Q	250		15 R	?	.4 × 15 = 6
2		256			+	
3	L 12	246			—	A one-F range change to compensate for a one-S deflection change. The small deviation is ignored.
4	R 6, 3 Rds	251		+	?	Range may be sensed by rule. A 6-mil deflection bracket has been established. Since all rds were over in range, the range is changed 1/2-F to get a range bracket.
5				+	?	
6				+	+	
7	L 3	246		—	?	First group of 6 rds has been completed. Fired at 248.5. F = 10. 2 shorts, 4 overs. 2/12 × 10 = 1.7. 248.5—1.7 = 246.8, adjusted elevation. Since the deflection is doubtful, no deflection change is made
8				+	?	
9				—	?	
		246.8	Not fired			Fire should be continued in series of 3 rds until deflection is correct.

IMPORTANT ANNOUNCEMENT

Tables of Organization of the field artillery units of the Triangular Division have been printed and are being distributed. T/O 6-85 (the 105-mm howitzer battalion) and T O 6-95 (the 155-mm howitzer battalion) are to be applicable to the light and medium battalions of the field artillery of the Square Division, as it is understood that eventually National Guard units will conform to these tables. Tables for other field artillery units of the Square Division (Brigade Headquarters and Headquarters Battery and Regimental Headquarters and Headquarters Battery) will be ready for distribution shortly after December 1, 1940. The issue of new tables for other field artillery units is expected shortly thereafter.

Amended Tables of Basic Allowances for all field artillery units except those of the Armored Division will be ready for issue on or about December 1, 1940. Those for units of the Armored Division are under preparation and their issue before January 1, 1941, is anticipated.

MUZZLE BURSTS

A "critique" conducted by our readers, wherein "Letters to the Editor" and other informal discussions are welcome.

ANTIDOTES

I submit some remarks on Major Barth's "Antidote for Blitzkrieg." To start with, let's visualize a tank attack in relation to our defense possibilities. First among these is the choice of terrain for a succession of defensive lines. If a study is made now of all probable landing points on our coasts, and of all probable routes of invasion of our land frontiers, the best defensive lines can be chosen and studied while there is yet ample time for detailed reconnaissance. By choosing a defensive position least favorable to attacking tanks the blitzkrieg may be "channeled" and its chances of success greatly cut down.

Next is the preparation of emplacements for 75's to be used for antitank fire only, sited to fire head-on, with direct laying, at tanks coming through the channels. These guns must be protected, at least with sand bags, from airplane attack.

Let us suppose that in spite of the above preparation a considerable number of tanks do break through—how will they operate? Either they will push rapidly forward en masse on a relatively narrow front to seize one or more key points—such as railheads, army headquarters, and supply points—and disrupt communications several miles to the rear, or, after a short penetration, they will fan out in both directions, seeking to hunt down and put out of action the artillery on a fifteen- or twenty-mile front, in order to facilitate the rapid advance of motorized infantry. In the former case relatively few batteries would be in the path of the tank attack, and the great majority of attacking tanks would be met by our own antitank forces in a battle royal. Such artillery as was caught in this melee would have little chance to defend itself. In the latter case the tanks would split up into groups of from three to six, and it is here that the problem of close defense becomes of paramount importance.

Let us take up Major Barth's points in order. (1) There is not much use in arming all field artillerymen with rifles, as they are worthless even against light tanks.*

(2) Re-issue of caissons, especially "double capacity," brings up the problem of manhandling in and out of position. Dumping of loads seems a better solution to the ammunition problem.

(3) Ammunition vehicles would not find much protection at battery positions, but by dumping their loads and retiring far to the rear they could be concentrated in positions where protection could be furnished. As for

*Small-arms are issued to artillerymen not for defense against tanks, but against parachutists, snipers, guerrillas, enemy infantry, fifth columnists, and so on.—Ed.

armament, the rifle, sub-machine gun, and light machine gun are all worthless against tanks.

(4) The replacement of station wagons and command cars by armored cars looks good.

(5) The location of limbers or motor park close to the battery park does not look so good. Limbered guns are the easiest meat for tanks, as they are powerless to resist.

(6) The issuance of motorcycles to batteries might be a valuable means of communication for batteries located near roads.

(7) Direct laying certainly should be stressed, because it is most important for 75's and often can be used with good effect by 155's.

(8) The use of natural obstacles is of course very necessary.

A very important point not covered in Major Barth's article is the scouting and warning service mentioned on page 247 of the July-August issue of THE FIELD ARTILLERY JOURNAL. This should be heavily stressed by all field artillery elements.

Rallying points or assembly positions for headquarters personnel should be designated in case the CP is overrun. All headquarters personnel should know the assembly point locations, and should understand that they must make their way to these locations individually if scattered and driven from the CP.

It seems to me that the best possible antitank defense is in the allotment of antitank guns as an organic part of each field artillery battalion. These can be sited to give all-around defense of gun positions and CP's in most cases. Groups of tanks in search of batteries will not come smashing into the positions at forty miles an hour, but will circle around at from ten to fifteen miles per hour with frequent halts. Properly sited antitank guns stand an excellent chance of putting one or more of each group out of action before being discovered. A battalion or even a battery of 155's leaving the road and moving cross-country through grass, bush, or growing crops leaves an ideal trail for cruising tanks to follow, and the little antitank gun, properly placed, would get a head-on target.

Leaving close-in defense for the larger aspects of antitank defense, I believe this mission and all antitank guns in the division should be given to an artilleryman acting directly under the division commander. He also should be given command of the engineers who attend to road blocks and demolitions, so that the whole scheme of defense would be coordinated under the one officer whose training has best fitted him to handle this problem.—LT. COL. J. E. JACOBS, 317th FA.

WHAT PRICE RANK IN THE RESERVE?

There must be a few hundred Reserve Officers like myself who are wondering about the answer to the above question. Perhaps this article will bring the subject out in the open and get us oriented correctly.

We are World War Officers, of junior rank then, and now between forty-five and fifty years old. We stayed in the Reserve, and helped build a corps of approximately one hundred thousand ROTC graduates, who are far better trained than we were at our entrance into the last war. During this period, we have completed about one thousand hours of extension (correspondence) courses on military subjects, as prescribed by people who ought to know what an officer should study. Some of us are graduates of the Special Course, C & G S, at Ft. Leavenworth. In this process, we have acquired field rank.

That rank now turns out to be against us. Quite properly, the active component needs and is calling for lieutenants and captains to assist it in maneuvers and intensive training. It does not need field officers. Hence at a time when we are seriously preparing, no field officers to speak of, are being intensively trained. Yet if these same field officers are ever going to be used, they need active field training in their duties.

It now appears evident to almost any one that the Corps Area Service Command job will be the first principal role of the Reserve. This also seems logical and proper; why keep a trained Regular officer at home, (wasting his most valuable experience) for an administrative job which a civilian trained man can do as well or even better? But even in this role the highest rank is lieutenant colonel, and very few of them.

What then is to be done with the lieutenant colonels and colonels in the combat arms of the Reserve, the men who have carried the torch for twenty years, who have had war experience, and who are undoubtedly the best trained men in this civilian component, but through no fault of theirs have too much rank?

The original idea was that they should officer units to be raised by the draft, existing now as skeletons. A little calculation on the requirements of the CASC against the present strength of the Reserve, and the trend of War Department policy with regard to these units, make it seem improbable that Reserve regiments will ever be officered by those officers now assigned to them. Only an optimist who does not know his Army can believe that when this new regiment, the Three Hundred Umpty Umph F.A. is brought into activity it will not be commanded by a Regular Officer, who is probably a Major or Lt. Col. now. One of the few things of which our Army seems to have an adequate supply is Regular Field Officers. Wouldn't such an officer really be better prepared to command a new regiment? The only other place for a colonel in a division is Chief of Staff. Does any one think a Reserve Colonel is going to be Chief of Staff?

These seem to be the cold facts on which the estimate of the situation is based. What lines of action are open?

The first would seem to be for the senior reserve officers to accept philosophically that they are "has-beens"; that they can best serve the country by continuing the "tame elephant" role of building up a valuable reserve of young captains and lieutenants who will be really useful where the Army of the United States finds its need. It might be well to appreciate just how important that service really is. The Regular instructor serves a two to four year detail and moves on; the senior reserve officer stays in the community and keeps up the enthusiasm and the organization. To one, it is a job, sometimes pleasant or not, but to which he has been ordered and for which he is paid; for the other a voluntary extra service, for which he gets pay once every other year for fourteen days, about 104:2 ratio. Without regard to relative importance, it is evident both factors are required.

A second line of action would be for the Reserve Lt. Col. or Colonel to turn in his present commission, and be re-commissioned as a major. This action would place him in rank just below his former associates in the World War, thus removing a source of friction, which though silent, is omnipresent. It might also make him available for use under present conditions in building up our active force to 400,000 or more, for a major can be tucked in lots of places, or even a lieutenant colonel, where a colonel would not fit. Even if we visualize a maximum effort, the logical arrangement would still be a regimental commander of Regular Army training, assisted by Reserve executives. When they have proven



"I don't mind dyin' for my country, but I ain't doin' it on beans!"

themselves worthy of promotion in the field, there can be no complaint if they get it.

Perhaps many readers will disagree with me, but in my experience, rank is a question of less importance to the bulk of Reserve officers than ability. The average senior Reserve officer has served willingly and without trouble, under any Regular officer's direction, regardless of rank, as long as the latter knew his job and was imparting that knowledge. If we expect to use senior Reserve officers, they know they need intensive training, regardless of relative rank, and know that everybody else knows it. Since they are not receiving it, the conclusion seems that they are not to be used as such.

There may be other lines of action open, of which the writer is unaware. If there are not, it would seem well for the Reserve officer to get his bearings and act accordingly. Attention is directed again to the opening paragraph.—COLONEL, FA-Res.

EDITOR'S NOTE: A Field Artillery officer of great distinction who read the foregoing discussion has kindly contributed the following pertinent remarks:

"This problem is not confined exclusively to the Organized Reserve. It plagues not only the National Guard, but also the Regular Army. The Regular Army colonel for whom there is no regiment or no room in the ranks of General officer is hard to place. A younger man who still with enthusiasm answers the bell, is usually wanted with the civilian components, with the General Staff, and in fact with all D.O.L. activities. In the event of mobilization for war service, the colonel is too old. On the battlefield, colonels past 45 are, as a group, liabilities. In the rear areas, training and administrative establishments can utilize to fine advantage the experience and ability of these officers—but the supply is always greater than the demand.

"It is hard to grow old. We dislike it intensely. However, there is nothing we can do about it, and it is no crime. In fact, any man who has risen in any component of the United States Army, through all grades up to and including that of colonel, and has performed the duties of these grades with interest, enthusiasm and loyalty, has enjoyed a unique and rare privilege as a citizen of this great Nation."

SHORT DRAMA IN THREE ROUNDS

132 . . . On the way—

Line short—Deflection short—

Right eight zero—136 . . . On the way—

Line over—Deflection over—

Left four—Three rounds—134—

"Cease firing," came the command from the Instructor.

"Are you sure that last round was over?" snapped the fire instructor, to the Reserve Officer.

"Yes sir, I am positive. It was a beautiful line over."

"Now just a moment, Lieutenant. Didn't you see that flash in front of that small tree, the base of which is your target?"



"I am not your buddy and I haven't got a cigarette!"

"It may have looked that way but I saw the smoke right in back of that tree," affirmed the Reserve lieutenant.

"Well," softened the Regular instructor, "it is your problem; go right ahead with it."

The reserve lieutenant turned to the operator, hesitated a moment. Then gave the command: "Right four—One round—136."

As they were waiting for the round to be fired the instructor turned to the lieutenant and said, "You sensed that last round fired at 136 as Line Over. What are you going to call it now? Doubtful?"

The lieutenant looked at the instructor, then to the telephone operator, scratched his head a little, and turning to the recorder he said, "Change that last sensing from line over to 'Disputeful.'"—CAPT. GEORGE HAIG, FA-Res.

THE SEAMY SIDE OF LIFE AT FORT SILL

BC (who has just attended Officers' Call), to the world in general: "Well, I miss another lunch. Have just been to a one-man bull session, and now have to turn out for a Field Artillery School requirement."

Signal Sergeant (overhearing): "Never mind, Cap'n. I have never missed a meal but I have sure postponed lots of 'em!"

BOOK REVIEWS

I SAW FRANCE FALL. By Rene de Chambrun. William Morrow and Company, New York, 1940. \$2.50.

Captain Count Rene de Chambrun's family has been well publicized. His father was a distinguished general in the Great War, his mother a sister of Speaker of the House of Representatives Nicholas Longworth, his father-in-law is Pierre Laval, and he is a great-great-great-grandson of the Marquis de Lafayette. Nevertheless, de Chambrun spent the first months of the war as an ordinary lieutenant in the infantry reserve in one of the cellar forts of the Maginot Line. He was then made a liaison officer with the B. E. F., and in that capacity served during the Battle of Flanders and the retreat to Dunkerque. The title is somewhat misleading, for almost all of the book is taken up with a narrative of Captain de Chambrun's personal experiences during the war. The last few pages contain a picture of France since the armistice which will certainly be unfamiliar to the readers of American newspapers. The reviewer heartily recommends the book, for it is by far the most interesting personal narrative of the present war that he has so far come across.

—H. S. F.

DE GAULLE AND THE COMING INVASION OF GERMANY. By James Marlow. E. P. Dutton & Co., New York. \$1.00.

There is a melancholy moral to this book, which has apparently escaped the author—namely that it does not pay to be right in the army if one's opinion is different from that generally accepted. It appears that General Charles de Gaulle has been writing for years about the tremendous importance of mechanized forces, and the need for France to build a mechanized army. His efforts were consistently ignored by the French High Command, and now that he has been proven correct he is in exile, condemned by the French government. General J. F. C. Fuller performed much the same mission in Great Britain, and according to report he is now suspected of harboring opinions which put him out of favor with the British government.

One should forget the fiasco at Dakar when reading this short book. Whatever General de Gaulle may do in the present war cannot damage his reputation as a brilliant military thinker. One should also pass over the somewhat flamboyant style of the author. The real meat of the book is contained in Chapters IV, V and VI, which are largely made up of excerpts from General de Gaulle's book, "Towards the Professional Army" (1934). Herein the possibilities of an armored force are clearly outlined, and

its future accurately foretold. In proof thereof the author states, from apparently good evidence, that the Germans paid General de Gaulle the compliment of adopting his ideas when they formed the now famous Panzer divisions.

—H. S. F.

OUR FUTURE IN ASIA. By Robert Aura Smith. The Viking Press, New York, 1940. \$3.00.

Mr. Smith herewith presents a more or less routine plea for an aggressive policy in the Far East. A certain group of reviewers will probably classify this book as "imperialist," and doubtless it is, for Mr. Smith employs all the old familiar arguments and catchwords, including even "the white man's burden." In Mr. Smith's opinion our Far Eastern trade is of great value, apparently worth even the cost of a major war. The author completely rejects General MacArthur's claim that the Philippines can defend themselves, and believes that we should continue to maintain our position in the Islands. The cynic might reply that the Filipinos have shown themselves so consistently unappreciative of America's efforts to assume "the white man's burden" that they probably deserve the independence which will be legally theirs in 1946. Mr. Smith naturally does not give prominence to the counter argument that in the Western Hemisphere the United States has a sphere of influence in which it naturally predominates, and a field for trade expansion which it can most easily develop, maintain and protect.

—H. S. F.

ASIAN ODYSSEY. By Dmitri Alioshin. Henry Holt and Company, 1940. 313 pages. \$3.00.

The Asian Odyssey lives up to its name. The young author, Dmitri Alioshin, an artillery officer in the Imperial Russian Army, gives a thrilling personal account of a long and adventurous journey, when after the Second Revolution, Russia was in chaos, and he, like many others of his class, was in flight before the wrath of the people.

The author knows how to write, and the narrative holds the intense interest of the reader. It describes a career commencing as a student of consular subjects, followed by many experiences including those of being an officer in the Imperial Army, a major of Red artillery, a translator with the American Expeditionary Forces in Siberia, service with the White Russians, escape to Mongolia through the Gobi Desert with untold sufferings, disguised as a Buriat, and finally enforced service under the mad and bloody Baron Ungern.—W. H. S.

PRELUDE TO VICTORY. By Brigadier General E. L. Spears. Jonathan Cape, London, 640 pages. 18 shillings.

It is quite probable that no foreign military book, not even excepting the great military classics, has been read by as many officers of the United States Army as Brig. Gen. E. L. Spears' *Liaison, 1914*. Another book by Gen. Spears would therefore be of interest under any conditions. Read in the light of recent events in France, and the knowledge of Gen. Spears' part in them (he is reported to have been the chief liaison officer between the British and French armies), it has striking significance.

The book deals primarily with the Nivelle offensive of 1917, and the complex, and, at times, bitter relationships between the military leaders of England and France, between the civilian leaders of the two nations (the "frocks" in Sir Henry Wilson's expressive phrase), and between the soldiers and statesmen of each nation.

Some readers may be disappointed in this book. It doesn't flow, as did the author's first book, with the drama of fast moving, vital events seen through the eyes of a young soldier and written down while their impress was fresh upon him. Rather, it is the considered, carefully expressed history of a tragic phase of the war, put down more than twenty years after the event. The natural result is digressions—opinions on French characteristics and methods, and summaries of the careers of the chief actors—all valuable and even impressive by reason of the author's soundness of judgment and wealth of background, but, nevertheless, digressions from the story. Considered, however, as a contribution to the ever pressing problems of relationships between allies, and between civilian and military leaders, it is an invaluable study.—H. W. B.

ALEXANDER THE GREAT. By Lewis V. Cummings. Houghton Mifflin Company, 1940. \$3.75.

The author, Lewis V. Cummings, has related an age old story of one of the most colorful characters of history in a most attractive and thrilling manner. It holds the attention of the reader throughout the entire narrative. The author's independence of thought based upon his personal research is most enlightening in view of present day happenings.

The story is made more attractive by reason of his outline of the military and political conduct of Philip of Macedon, the father of Alexander the Great, which gives the reader a thorough understanding of Alexander's training prior to the death of his father. The whole story pictures Alexander as one educated in the art of military murder and an inspiration to the present day Dictators.—W. H. S.

EMPIRE ON THE SEVEN SEAS. *The British Empire, 1784-1939.* By James Truslow Adams. Chas. Scribner's Sons, 1940. 391 pp. \$3.50.

One hundred and fifty-five eventful years are covered in the historical narrative of Great Britain, *Empire on the Seven Seas*. Beginning with the political gloom of 1784 and ending with the grim uncertainties of 1939, the author gives a swift and vivid account of the mighty empire with its singular record of "muddling through" to victory.

Mr. Adams takes account of numerous wars incident to maintaining the empire, but he conveys the view that British solidarity stems from voluntary loyalty rather than from fear of force. A leisurely, tolerant, people with a firm conviction of its own superiority, the nation held aloof from strange new ideologies until challenged to defend its political traditions against them. The significant relation of this development to American destiny (in the opinion of the author) is expressed in his concluding remarks: "In this world crisis, we in America have a great stake . . . Different peoples may have different ideals of government, but for those who have been accustomed to freedom of person and of spirit, the possible overthrow of the British Empire would be a catastrophe scarcely thinkable . . . the strongest bulwark outside ourselves for our own safety and freedom would have been destroyed."—F. P. J.

NOTES ON FIELD ARTILLERY. By Colonel Oliver L. Spaulding, Jr. Fourth Edition, 1918. \$1.25.

The first edition of this book was published in 1908, and was expanded from a series of lectures delivered by General Spaulding at the old Infantry and Cavalry School at Fort Leavenworth. It proved so popular that four editions were printed, the last two having been much in demand by the artillerymen of the Great War. Much of this book still applies today, but it is particularly valuable as a record of the evolution and progress of field artillery. It is an historical source document which belongs in every field artilleryman's library. Maps of the Gettysburg and Leavenworth areas are included.

—H. S. F.

"21 TO 35" WHAT THE DRAFT AND ARMY TRAINING MEAN TO YOU. By William H. Baumer, Jr., and Sidney F. Giffin. Prentice-Hall, Inc., Publishers, New York. \$1.00.

Part I of this book describes the workings of the Selective Service system, and Part II discusses the organization and function of the various arms and services. Part III is a detailed explanation of the character of the conscripts' military service, their induction into the army, and their life in the training camps. The last chapter outlines some of the opportunities to be found in the army, and the book as a whole should be valuable to those who are called into the military service.

—H. S. F.

Some Forward Observations



△ **THE FIELD ARTILLERY JOURNAL** was instituted thirty years ago as a quarterly magazine; later it was found possible to issue six numbers each year. We now are able to announce that during the year 1941 twelve issues will be published, so that subscribers will receive the magazine as a monthly. The price of a subscription will remain three dollars per year for domestic subscriptions. The general format and content of the magazine will be unchanged except that we hope to make improvements as funds are available. As a consequence of this important change it should be possible to supply our readers with more timely information on developments here and abroad. It is hoped that increased support from members, in the way of bringing in new subscriptions and furnishing material for publication, will justify the increased service which we are thus giving.

△ THOSE PERVERSE BRITISH have, since this war started, taken to calling a battery a "troop" and a battalion a "battery," no doubt with an idea of confusing the Germans.

△ WE ARE NOT doing so badly ourselves, what with our new divisional artillery organization. And while we are on that subject, what shall we call this new organization? We dassn't call it a brigade, they say, yet it is more than a regiment. How about brigament? Or regigade? "Group" sounds too much like the World War and the French, now sadly outmoded. Personally, we prefer some good provincial American word—descriptive, concise, easily remembered. That brings us logically to "bunch."* Everyone knows what a bunch of artillery is—or anything else, for that matter. The divisional artillery of the 1st Division, then, would be designated as First Field Artillery Bunch, abbreviated 1st FA Bch. *Simple*, isn't it?

△ BUT THIS DOES not exhaust the subject. How is one to tell, from the numbers, to which "divisional bunch" any specified battalion belongs? These battalion numbers are all mixed up, don't follow any historical precedent or anything else. Maybe they were just read at random from the cipher device. Think how upset the Germans will be about it! And Leavenworth! Well, this is really a little beyond us, but maybe something can be done to show whether a battalion is "light" or "medium." It might be fun to designate a light battalion, say the 76th FA Bn (which

because of its higher number one would logically suppose to be the larger caliber), as the 76th f.a. bn. The smaller numbered (but bigger calibered) 31st FA Bn, then, would become the 31ST FA BN. But that is still not enough. How is one to distinguish the 36th FA (corps 155-mm. gun) from the 79th FA (240-mm. howitzer)? How about this: 36th Fa and 79th fA? Of course, someone might forget the ground rules, causing endless trouble again. Perhaps we had better just let the matter drop.

△ DON'T FAIL to read the interesting and realistic account of open warfare in "A Light Artillery Battalion's Baptism of Fire." It furnishes at least one moral that every one of us ought to take to heart. As soon as the battalion had fired its first concentration of the war, the commander (at the OP) sent a telephone message to the firing batteries telling them that their fire had been accurate and effective. How that must have encouraged the members of the gun crews! With what increased spirit they must have bent to their strenuous and dangerous work!

△ WE MIGHT follow a similar procedure at service practice, thus making the men feel that they are "helping win the war" rather than merely acting as hired hands doing a strong-back act. Unfortunately there has been a somewhat opposite tendency in the past. A more common message to the guns has been the stern "What is the cause of the delay?" or "Check that last salvo." A little praise (when due) would help a lot.

△ BATTALION AND battery commanders might go even further in making service practice stimulating and interesting to the men as well as to the officers. Though it might require a little imagination and extra study, the practice could be based on a simple situation or scenario, in which the men at the guns as well as at the OP and CP are kept informed as to changes in the situation. No need for anything complicated, but if the officer directing the practice will plan it ahead of time he will find it easier to avoid the old stereotyped target designations, and can make each problem a part of the tactical situation. One experienced officer of our acquaintance used this method successfully, but with a variant in which the tactical situation was something which had actually occurred during the World War. Thus he added the interest of historical example to the value of specific tactical exercise. All this pays dividends. Ammunition is too scarce to waste in haphazard, spur-of-the-moment problem assignment.

*We reject "outfit" because someone would surely want to call its commander an "outfitter."

MERRY CHRISTMAS!

Stations of Field Artillery Officers

I—Regular Army, and Reserve Officers on Duty with Regular Army

Notes: (1) This list is as of October 13, 1940, and its accuracy cannot be guaranteed.

(2) Where no names are listed with the unit, either no field artillery officers had been assigned on the date on which this list was compiled, or roster thereof had not been received at this office.

II CORPS ARTILLERY HDQRS. Ft. Jay, N. Y.

IV CORPS ARTILLERY HDQRS. Ft. Benning, Ga.

13TH BRIG. HQ. BTRY. Ft. Bragg, N. C.

COLONEL John R. Starkey
LT. COL. Milton H. Taulbee
MAJOR John B. Murphy
MAJOR Maurice W. Daniel
CAPTAIN Thomas J. Sands
CAPTAIN Hugh W. Riley

17TH FIELD ARTILLERY Ft. Bragg, N. C.

LIEUTENANT COLONELS:
Archibald V. Arnold
Ward C. Goessling
Malcolm R. Cox

MAJORS:

Jefferson C. Campbell
Robert Du V. Waring
Paul L. Martin
CAPTAINS:
George D. Pence
James B. Kraft
Thomas M. Watlington, Jr.
Charles L. Heitman, Jr.
Raymond C. Brisach

Donald C. Little
Andrew Hero, 3d
Robert P. Thompson
Emile J. Greco
Newell C. James
1ST LIEUTENANTS:
David W. Hayes
Hugh W. Caldwell
2ND LIEUTENANTS:
Walter E. Gunster, Jr.
Donald B. Stewart
Joseph R. Couch
Roderick Wetherill
Carl K. Warren, Jr.

RESERVE OFFICERS

1ST LIEUTENANTS:
Tom C. Shackelford
James L. Hendry
James H. McCord
Harry H. Alley
Robert R. McDonald
Henry M. Renfro
Ellwood F. Oakley, Jr.
Leo K. Stone
William E. McGee, Jr.
George L. Anderson
2ND LIEUTENANTS:
George R. Creel
George McCutchen
John M. Boyett
Joe M. Dietzel
John M. Sparks
Robert D. Millar
Charles S. Ramstack
Alexander G. Kharitonoff
Joseph J. Fisher
Lenwood C. Lee
Orville E. Craig
Woodrow H. Barnes
Fred M. Hiron
Irvine F. Belsler, Jr.
George C. Fanning, Jr.
Joseph C. Thompson
James F. Mulcahy
Earl A. Butts
John J. Owen, Jr.
Peter P. Halawicz
Walter V. McGill
Douglas G. McMillin
Frank E. Oliver
Albert K. Paull
Joe L. Rutan
Campbell N. Smith
Thomas B. Henley
George V. Kenmore

36TH FIELD ARTILLERY

Ft. Bragg, N. C.

LIEUTENANT COLONELS:
Walter W. Hess, Jr.
William Clarke
John M. Fray
John L. Gammell
Earl C. Ewert

MAJORS:

John H. Lewis, Jr.
Frederick B. Porter
CAPTAINS:
John D. Salmon
John W. Black
Edwin L. Johnson
William A. Walker
Roderick L. Carmichael, Jr.
Arthur C. Goodwin, Jr.
Johnson Hagood, Jr.
Horace F. Bigelow
George T. Powers, III
John E. Slaughter
Melville B. Coburn
John B. R. Hines
Elmer C. Blaha
1ST LIEUTENANTS:
Harlan K. Holman
Charles L. Haley, 3rd
2ND LIEUT. Olin L. Bell

RESERVE OFFICERS

1ST LIEUTENANTS:
Edmund E. Warren
Harvey L. Simms
Reginald L. Williams
Thomas C. Dykes
Joseph A. Wanderscheid
William E. Bennett
Hutchinson I. Cone, Jr.
Francis D. Jones, Jr.
George V. Beck
Robert S. Bart
John S. Sellers
Jerome M. Smith
2ND LIEUTENANTS:
Philemon A. St. Amant
William C. H. Dawsey
James C. Maguire
Lopez Mantoux, Jr.
Harold A. Weinbaum
Richard A. Peterson
William R. Peters
Howard D. Sutterlin
Herbert Metting, Jr.
Sam E. McCroskey
Harold G. Dexter
Charles J. Genster
Walter T. Morey
James R. Warner
Elmer H. Almqvist, Jr.
Thomas W. Appleyard
Burr E. Davidson
Jack E. Kron
Robert J. Reed
Kenneth Steward, Jr.
William F. Cathrae
Gordon B. Patton
Wilson Freeman
Burrell C. Hassett, Jr.
Malcolm B. McDonald
Emanuel Levenson
Ernest C. McInnis
Glenn A. Steckel

77TH FIELD ARTILLERY (LESS 1ST BN.)

Ft. D. A. Russell, Texas

LIEUTENANT COLONELS:
Bertram Frankenberger
Daniel A. Connor
MAJOR Edward J. Roxbury
CAPTAINS:
Gerald J. Reid
Stuart F. Crawford
John W. Ferris
Charles B. Elliott, Jr.
Gerald F. Brown

1ST LIEUTENANTS:

Leo B. Burkett
Frank G. Ratliff
Benson W. Campbell, Jr.
William H. Hastings
2D LIEUT. William Trabue

RESERVE OFFICERS

1ST LIEUTENANTS:

William R. Barricklow
Kenneth G. Klein
Joel E. Cunningham
Burl L. May
2ND LIEUTENANTS:
Edward Lamirand
Ralph W. Adams
Charles R. Oliver
William C. Hetherington
Robert E. Bement
Arlio E. Kline
Crawford E. Grenard
Fred R. Biederman

77TH FIELD ARTILLERY (1ST BN.)

Ft. Sill, Okla.

LT. COL. Louis A. Craig
MAJORS:
Voris H. Connor
George P. Privett
CAPTAINS:
William J. Eyerly
Robert I. Cardell
Charles H. White, Jr.
Edward C. Spaulding
Harrison B. Harden, Jr.
Kenneth F. Dawalt
Thomas F. Binford
Hugh M. Exton
1ST LIEUTENANTS:
Martin L. Webb
Francis B. Harrison

RESERVE OFFICERS

1ST LIEUTENANTS:
Paul C. Thomas
Karl A. Tubensing
Al David Sims
Alexander B. Welcher
Cecil W. Woods
Clarence N. Dunn
2ND LIEUTENANTS:
John V. Whelan, Jr.
Arthur Z. Varland
Louis H. Aten
Neal W. Harris
Thomas L. Bryan
Ralph Merkle
Everett C. Rowe

1ST OBSN. BN.

Ft. Bragg, N. C.

LIEUT. COL. Francis M. Crist
CAPTAINS:
Archer F. Freund
Gerald Chapman
James G. Harding
Paul R. Weyrauch
Geoffrey D. Ellerson
Elmer J. Koehler
Arthur R. Herz

RESERVE OFFICERS

1ST LIEUTENANTS:
Everett Lyn Beasley
Joseph S. Bochnowski
Robert Hugh Cameron
Harold Arthur Delp
Conrad Philip Irwin, Jr.
Alwin Steinmayer Kolm
Jesse Roy Mattocks
Ewel Jackson Morris
Howard Melvin Rich
James Leonard Sweeney
2ND LIEUTENANTS:
Gustavus W. Center
Herbert F. Jewson, Jr.

VI CORPS ARTILLERY HDQRS.

Ft. Sheridan, Ill.

IX CORPS ARTILLERY HDQRS. Ft. Lewis, Wash.

18TH BRIG. HQ. BTRY.

Ft. Sill, Okla.

MAJORS:
William W. Ford
W. B. Avera
1ST LIEUT. R. A. Broberg
RESERVE OFFICER
1ST LIEUT. Glenn A. Powell

349TH FIELD ARTILLERY

Ft. Sill, Okla.

COLONEL A. L. P. Sands
LT. COLONELS:
Edmund B. Edwards
Ross B. Warren
Derrill deS. Trenholm
George H. Cushman, Jr.

MAJORS:

James V. Carroll
Richard C. Singer
CAPTAINS:
John L. Lewis
Earl L. Barr
Leo W. Cather
Daniel T. Workizer
William P. Grieves
Harry J. Lemley
Duncan Sinclair
James W. Totten
Raymond L. Cato
Fred P. Campbell

RESERVE OFFICERS

CAPT. Frank R. Arnold
1ST LIEUTENANTS:
Frederick W. Hower
Ralph M. Baird
Willard D. Clark
Albert J. Bolsinger
Kenneth H. Baker
David C. Donan, Jr.
Willis B. Lynch
George H. Connor
John H. Stockett
Lyman D. Burkett
William C. White, Jr.
Stanley E. Whitmore
Louis O. Carroll
Evan A. Lewis
Phillip C. Clarke
Robert M. Leich
Don W. Dixon
William P. Eagles, Jr.
Jack L. Kerns
James M. Mathews
Noel McK. Weaver
Paul J. Bidle
James C. Vanderslice
John Antonchick
Wardell S. Duggan
Ernest W. Anderson
John R. Robb

2ND LIEUTENANTS:

Claude LeMasters
Harry T. Van Fossen, Jr.
Denver H. Groff
Clarence F. Murray
Thomas F. Hammett
Harvey D. Safford
George H. Morrill
Frank C. Harold
George H. Morris, Jr.
Harry G. Wilson
James H. Ashbaugh
Leonard R. Fugitt
Brenton A. Devol, Jr.
Richard L. Burkhart
Wilbur C. Hudson, Jr.
William A. Henke
Alfred A. Hedstrom
Harlan V. Logsdon
James L. Nammack
Richard E. Scott

2ND LIEUTENANTS:

Verde W. Bennett
Donald E. Dickson
Carl R. Pandel
Bradford L. Smith
Everett C. Hobbs
George W. Smith
Adair C. Wilber

Verde W. Bennett

Donald E. Dickson
Carl R. Pandel
Bradford L. Smith
Everett C. Hobbs
George W. Smith
Adair C. Wilber

2D OBSN. BN.

Ft. Sill, Okla.

MAJORS:
Herbert W. Kruger
Leslie L. Hittle
CAPTAINS:
William C. Bullock
Merillat Moses
Thomas L. Crystal
1ST LT. Stanley C. Scott
2ND LT. Charles B. Huntley

RESERVE OFFICERS

CAPT. Charles LeRoy Howe
1ST LIEUTENANTS:
Calvin A. L. Dickey
Jack W. Foster
William R. Herdner
Gere A. Gallup
Earnest H. Johnson
Jack H. McAleney
Virgil A. Garcia
Charles A. Hearn
Harold E. Kuhlman
Earl R. Correll
Ivan Miller
John H. Davis, Jr.
Clarence E. Harness
Bruce D. Owen
Jack Harding

I ARMORED CORPS

Ft. Knox, Ky.

LT. COLONELS:
Percy G. Black
Hugh J. Gaffey
J. J. Bethurum Williams
D. Devine
James A. Pickering
MAJOR Newton W. Jones
MAJOR H. W. Holt
CAPT. S. V. Krauthoff
1ST LT. Charles Van Volkenburg

RESERVE OFFICERS

CAPTAINS:
William H. Bloss
William C. Jackson
Philip S. Lauben
R. N. Lewis
1ST LIEUTENANTS:
Howard Hammond
Howard D. Hertz
John W. Hope
Edward L. Malec
Gordon B. Short
2ND LIEUTENANTS:
Curtis K. Allen
Robert C. Kingsbury
Fred M. Nordmann

68TH FIELD ARTILLERY

Ft. Knox, Ky.

LT. COL. John B. Wogan
MAJORS:
Henry W. Holt
Orville W. Martin
Sheffield Edwards
CAPTAINS:
Charles P. Summerall, Jr.
Haydon Y. Grubbs
Mercer C. Walter
Louis T. Heath
Walter F. Gallup
Neil M. Wallace
James R. Pritchard
John F. Smoller
John A. Glorioid
John N. Wilson
1ST LT. William McG. Lynn, Jr.
2ND LT. David B. Byrne

RESERVE OFFICERS

1ST LIEUTENANTS:
Edwin H. Burba
Thomas H. Reynolds
Robert M. Christie
Richard F. Thweatt
Roland J. Meeker
Gilbert A. Ellman
George J. Helms
Oscar W. Schoech
James P. Hindman
John Soma
Robert L. Lawrence
Eugene Spierer
2ND LIEUTENANTS:
Ernest R. Gray
Fred R. Glassburner, Jr.
Charles N. Hall
Donald E. Allen
Frank D. Cooper
Harland S. Laycock
Frederick A. Myren, Jr.
Robert E. Bard
Glen T. Pillsbury
Gene O. Sinex
William F. Rogers

27TH FA BN.

Ft. Knox, Ky.

LT. COL. Vernon E. Pritchard
MAJOR Hugh Cort
CAPTAINS:
Stephen S. Koszewski
Thomas E. de Shazo
Bertram A. Holtzworth
George E. Wroclloff
Todd H. Slade
Phillip H. Pope
James M. Worthington
1ST LT. Sterling R. Johnson

RESERVE OFFICERS

1ST LIEUTENANTS:
Walter E. Tardy
William P. Williamson
Charles W. Powell
Bernard W. Elshire
Ralph R. Carlin
Joe A. Smalley
Ralph R. Hughes
Vern R. James
2ND LIEUTENANTS:
Warren T. Shayler
Robert F. Frey
Earl A. Gordon
John H. Halley, Jr.
Charles A. Caswell
Howard L. Fielden
John P. Remy
Thomas G. Agnew
Myron T. Johnson

ARTY. SEC., 2D ARMORED
DIV. HDQRS.

Ft. Benning, Ga.

14TH FIELD ARTILLERY
Ft. Benning, Ga.
LT. COL. Roland P. Shugg
MAJORS:
Edward H. Metzger
Eric S. Molitor
John G. Howard
CAPTAINS:
Bernard F. Luebbemann
Nathaniel C. Cureton, Jr.
Louis C. Friedersdorff
John O. Taylor
William E. Grubbs
Robert C. Bahr
John G. Benner
Beverley E. Powell
1ST LT. Robert C. McCabe
1ST LT. William R. Buster
2ND LT. Robert A. MacGregor
2ND LT. Robert C. Stump

RESERVE OFFICERS

CAPT. Richard H. Wills
1ST LIEUTENANTS:
Maurice A. Mullan
Anthony R. DiSario
John H. Dixon
Lloyd P. VanCourt
Harry P. Wood
Clem G. Hailey
George G. Perry
Addison F. McGhee, Jr.
Arthur P. Evans
Douglas C. Wallace
Lyman G. Haskell
2ND LIEUTENANTS:
Alfred H. Exton
William E. Hendrix
John R. Dowd, Jr.
Walter F. Tucker
Henry W. Tarbett

78TH FA BN.

Ft. Benning, Ga.

LT. COL. Thomas T. Handy
MAJOR John A. Smith, Jr.
CAPTAINS:
Kenneth W. Treacy

Julian H. Baumann
Lewis H. Ham
Clyde L. Jones
James E. Goodwin
James E. Norvell
1ST LIEUTENANTS:
Barry D. Browne
Roger M. Lilly

RESERVE OFFICERS

1ST LIEUTENANTS:
Paul W. Albrecht
Eugene P. Halpin
Oswald R. Hummel
Stanford C. Nelson
William J. Bowers, Jr.
George E. Bain
2ND LIEUTENANTS:
Nathaniel Heard
William I. Knox
Walter H. Mytinger
Bertram H. White
Lester E. Havener
Charles W. Walter
John D. Perdue
Virgil Leo Milbrath
Emmette W. Beauchamp, Jr.

HQ, BTRY, 1ST DIV. ARTY.

Madison Barracks, N. Y.

MAJOR Herschel D. Baker
MAJOR Seward L. Mains, Jr.
CAPT. Edwin G. Hickman

RESERVE OFFICERS

1ST LT. Charles M. Hand
1ST LT. Edward L. Austin
2ND LT. Verner F. Ogi
2ND LT. Charles Clark

5TH FA BN.

Madison Barracks, N. Y.

COLONEL Carl Baehr
LT. COL. Jesse B. Hunt
MAJORS:
William E. Waters
Warren C. Stout
Wm. D. Paschall
CAPTAINS:
Elwyn H. Eddy
Robert N. Tyson
Harry L. Stiegler
Richard S. Carter
Percy W. Thompson
Frank N. Leakey
1ST LT. Ferdinand Unger
2ND LIEUTENANTS:
Vernon E. R. Rawie
Carl H. Wohlfeil
Gordon D. Bilat

RESERVE OFFICERS

1ST LIEUTENANTS:
Roy C. Brewer
John D. Sicher
Kenneth L. Henry
Wilson V. D. Ledley
George Weiland, Jr.
William Gost
Theodore E. Crocker
Leonidas Gavalas
Milton Robbins
2ND LIEUTENANTS:
Mason R. Bagley
Coleman D. Asinof
John R. Groves
Lloyd M. Barnett
Vernon R. Rottstedt
Frederick C. Griswold
Norvel H. Barnhart
Marvin W. Flora
Robert J. Morgan
Lewis E. Moncrief
Owen B. Knight
George D. Godwin
George E. Stevenson, Jr.
Durand B. Blatz
Theodore A. Dedowitz
Robert B. Ritchie
George T. Staffelbach
Leonard H. Warren
Richard J. Lindo
Herbert E. Sunderstrom
Robert N. Steele
William E. Jacoby
Martin J. Lawler
Chauncey D. Matthews

7TH FA BN.

Ft. Ethan Allan, Vt.

MAJOR Edward H. Lastayo
CAPTAINS:
Eleazar Parnley, III
Richard E. O'Connor
Leroy G. Davis
George W. Gibbs
1ST LT. Robert C. McDonald
2ND LT. Daniel J. Minahan
2ND LT. Joseph P. Donohue

RESERVE OFFICERS

1ST LT. Henry C. Robinson

2ND LIEUTENANTS:
Edmund W. O'Brien
David E. Cain
William R. C. Greene
James R. Dowd
Richard G. Labovitz
Bertil B. Sandell
Nelson W. Tobey
Charles McK. Parr, Jr.
M. Dudley Buck

32D FA BN.

Ft. Ethan Allan, Vt.

33D FA BN.
Ft. Ethan Allan, Vt.
LT. COL. Henry A. Schwarz
LT. COL. William H. Colbern
CAPTAINS:
Eugene B. Ely
John F. Fiske
James K. Wilson, Jr.
Joseph W. Keating
Walter J. Bryde
1ST LIEUTENANTS:
Richard J. Long
Chester C. Holloway

RESERVE OFFICERS

1ST LIEUTENANTS:
Hugh G. Brown
Wilson K. Dickerman
Wilson C. McNamara
Ralph L. Boynton
2ND LIEUTENANTS:
Christian G. Kuehlke, Jr.
Robert A. McKenna
Thomas H. Healy
John A. Lahmer
Edgar P. German
Robert A. Riesman
Reinhold Riedel
Benjamin A. G. Fuller, II

HQ, BTRY., 2D DIV. ARTY.

Ft. Sam Houston, Texas

12TH FA BN.

Ft. Sam Houston, Texas

COLONEL A. C. McBride
MAJOR R. P. Huff
CAPTAINS:
G. W. Power
R. C. Carpenter
S. R. Browning
1ST LIEUTENANTS:
P. L. Daffrom
R. A. Jameson, Jr.
B. W. Paden
M. S. Stilwell
L. J. Semrod
J. H. Morehead, Jr.
R. D. McKee
2ND LIEUTENANTS:
C. E. Patton
J. M. Loomis
F. L. Magee
J. A. McReynolds
M. W. Younger
L. R. Sumpter
E. F. Shultz
W. W. Page
P. M. Setzer
M. E. McGovern
M. D. Oliver
A. D. Schutz
H. N. Maples
A. G. Neelley
T. J. Sharpe
M. S. Lale
C. D. Schutz
R. R. Nance, Jr.
J. W. Jeffers

OFFICERS NOT PRESENT WITH

BATTALION
LT. COL. J. Kennedy
MAJOR Richard Sears
CAPT. J. P. Holland
1ST LIEUTENANTS:
W. E. Showalter
H. C. Walker
K. E. Hudson
D. W. McKinney
F. J. Silvey
N. L. Jones
W. J. Stover
2ND LIEUTENANTS:
C. L. Clark, Jr.
R. W. Milligan
W. P. Francisco
J. G. Dubuisson
J. R. McLean
C. F. Barr
W. G. Hopkins, Jr.
J. J. Fahy
P. A. Rennord
A. W. Fobes
P. V. Farrell

15TH FA BN.

Ft. Sam Houston, Texas

COLONEL Norman P. Morrow
LT. COL. Clyde D. Parmelee

MAJORS:

Maxwell D. Taylor
William R. Grove, Jr.
CAPT. George H. McManus
1ST LIEUTENANTS:
Thomas J. Webster
Carroll W. Dietz
Livingston N. Taylor, Jr.
2ND LIEUTENANTS:
Robert C. Cassibry
John B. Corbly, Jr.
Raymond Renola
James K. Taylor

RESERVE OFFICERS

CAPT. Frank F. Heger
1ST LIEUTENANTS:
John F. Taylor
Herbert W. Hartung
Howard O. Holt
Mahlon D. Hickman
Roy R. Gardner
John J. Banker
Laurence R. Bolen
2ND LIEUTENANTS:
Merrill F. Van Sickle
Basel B. Van Schuyver
Lawrence H. Kahn
Frank Gensberg
Edward B. Hrdlicka
William S. Lancey
Joseph H. Batjer
Charles F. Dwyer
Frederick C. Doyle, Jr.
James K. Chenault
Vitaly Kovalevsky
Paul A. Kirk
Winfred W. Brown
Samuel W. Lipscomb
Herbert H. Champlin
Joel E. Bowman

37TH FA BN.

Ft. Sam Houston, Texas

LT. COL. Sherman L. Kiser
MAJOR Julius E. Slack
1ST LT. Peter J. Kopesak
1ST LT. Daniel H. Heyne
2ND LT. Donald V. Bennett
2ND LT. Urey W. Alexander
2ND LT. James W. Milner

RESERVE OFFICERS

1ST LIEUTENANTS:
William K. King
L. Louie B. Green
Wayne W. Heckler
George J. Condas
Robert H. Holloman
Leonard F. Giesecke
Lee M. Sommers
Atwell L. Batjer, Jr.
Earl Hurt
Calvin F. Finn
2ND LIEUTENANTS:
Robert E. Mitchell
Charles B. Campbell
Frederick W. Everts
Orville R. Gallahan
Jack W. Ervin, Jr.
Sidney J. Hurst
Charles W. Walker, Jr.
Vestal D. Avery
James Y. Alexander
Edmond S. Aldredge
John W. Floore
Charles R. Baugh

38TH FA BN.

Ft. Sam Houston, Texas

LT. COL. John S. Mallory
CAPT. Wm. H. Bertsch, Jr.
CAPT. Thomas J. Counihan
1ST LIEUTENANTS:
Claude L. Shepard, Jr.
Ralph J. Hanchin
2ND LIEUTENANTS:
Robert T. Cassidy
Jerry S. Addington
Francis E. Kramer
Zim E. Lawhon, Jr.
Harry B. Lane

RESERVE OFFICERS

1ST LIEUTENANTS:
Muryl G. Crossley
Stephen D. Crouch, Jr.
Claud E. Hooks
2ND LIEUTENANTS:
John E. Brumm
Edward B. Armstrong
Samuel E. Kelly
Ivy Grizzelle
Thomas M. Brett
Gerald H. Galbreath
Theatus E. Greeson
Ed. R. Halbach
William S. Jackson
John H. Edwards
Curtis M. Jester
Henry M. Qualtrough

Carl E. Baty

Louis McK. Dickson

HQ, BTRY, 3D DIV. ARTY.

Ft. Lewis, Wash.
COLONEL Kenneth S. Perkins
MAJOR John J. Burns
MAJOR Kenneth S. Sweany
CAPT. Samuel H. Fisher

RESERVE OFFICERS

1ST LT. Doran A. Huston
2ND LIEUTENANTS:
Morris H. Milner
Walter H. Skielvig
Dick A. King

9TH FA BN.

Ft. Lewis, Wash.

LIEUTENANT COLONEL:
Harold C. Vanderveer
MAJORS:
Charles S. Whitmore
Franklin H. Canlett
Jesse J. France
John T. Binns
William E. Watters
CAPTAINS:
Norman E. Poinier
Frederick D. Atkinson
Thompson B. Maury
Kermit Le V. Davis
Joe G. Surrat
1ST LIEUTENANTS:
Walter Kerwin, Jr.
James F. Roberts
Donald E. Slaughter
Avery W. Masters
2ND LIEUTENANTS:
John H. Beiser
Burdett E. Haessly
Jene E. Mills

RESERVE OFFICERS

1ST LIEUTENANTS:
Hugh M. Latimer
Robert W. King
Wade E. Hardie
William H. Myers
George W. Riehl
Samuel J. Pearson
George T. Porter
Doran H. Huston
John T. Lorenz
Karl Connor
William J. Lewis
John F. Stein
Thomas H. Fraser
Mendell M. Bell
2ND LIEUTENANTS:
Donald E. Hoffmeister
Ernest T. Barco
Thomas E. Shaughnessy
Howard E. Ovans
John G. Georgelas
Beryl L. Boyce
Walter K. Wojcik
Norman V. Cable
Ernest T. Grover
Stanley Armstrong
Sterling E. Larson
Lloyd I. Duffin
Russel K. Mace
Douglas H. Sullivan
Charles H. Rice
Roy C. Edgerton
James C. Truscott

10TH FA BN.

Ft. Lewis, Wash.

LIEUTENANT COLONELS:
William R. Philp
Wesley C. Brigham
MAJORS:
George B. McReynolds
James P. Barney, Jr.
CAPTAINS:
Albert O. Connor
Gerald F. Lillard
Robert A. Ports
1ST LT. John A. Berry
2ND LIEUTENANTS:
Robert D. Hall
James R. Wendt

RESERVE OFFICERS

1ST LIEUTENANTS:
Clarence A. Bitts
Robert S. Leon
Edward P. Donnelly, Jr.
Joseph E. Vincent
Robert Bernhard, Jr.
John P. Taylor
Chet D. Hirsch
Gail M. Dyer
John W. Jennings
George C. Chadwick, Jr.
William Woodford
2ND LIEUTENANTS:
Joseph O. Bettridge
Norman P. Barnes
Gus C. Francis

Allen G. Pixon
Isaac Lee
Jack P. Bathrick
Anthony C. Abel
James B. Allison
Charles Bogner
Gerald S. Teudt
Paul A. Fraser
Calvin M. Emeris

**39TH FA BN.
Ft. Lewis, Wash.**

LT. COL. Paul C. Boylan
MAJORS:
Robert S. McClenaghan
George E. Mitchell, Jr.
CAPTAINS:
Richard H. Harrison
C. Coburn Smith, Jr.
1ST LT. John D. Byrne
2ND LIEUTENANTS:
George F. Carter
Wendel J. Coates

RESERVE OFFICERS

1ST LIEUTENANTS:
Bill N. Hay
Clarence L. Branton
Bertram L. Nash
Thomas M. Wilkes
Allen J. Watson
William A. Thurman
John W. Anderson
2ND LIEUTENANTS:
Fred P. Stevens
Morris C. Stout
William C. McIntyre
Kenly W. Whiteclock
Jay W. Frederickson
Ernest M. Featherstone
Edwin A. Frank, Jr.
John J. Welch
Hugh A. Scott
Glenn A. Cloward
Clarence H. McCourt
James A. Blodgett
William F. Kennedy

41ST FA BN.

Ft. Lewis, Wash.
LT. COL. Robert W. Yates
MAJORS:
Alfred P. Kitson
Edward M. Taylor
CAPTAINS:
Howard J. John
Franklin P. Miller
Clyde R. McBride
2ND LIEUTENANTS:
Christopher C. Coyne
Harry A. Stella
Wright A. Scoville

RESERVE OFFICERS

1ST LIEUTENANTS:
Calvin M. Kempf
Louis P. Toomey
Paul T. Rigby
Edward C. Many
Garnet H. Downing
Edward C. Robertson
Barney D. White
Clarence L. Shewalter
2ND LIEUTENANTS:
John F. Mitchell
Gordon H. Peck
John P. Ransom
Charles H. Wilken
Joseph H. Wherry
Carl W. Schaad
Edward E. Girzi
Thomas C. Ferguson
Eugene J. Holmes
Robert E. Coffin
Lyman K. Peterson
Willard B. Young

**HQ. BTRY, 4TH DIV. ARTY.
Ft. Benning, Ga.**

MAJORS:
Edward J. McGaw
John S. Winn, Jr.
CAPT. Robert G. Crandall
1ST LIEUTENANTS:
Keith M. Hull
John Ray
2ND LT. John C. Nickerson, Jr.

RESERVE OFFICERS

CAPTAINS:
James E. Oyler
James Audie Bryant
1ST LT. Marvin Darlo Brown
2ND LT. Francis C. Enzbrenner

20TH FA BN.

Ft. Benning, Ga.
LIEUTENANT COLONELS:
C. G. Helmick
H. B. Dawson
MAJORS:
J. M. Whistler

R. S. Marr
CAPTAINS:
J. G. Anding
E. J. Murphy
C. W. Land
G. C. Duehring
R. A. Hewitt
1ST LT. E. B. LEEVER
2ND LIEUTENANTS:
J. P. Strauss
G. Mayo, Jr.

RESERVE OFFICERS

CAPT. C. W. O'Hern
1ST LIEUTENANTS:
R. B. Prater
E. M. Long
G. B. Anchors, Jr.
R. P. Sledge
J. E. Jenkins
J. C. Toscano
W. Thomas, Jr.
S. L. Davis
A. T. Terry, Jr.
2ND LIEUTENANTS:
A. R. Sylvester, Jr.
R. D. Bailey
J. E. Stearns
H. Hillman
R. S. Hewitt
J. S. Cook
W. P. Mason
J. B. Killgore
R. G. Thomas
S. W. Smith

29TH FA BN.

Ft. Benning, Ga.
LIEUTENANT COLONELS:
Julian F. Barnes
Clifford B. King
MAJORS:
John M. Lentz
Walter J. Klepinger
CAPTAINS:
John R. Pitman, Jr.
Robert Q. Brown
Howard M. Batson, Jr.
1ST LIEUTENANTS:
Joel F. Thomason
Ulrich G. Gibbons
2ND LT. Jordan J. Wilderman

RESERVE OFFICERS

1ST LIEUTENANTS:
Hugh C. Logan
Jack M. Christ
Harry Baers
2ND LIEUTENANTS:
Frederick C. Zumsteg
Joseph F. Keithley
Frank Duda
Dan M. Friel
Herbert L. Peavy
Miles A. Warren
Samuel W. Scarborough
William E. Miner

42D FA BN.

Ft. Benning, Ga.
LT. COL. Edwin A. Zundel
MAJORS:
Walter R. Hensey, Jr.
Rochester F. McEldowney
CAPTAINS:
Charles L. Booth
Thomas I. Edgar
1ST LIEUTENANTS:
Clarence E. Seipel, Jr.
Edward M. Geary
Thomas M. Crawford
2ND LIEUTENANTS:
Sanford P. England
Misha N. Kadick

RESERVE OFFICERS

1ST LIEUTENANTS:
Jackson P. Serfas
Edward L. Bonney
Fred W. Urick
Francis A. Chilson
Harry L. Hooper
Lindley L. Hatfield
Charles S. Bentley, III
2ND LIEUTENANTS:
Gerhard V. Kellner
Harry E. Cox
Francis M. Crist, Jr.
Vincent P. Viscomi
John Overton
George W. Bercik
Elton W. Manning

44TH FA BN.

Ft. Benning, Ga.
LT. COL. George A. Pollin
MAJORS:
Charles C. Blanchard
Creswell G. Blakeney
CAPTAINS:
Wilmer G. Bennett
Claude A. Billingsley
1ST LIEUTENANTS:

Harold W. Browning
Harold M. Crawford
2ND LIEUTENANTS:
Edwin L. Hoopes, Jr.
Ford P. Fuller, Jr.

RESERVE OFFICERS

1ST LIEUTENANTS:
James D. Vance
Robert L. Mayer
Jadie H. Brown
Robert H. Hurd
2ND LIEUTENANTS:
Leon F. Kosmacki
Kendall O. Llewellyn
William L. Lett, Jr.
Robert O. Poulin, Jr.
Owen L. Sparks
Robert J. McClure, Jr.
Wallis A. Weaver
Archibald McN. White
Albert S. Jackson

**HQ. BTRY., 5TH DIV. ARTY.
Ft. Knox, Ky.**

MAJORS:
Otto L. McDaniel
Allen L. Keyes
CAPTAINS:
Stanley B. Bonner
Charles B. Hines

RESERVE OFFICER

2ND LT. Joseph W. Knott

21ST FA BN.

Ft. Knox, Ky.
LIEUTENANT COLONELS:
David E. Cain
MAJORS:
Ernest T. Hayes
Raymond G. Miller
George A. A. Jones
CAPTAINS:
Norman H. Smith
John P. Kaylor
Charles W. Raymond
Samuel W. Horner, II
William R. Calhoun
Charles B. Hines
Emmette Y. Burton, Jr.
James R. Johnson
1ST LIEUTENANTS:
William W. Beverley
William H. Corbett
Clark W. Mayne

RESERVE OFFICERS

1ST LIEUTENANTS:
Ernest G. Wilson
Charles J. Payne
Wendell C. Fields
Marcus W. Braatz
Francis M. Harris
Carl E. Bobo, Jr.
William B. Rose
John C. O'Haver
Clarence F. Golisch
2ND LIEUTENANTS:
Clare B. Conde
John M. Suardi
William E. Adams
Frederick B. Machol
Edward B. Downing
Raymond Poust, Jr.
Pierce W. Davis
Ernest G. Rothenberger
John W. Scott
John A. Low
Joseph W. Knott
James L. Currie
Edward J. Jun
Edwin M. Howison
Charles M. Hoge
Newton E. Armstrong
Charles B. Ballou

19th FA BN.

Ft. Knox, Ky.

46th FA BN.

Ft. Knox, Ky.
LT. COL. Douglas L. Crane
MAJOR William W. Webster
CAPTAINS:
John Meade
Joseph Massaro
Mahlon S. Davis
Wilbur E. Davis
Robert H. VanVolkenburgh, Jr.
Coy L. Curtis
Donald F. Buchwald
2ND LT. Wallace J. Hackett

RESERVE OFFICERS

2ND LIEUTENANTS:
David G. Black
Clarence R. Brewer
Garnet E. Buhner
Virgil L. Catlin
Casper G. Haas
Lewis A. Hall
Ludwig F. Hesse

Glen J. Lichtenberg
Robert P. May
John C. Suter
William E. Unger
Frank H. Wilcox
Joseph M. Williamson
Raymond J. Wilson, Jr.

50th FA BN.

Ft. Sheridan, Ill.
MAJOR M. Milton Potter
CAPTAINS:
Walter C. Stanton
Robert L. Brunzell
1ST LT. Ben W. Barterfield
2ND LIEUTENANTS:
Robert D. Offer
John Edward Nitsche
Bertil A. Johnson
Cornelius A. Murphy

RESERVE OFFICERS

1ST LIEUTENANTS:
Albert William Albrecht
Jack M. Copeland
Lyman Beecher Tichenor, Jr.
Leo Burdzeus
Levett A. Peters
2ND LIEUTENANTS:
Clyde Woodrow Jones
Edward James Callshan
William L. Shade
Lawrence E. Rack
David S. Butler
Frank G. Woodin
J. Franklin Shaefer
John E. Tryon
Clarence F. Sills
Samuel R. Blackman
David S. Shia
Peter G. McCadden
James D. Edwards
William T. Hatter
Benjamin Alan Swartz
Robert Sumner Brooks
James Beal Kelly
Fred Frank Andrt
Thomas Hamlet Cooper
Charles Jean Lutz
John Lee Lynch
Lewis M. Simon
Paul T. Newman
Ross E. Clark
George S. Polich
Hugh A. Hurt
John Leo Brown

HQ. BTRY., 6TH DIV. ARTY.

Ft. Des Moines, Iowa
COL. Richard C. Burleson
LT. COL. Wendell L. Bevan
CAPT. Edward S. Berry

RESERVE OFFICERS

1ST LIEUTENANTS:
Meyer L. Levey
Thomas M. Esmond
2ND LT. Harold L. Newel

80TH FA BN.

Ft. Des Moines, Iowa
LIEUTENANT COLONELS:
Clift Andrus
Sidney G. Brady
Howard W. Turner
MAJORS:
William J. Epes
Francis W. Crary
Alfred Vepsala
Valentine R. Smith
CAPTAINS:
James J. Deery
Richard W. Mayo
Charles W. Stratton
John J. Davis
Charles P. Westpheling
Herbert C. Plapp
Thea L. Lipscomb
William A. Enemark
1ST LT. Homer E. Miller
2ND LT. Robert C. Ingalls

RESERVE OFFICERS

1ST LIEUTENANTS:
Theodor C. Bland
John A. Rush
Daniel D. Stok
Paul E. Pulliam
Claude Headen, Jr.
Donald L. Coates
Earl W. Peak
2ND LIEUTENANTS:
William J. Randolph
James R. Wilson
Joseph G. Wogen
George H. Perry, Jr.
Richard J. Bestor
George A. Reed
Robert E. Batchelor
Carl L. Proescholdt
Jess E. Newland
Alexander J. Irwin
Philip A. Baird

Leonard C. Cundiff
Charles H. Horn
Robert A. Olson
Henry D. Peterson
Harry A. Thomson
John H. Vaughan
Leo Weiner
Charles G. Whitley
Jean A. Jack
John D. Spaulding

1ST FA BN.

Ft. Sil, Okla.
LIEUTENANT COLONEL:
Francis T. Armstrong
MAJOR Charles H. Swartz
CAPTAINS:
Logan Clarke
Horace L. Sanders
Harry J. Hubbard
John E. Barlow
Robert H. Safford
1ST LT. John B. Hamilton

RESERVE OFFICERS

1ST LIEUTENANTS:
Thoms F. Fulbright
Jerome A. McDavitt
Carl A. Wyers
Winston A. Jones
William P. Woodruff
William L. Brodersen
Charles W. Ware
2ND LIEUTENANTS:
LeRoy W. McDonald
Jack B. Fritts
Lee R. Kunce
French J. Berry
William N. Bassett
William L. Beachly
Francis J. Raymond
David H. Bridges
Marion S. Owens
Gail C. Aldridge
George A. Hackleman
Jimmie G. English

51ST FA BN.

Ft. Sil, Okla.
LIEUTENANT COLONEL:
Alexander S. Quintard
MAJORS:
George D. Vanture
Joseph L. Hardin
CAPT. Malin Craig, Jr.
1ST LIEUTENANTS:
Earl L. Barr
Clement W. Crockett
John G. Brimmer
Edgar J. Ingmire
2ND LIEUTENANTS:
Vester M. Shultz
Hunter L. Stockton

RESERVE OFFICERS

1ST LIEUTENANTS:
Louis A. Shone
John C. Dinsmore, Jr.
James W. Kennedy
John A. Todd
Ralph W. Wolvorton
Sidney L. Wade
Charles L. Pain
James B. Permenter
Albert R. Larson
2ND LIEUTENANTS:
Lawrence E. Heyenga
William T. Howell
Arley L. Outland
Dale J. Rutland
Frank H. Schaller, Jr.
Harold E. Hill
Ivy P. Crane

53D FA BN.

Ft. Sil, Okla.
LT. COL. William E. Corkill
MAJORS:
Howard W. Brimmer
Albert R. S. Barden
CAPTAINS:
Franklin G. Smith
Dean A. Herman
Charles M. Peeke
Everett G. Hahney
1ST LT. George G. O'Connor

RESERVE OFFICERS

1ST LIEUTENANTS:
Cecil H. DeKraker
Homer C. Blake
Glenn A. Powell
Troy H. Shelby
John F. Hunt, Jr.
Joseph G. Rucks
Joseph D. Gilmore
Jack K. Walker
Bob T. Hughes
Merton E. Munson
Joe B. Walcher
John H. Kublman
Paul D. Smith
Trimble B. Latting

2ND LIEUTENANTS:
Robert P. Ronne
John R. Callaway, Jr.
John D. Adams
Paul A. Allbright
Alex J. Norbut

HQ. BTRY., 7TH DIV. ARTY.

Ft. Ord, Calif.
LT. COL. R. G. Barkalow
MAJORS:
W. C. Huggins
Paul A. Reichle
G. R. Scithers
CAPT. R. B. Firehock

RESERVE OFFICERS
2ND LIEUTENANTS:
C. I. Zucker
J. R. Olson

31ST FA BN.
Ft. Ord, Calif.

LT. COL. Ray W. Barker
MAJORS:
Walter H. DeLange
John L. Graves
Joseph A. Cella
CAPTAINS:
Ernest T. Owens
Roger W. Goldsmith
Willis W. Whelchel
Claude F. Burbach
Harald S. Sundt
John C. McCawley
1ST LT. Donald C. Beere
2ND LIEUTENANTS:
Jacob F. Mynderse
Ariel W. Neilsen
William H. Mullin
Robert T. Tuck
John J. Kennedy

RESERVE OFFICERS
1ST LIEUTENANTS:
Vernard O. Davis
Hubert P. Yamell
Stanley C. Andersen
Thomas J. Badger
John C. Breedlove
Charles W. Coleman
Herbert E. Kessler
James H. Marsteller
Clifford H. Schlesselman
Martin E. Redfield
Edward J. Fleischer
Theodore I. Bernstein
2ND LIEUTENANTS:
Roderick K. Henry
James F. McKenna
Richard H. Schweitzer
George D. Shambrook
Dyson C. Sweager
Robert S. Walker
Andrew D. Shoemaker
Grant W. Buswell
Marlon L. Ellison
Grant F. Nelson
Robert S. Wright

76TH FIELD ARTILLERY
Ft. Ord, Calif.

COL. John E. Sloan
LIEUTENANT COLONELS:
Norman J. McMahon
Clifford B. Cole
MAJORS:
Charles A. Pyle
Walter D. Webb, Jr.
Edwards M. Quigley
Herbert B. Endernton
William C. Lucas
CAPTAINS:
Edward L. Andrews
William N. Gilmore
Harold S. Isaacson
Frank V. Goodell
Phillip H. Draper, Jr.
William T. Kirt
Edwin S. Hartshorn, Jr.
Frederick W. Ellery
William J. Daniel
William J. Ledward
Percy T. Henningar
Ralph R. Ganns
Lukas E. Hoska, Jr.
Terence P. Finnegan
1ST LIEUTENANTS:
Murray E. Sparks
Robert H. Camp
Vernon G. Gilbert
Arthur W. Reed
Sylvan P. Lay

RESERVE OFFICERS
CAPT. John S. Crafts
1ST LIEUTENANTS:
Joseph R. Webb
Edward H. LaSalle
John V. Rathbone
Sydney E. Sacerdote
Albert A. Smith
James E. Grasse
Erdie O. Lansford

Eric M. Von Hurst
Joseph E. Terry
James D. Donlon, Jr.
John J. Watt, Jr.
Charles L. Evans
Ivan W. Weikel
Robert C. Harnly
Richard T. Benson
Roscoe W. Groom, Jr.
George S. Jackson
George H. Keck
Byron D. Magee
Charles H. Olson
Charles E. Welsh
Herbert W. Winifree
John M. Loupe
Jess M. Harris, Jr.
2ND LIEUTENANTS:
Joseph A. Schwartzman
Orville W. Pierce
Kenneth V. Deans
Floyd L. Glauser
Hix W. Meier
Darwin T. Bauman
John S. O'Neill, Jr.
Boyd M. Wales
Ralph E. Magnuson
Abiel T. Sharp
Robert A. Stanis
John E. Murphy
Edward L. Walker
Francis J. Carsner
Robert H. Corgan
John L. West, Jr.
James M. Johnson
Robert P. Muir
Charles L. Allen, Jr.
Philo M. Baumgartner
Edward B. Elliott
Joseph P. Greenwood
David S. McCurdy
Roland C. McNaughton
Alexander Nisbet
Orrison M. Flatberg
John W. Elder
Elmer S. Shaler
Ferrel J. Ogilvie
Ralph H. Bowen
George V. Caldwell
Leonard W. Golden
Edward J. Johnson
George L. Lindahl
James A. Bollier
Edward J. Raleigh, Jr.
Earl R. Sims
Walter G. Cadmus
George L. Reid
Lee R. Strickler
George B. Glover
Rex H. Light
Robert G. Davey
Ashley A. Blinn
Howard H. Amos
Norman C. Fulberg
Harold D. Jensen
Paul A. Loop
Paul M. Nestler
George H. Harrington
Kyle T. Ballantyne

HQ. BTRY., 8TH DIV. ARTY.
Ft. Jackson, S. C.

28TH FA BN.
Ft. Jackson, S. C.
LIEUTENANT COLONELS:
W. E. Burr
Charles W. Gallaher
Albert C. Stanford
MAJORS:
Frank Camm
Edward A. Routheau
Mark H. Doty
Chester E. Sargent
Lloyd M. Hanna
Joseph V. Phelps
CAPTAINS:
William P. Ennis, Jr.
John P. Woodbridge
Thomas C. Wood
Eugene E. Nixon
Alphonse Greene
Alexander Graham
Donald C. Dumford
Garrison Coverdale
Lindsey R. Wingfield
1ST LIEUTENANTS:
Charles J. Blake
Gregory L. Higgins
Spencer A. O'Brien
Gordon C. Reardon
Earl R. Kindig

RESERVE OFFICERS
1ST LIEUTENANTS:
Earl T. Eberhart
William D. Parker
Hugh R. Alison
Harry M. Feigin
Harrison H. Finlayson
William H. Simmones
Kenneth G. Taylor
Hampton D. Williams

2ND LIEUTENANTS:
A. S. Michel
Lester S. Shockner
John E. Carter, Jr.
Burrell C. Hassett
Harold L. Hughes
Whitney A. Langlois
Jack R. Lichte
William H. Smith
James D. Williams

83D FIELD ARTILLERY
Ft. Benning, Ga.

HQ. BTRY., 9TH DIV. ARTY.
Ft. Bragg, N. C.
COL. G. H. Franke
LT. COL. J. W. Faulconer, Jr.
MAJORS:
John Hinton
Bryan Evans
CAPTAINS:
Harry Van Wyk
C. L. Boyle
R. C. Gildart

RESERVE OFFICERS
LIEUTENANTS:
M. S. Pitts
E. B. January

34TH FA BN.
Ft. Bragg, N. C.

LT. COL. Douglas J. Page
MAJORS:
Alexander T. McCone
Charles W. Cowles
CAPTAINS:
Russell T. Finn
Richard K. McMaster
Francis C. Foster
Robert C. White
LeRoy Lutes, Jr.
John W. Browning
1ST LIEUTENANTS:
Alvar B. Sundin
Francis H. Patrick
James S. Billups
Lewis D. Vieman
CHAPLAIN:
Ariel H. Aechtermann

RESERVE OFFICERS
1ST LIEUTENANTS:
Neil D. Cox
Marvin S. Pitts
Forrest F. Barefoot
Basil Shirley
Isaac Q. Rayburn
Ed N. Carpenter
Silas Gasset
William A. Lucas
Henry C. Sowders, Jr.
William A. Pacey
Hugo G. Goetz
Claude M. Stephens
James L. Widger
2ND LIEUTENANTS:
Loren E. Signs
Fred. M. Frey
William J. Hanks
Harold H. H. Kolb
Roy A. Kane, Jr.
Elmer T. Stephens
William T. LaGrone
Ralph L. Steen
John W. Salyards
John W. Kayser
William H. Hatina

26TH FA BN.
Ft. Bragg, N. C.
LT. COL. John H. Keatinge
MAJORS:
Raymond T. Tompkins
Robert F. Hallock
CAPTAINS:
Conrad G. Follansbee
Roy E. Hattan
Randolph B. Hubard
Elmer B. Kennedy
1ST LIEUTENANTS:
Joseph R. Reeves
Albert R. Brownfield

RESERVE OFFICERS
1ST LIEUTENANTS:
James W. Gorman
Sherman E. Hively
William L. Lockett
Robert C. Williams
Evans G. Nash
Sam L. Davies
Franklin W. Lamirand
Josiah J. Harrison
Arthur L. Mason
Alfred E. Graham
2ND LIEUTENANTS:
Richard L. Duckwall
Ancle S. Johnson
Howard F. Casey
Allie V. Peoples
David Brooks
George W. Frank

Walter O. Beets

60TH FA BN.
Ft. Bragg, N. C.
LIEUTENANT COLONEL:
Arthur McK. Harper
MAJORS:
Escalus E. Elliott
Harvey K. Palmer, Jr.
CAPTAINS:
F. Scoon Gardner
Thomas Truxtun
Alexander R. Sewall
John C. Strickler
1ST LIEUTENANTS:
Harry M. Myers
Ted L. Sawyer

RESERVE OFFICERS
1ST LIEUTENANTS:
William P. Brooks
Richard E. Buchanan
Charles M. Carder
Nazaire LeBlanc, Jr.
Irvin P. Murray
Gerald D. Shepherd
James P. Smith
Evert E. Stong
Roscoe A. Weston
John E. Wurst
2ND LIEUTENANTS:
Glenn F. Elliott
Curtis Fritchman
Earle E. Garrison
Rex A. Hochdoerfer
Donald M. Kruger
Frank E. Lee
George S. Thurtle
Edward R. Wagner

84TH FA BN.
Ft. Bragg, N. C.

MAJORS:
E. C. Norman
Louis W. Haskell
CAPTAINS:
Frank S. Kirkpatrick
Joris B. Rasbach
Charles A. Wiseloge
Frank C. Norvell
1ST LT. Meredith E. Allen
2ND LT. H. W. W. Lange
RESERVE OFFICERS
1ST LIEUTENANTS:
LeClair R. Maricle
Justin W. Stoll
Orville E. Langley
Ollie J. Blankenship
William F. McGonagle
William W. O'Neil
Kenneth M. Robinson
Roy Hollingsworth, Jr.
Edward L. Hamilton
Frank C. Hamilton
William S. Behrick
2ND LIEUTENANTS:
Carl L. Lantz
Hugh P. Stubbs
John W. Cattle
Nathaniel B. Smith
Lowell D. Gregory
Morton G. Freed
Neal C. Galloway

82D FIELD ARTILLERY
Ft. Bliss, Texas

LT. COL. Earl A. Hyde
MAJORS:
Clarence F. Murray
Thomas S. Gunby
Albert J. Hastings
Edmund W. Searby
John B. Horton
CAPTAINS:
Charles D. Palmer
Edward G. Farrand
Alex N. Williams, Jr.
Arthur L. Cobb
Duncan S. Somerville
John R. Brindley
John R. Brindley
Marcus Tague
Samuel K. Yarborough, Jr.
Douglass P. Quandt
Donald C. Kelley
1ST LIEUTENANTS:
William T. Weissinger
John C. Damon
Hulen D. Wendorf

RESERVE OFFICERS
CAPT. Andrew J. Balko
1ST LIEUTENANTS:
Carl N. Chambers, Jr.
Ernest L. Massad
Gavin L. Muirhead
Ralph H. Elliott
John A. Wire
Leon Bieri
Cecil H. Davidson
Harry F. Lambert
Charles A. Hope
2ND LIEUTENANTS:
George C. Tompkins

Paul L. DuNard
Truett W. Flache
William G. McNeill
Bunn D. Hale
Bill J. Bishop
LeRoy C. Stump
James D. Groshong
Robert J. Barth
Wilbert J. Irwin
Robert J. Woodard
Austin J. Brummitt
Kenneth E. Mirise
James V. Sanden
Marshall C. Spradlin
James M. Hedrick

3D FA (1ST BN.)
Ft. Riley, Kan.

4TH FA BN.
Ft. Bragg, N. C.
LT. COL. Reese M. Howell
MAJORS:
William B. Walters
Robert R. Raymond, Jr.
Edward M. Edmonson
Stuart L. Cowles
Francis T. Dodd
CAPTAINS:
George E. Lynch
Ralph C. Cooper
Charles R. Murray
James E. Beery
Jonathan O. Seaman
Frank A. Osmanski
Sanford W. Horstman
James L. Frink, Jr.
2ND LIEUTENANTS:
James Taylor, Jr.
George P. Winton, Jr.
Samuel M. Patten
Clarence W. Clapsaddle, Jr.
Robert M. Brewer
Richard S. Lovering, Jr.

RESERVE OFFICERS
1ST LIEUTENANTS:
James F. McClendon
James P. Hines
Leo B. Donivan, Jr.
Howard R. Devore
Henry G. Mitchell III
Jacob G. Parker
Frederick A. Jones
Fred A. Chapman
Woodrow W. Echols
Armand Mayville, Jr.
Lowrie W. Brown
Edward P. Bailey
Karl S. Hall
Grover G. McGowin
Harry C. Orme
Adrian C. May
Larry G. Semmens
Robert Robbins
Gordon A. Moon, II
Augustus L. Maxwell
2ND LIEUTENANTS:
Whitnell B. Small
Robert L. Seiltn
Robert R. Hartsell
Lemuel G. Downs
Albert H. Wohlers
Bristow S. Hopper
John W. Howze
Julian Kaufmann
Mahlon B. Huffman
Maynard E. Caster
Richard R. White
William H. Barnard
Salvador F. Taranto
Kenneth F. Schenkel
Norman K. Arnold

99TH FA (1ST BN.)
Edgewood Arsenal, Md.

LT. COL. George P. Hays
MAJOR Kenneth L. Johnson
CAPTAINS:
Hubert M. Cole
David F. Brown
Philip C. Wehle
William O. Darby
George Blackburne
Edgar A. Clarke
2ND LT. Walter A. Edens

RESERVE OFFICERS
1ST LIEUTENANTS:
Temple S. Ryland
Howell C. Epperly
George R. Lydick
Joseph E. Stopp
William W. Weiland
2ND LIEUTENANTS:
Lewis B. O'Hara
Delmar R. Frazier
Jack E. Howe
Edgar E. Howell
James M. Hustedon, Jr.
Charles E. Tennesser, Jr.
John G. Hundley
Albert V. D. Carr

Charles O. Carroll
James F. Martin
Harry B. Brown
John R. Stutts
William E. Dressler

99TH FA (2D BN.)

Ft. Lewis, Wash.
LT. COL. David L. Ruffner
MAJOR Philip H. Enslow
CAPTAINS:
Oliver M. Barton
Raymond C. Conder
Douglas C. McNair
Truman W. Carrithers
Charles L. Williams
James P. Pearson, Jr.
1ST LIEUTENANTS:
Robert M. Williams
Leonard G. Jewett

RESERVE OFFICERS

1ST LIEUTENANTS:
Samuel A. Felker
Paul D. Ferguson
Albert R. Sewall
Paul S. Brown
2ND LIEUTENANTS:
Edwin F. Wadleton
Wayne C. Cook
William Jennings
Vaughn R. Moss
Jack M. Murphy
Bert G. Shaw

6TH FA (1ST BN.)

Ft. Bragg, N. C.
LIEUTENANT COLONEL:
Harold W. Blakeley
MAJOR Francis A. March 3d.
CAPTAINS:
Wellington A. Samouce
Robert C. Lawes
James T. Dawson
DeVere R. Armstrong
Bernard W. McQuade
Berton E. Spivy, Jr.
1ST LIEUTENANTS:
Edgar J. Jordan
Richard T. Bowie

RESERVE OFFICERS

1ST LIEUTENANTS:
John H. Stokes
John H. McElroy
Jake G. Lyons
Loran Roop
2ND LIEUTENANTS:
Robert C. Groves
Henry H. Blair
Arthur F. Watson
William L. Sabella
John M. Cagney
Thomas N. McLean
Willis S. Riddick, Jr.
John E. VanSant

16TH FA (1ST BN.)

Ft. Meyer, Va.
MAJORS:
Peter P. Rodes
Alfred E. Kastner
CAPTAINS:
Myles W. Brewster
Horace K. Whalen
James H. Skinner
Carl Darnell, Jr.
Orville N. Stokes
1ST LT. Frank W. Norris
2ND LT. John F. Twombly

RESERVE OFFICERS

1ST LIEUTENANTS:
Thomas R. McAndrew
J. C. Schaaf
Thomas St. J. Arnold
Erwin H. Shupp
Jack B. Hardin
Kenneth A. VanAntwerp
Howard D. Dodge
John W. Childress
William R. Landrum
Mont Hubbard
James T. Avery, Jr.
Roy S. Duhart
Lawrence C. Sentker
2ND LIEUTENANTS:
John T. Alstrom, Jr.
Robert J. Faust
Albert W. Hanna
Howard O. Golladay
Douglas W. Carr
Alfred R. Barbour
Peter F. Genthner, Jr.
Richard A. Edwards, Jr.
John B. Nadzam

79TH FA BN.

Ft. Bragg, N. C.
LT. COL. Harold A. Cooney
MAJOR Roger M. Wicks
CAPTAINS:
Perry W. Brown
Theodore W. Parker

Warren H. Hoover
Dale M. Means
1ST LT. Samuel K. Eaton
2ND LT. Cecil H. Strong

RESERVE OFFICERS

1ST LIEUTENANTS:
Otis S. Moreman
Joy K. Sprowles
Robert H. Neptune
Aubrey N. Alredge
Hubert W. Shurtz
George R. Owen
John S. Neel
Herbert C. Hershey
2ND LIEUTENANTS:
Milton N. Neyer
Worth S. McCue
Elmer I. Caldwell
Arthur W. Rifenburgh
William H. Byrd
John K. Henderson

18TH FIELD ARTILLERY

Ft. Sill, Okla.
COL. Charles P. George
LIEUTENANT COLONELS:
John O. Hoskins
Theodore L. Futch
Henry P. Gantt
Charles R. Doran
MAJORS:
William P. Blair
William D. McNair
Marion P. Echols
Walter T. O'Reilly
Eugene M. Link
Lemuel Mathewson
CAPTAINS:
Francis M. Day
Joseph R. Burrill
John H. Sampson, Jr.
George A. Graybe
Robert P. Clay
John E. Theimer
John E. Hayden
N. Landon Head
Samuel E. Otto
Stacy W. Gooch
Thomas E. Wood
Thomas C. Foote
John J. Duffy
Carl W. Miller
Harry H. Critz
William M. Connor, Jr.
Wilbur M. Griffith
1ST LIEUTENANTS:
Charles H. Anderson
Clarence C. Barrage, Jr.
Edward A. Bailey
William A. Sundlof
James L. Collins
Albert F. Rollins
William C. George
2ND LIEUTENANTS:
Charles P. Brown
Ben L. Burdick

RESERVE OFFICERS

1ST LIEUTENANTS:
Thomas V. Munson
Honald N. Maidt
Lewis V. Smith
Lawrence L. LaSasso
Glenn M. Stinson
George Goetz
Gordon G. Murphy
Fred V. Shurtlew
Paul A. Weston
Russell G. Jones
Lawrence R. Ware
Ronald R. Hermes
Ralph O. Brown
2ND LIEUTENANTS:
Edward F. Totton
William A. Smith, Jr.
Tilden D. Brafford, Jr.
Philip M. Turner
Victor L. Boling
Logan R. Rappe
Leo F. Johnson
James L. Beard
Harlan R. Emerson
James W. Guest
Joseph R. McGuire
Max E. Billingsley
Fred F. White
Marion W. Tiller
Carl A. Reid
Joseph D. McWherter, Jr.
Charles W. Mooney
Elmer R. Long
Dwight L. Dunlap
Leon N. Gilbert, Jr.
Jesse G. Reneau

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Lawrence R. Ware
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Philip M. Turner
Victor L. Boling
Logan R. Rappe
Leo F. Johnson
James L. Beard
Harlan R. Emerson
James W. Guest
Joseph R. McGuire
Max E. Billingsley
Fred F. White
Marion W. Tiller
Carl A. Reid
Joseph D. McWherter, Jr.
Charles W. Mooney
Elmer R. Long
Dwight L. Dunlap
Leon N. Gilbert, Jr.
Jesse G. Reneau

11TH BRIG. HQ. BTRY.

Schofield Barracks, T. H.
LIEUTENANT COLONEL:
John Keliher
MAJORS:
Floyd R. Brisack
Hugh F. Conrey

Robert R. Hood
Charles P. Jones
CAPTAINS:
Robert M. Burnett
Ralph R. Mace
Robert W. Van de Velde

8TH FIELD ARTILLERY

Schofield Barracks, T. H.
COL. Donald C. McDonald
LIEUTENANT COLONELS:
Casey H. Hayes
Stanley E. Reinhart
Harold H. Ristine
Dominic J. Sabini
John M. Sanderson
MAJORS:
Raynor Garey
Fred B. Lyle
Charles D. Calley
Wilbert E. Shallene
William A. D. Thomas
George E. Burritt
CAPTAINS:
Samuel A. Dickson
Robert C. Ross
Stewart Yeo
James B. Evans
1ST LIEUTENANTS:
Iving W. Jackson
Walker R. Goodrich
William Y. Frenzel
Robert B. Franklin
Robin G. Speiser
John K. Neff
Charles D. Hartman, Jr.
William C. Westmoreland
Donald R. Bodine
Thomas C. Compton
2ND LIEUTENANTS:
Francis W. Jenkins
John F. Brownlow, Jr.
Joseph H. Stangle
Clifton F. von Kann
Frank G. White
Charles Cantrell

RESERVE OFFICERS

1ST LT. John K. Hubbard
2ND LIEUTENANTS:
John S. Benson
Merrill G. Hatch
Clark M. Thaler
George M. Cummins
George F. Seacat
George W. Grismore

11TH FIELD ARTILLERY

Schofield Barracks, T. H.
COL. Leonard C. Sparks
LIEUTENANT COLONELS:
Robert M. Bathurst
John C. Adams
Carlos W. Bonham
Stockbridge C. Hilton
B. Conn Anderson
MAJORS:
Thomas F. Keefe
Bertram C. Hayford
John M. Works
CAPTAINS:
John M. Burdge Jr.
James F. Collins
Charlie Wesner
Louis M. deL. de Reimer
James J. Heriot
Frederick R. Redden
William Taylor, Jr.
Arthur W. Blair
Gordon G. Warner
Gerald H. Duin
Edward A. Grove
Robert B. Partridge
John H. Daly
Joseph H. Hodges, Jr.
Arthur H. Baker, Jr.
Martin H. Burckes
1ST LIEUTENANTS:
Philip Y. Brownning
James R. Wergin
John E. Beier
Jaroslav Folda, Jr.
2ND LT. Dean M. Benson

RESERVE OFFICERS

2ND LIEUTENANTS:
Hilton Densley
Roger W. Snow
Paul McGiven
Frank J. Sabec
Julius Savanovsky
Floyd L. Glauser
James F. McKenna

13TH FIELD ARTILLERY

Schofield Barracks, T. H.
COLONEL:
Edwin R. Van Deusen
LIEUTENANT COLONELS:
Melvin L. Craig
Frank Roysie
Harry W. O. Kinnard
John H. Carraker

Parker G. Tenney
MAJORS:
Lonnie O. Field
Herbert E. Baker
George McK. Williamson, Jr.
Louis L. Lesser
CAPTAINS:
Thomas A. Jennings
Ernest V. Holmes
Richard J. Handy
David M. Perkins
Camden W. McConnel
Raymond S. Pratt
Edwin A. Walker
Francis Hill
Randolph W. Fletter
Donald C. Cubbison, Jr.
Duff W. Sudduth
William S. Penn, Jr.
David W. Hiester
Selwyn D. Smith, Jr.
Napoleon R. Duell
Chester V. Clifton, Jr.
Battle M., Barksdale
1ST LIEUTENANTS:
Vincent M. Elmore, Jr.
John C. Nickerson, Jr.
Lorenzo D. Adams
Thomas J. Bridwell
Walter E. Barker
2ND LIEUTENANTS:
Max L. Pitney
RESERVE OFFICERS
2ND LIEUTENANTS:
Kemuel K. Blacker
Allen F. Merritt
Virgil S. Naser
Wm. G. Stevenson
Robert E. Hand
Solomon P. McCurdy

2D FA (1ST BN.)

Ft. Clayton, C. Z.
LIEUTENANT COLONELS:
Horace L. McBride
Russell H. Dixon
MAJORS:
Charles R. Gildart
James M. Callicutt
William A. Wedemeyer
CAPTAINS:
George P. Harrison
Paul F. Oswald
Martin L. Green
Dwight E. Beach
1ST LIEUTENANTS:
Rudolph Laskowsky
Philip W. Long
2ND LIEUTENANTS:
George T. Metcalf
Dean E. Painter

RESERVE OFFICERS

1ST LT. Forbes R. McCreery, Jr.
2ND LIEUTENANTS:
Donald L. Snyder
Albert B. Rich
Paul F. Anthony
Jack K. Morrison
Alpheus M. Davis, Jr.

87TH FA (1ST BN.)

Ft. Davis, C. Z.
LT. COL. Michael C. Shea
CAPTAINS:
Alfred B. Devereaux
George M. Cole
Douglas G. Dwyre
James J. Winn
Daniel F. Walker
Harry W. Elkins
2ND LIEUTENANTS:
Warren R. King
Philip A. Hatten
Walter E. Winter
Robert E. Arn
Paul E. Alban
Ernest H. Lorenz, Jr.
RESERVE OFFICERS
1ST LIEUTENANTS:
Edward A. Raymond
Henry P. Walker, Jr.
Frederick B. Haddad
Albert E. Didier
2ND LIEUTENANTS:
William A. McFadden
James G. Ford

25TH FA (2D BN.)

Ft. Buchanan, P. R.
LT. COL. John A. Hoag
MAJORS:
Edward Herendeen
Francis H. Morse
CAPTAINS:
Charles D. Daniel
Harry C. Larter, Jr.
Richard D. Wentworth
John J. MacFarland
1ST LIEUTENANTS:
Edward G. Shinkle
Maddrey A. Solomon
Mathew V. Pothier

Luis F. Mercado
2ND LTS., T. 1ST LTS.:
Trevor N. Dupuy
Ladislaus C. Maslowski
William O. Gall
Frederick W. Hasselback, Jr.

81ST FA (1ST BN.)

Anchorage, Alaska
CAPTAIN:
John A. McFarland
1ST LIEUTENANTS:
Ferdinand J. Chesarek
John V. Roddy
Walter E. Brinker
Raymond W. Allen
Gene S. Edwards

PHILIPPINE DEPARTMENT**BTRY. A 23D FA; 24TH FA**

Ft. Stotsenberg, P. I.
COL. Louis R. Dougherty
LIEUTENANT COLONELS:
Albert R. Ives
Everett C. Williams
John G. Cook
Hanford N. Lockwood
Fidel V. Segundo
Salvador F. Reyes
MAJORS:
William W. Murphey
Charles B. Leimbach
Nicoll F. Galbraith
Henry J. D. Meyer
Edwin V. Kerr
Amado Martelino
Victor Z. Gomez
Alejandro D. Garcia
James R. Lindsay, Jr.
James V. Collier
CAPTAINS:
Lester J. Tacy
Frank F. Carpenter, Jr.
Winfield W. Scott
Raymond K. Quekemeyer
Harold J. Coyle
Frank A. Lightfoot
James E. Holley
Francis E. Fellows
Harry B. Packard
Alva R. Fitch
1ST LIEUTENANTS:
John W. Hansborough
Charles E. N. Howard, Jr.
William R. Thomas
Edward Kraus
Carl Baehr, Jr.
Philip G. Lauman, Jr.
Chester L. Johnson
Harold E. Marr, Jr.
2ND LTS., T. 1ST LTS.:
Roy C. Heflebour, Jr.
S. Llewellyn Barbour, Jr.
Kenneth C. Griffiths
Charles P. Samson
2ND LIEUTENANTS:
Paul D. Phillips
John J. Murphy, Jr.
Melvin H. Rosen
Walter L. Wald
John Dibble, Jr.

ALASKA

(Now stationed at Ft. Lewis, Wash. After moving will be at Anchorage, Alaska.)
LIEUTENANT COLONEL Sylvester D. Downs, Jr.
MAJORS:
James A. Samouce
Russell G. Duff
CAPTAINS:
Robert A. Ellsworth
James R. Wheaton
Chester E. Margrave

ALASKA

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CAPTAINS:
Robert A. Ellsworth
James R. Wheaton
Chester E. Margrave

OFFICE, CHIEF OF FIELD**ARTILLERY****Washington, D. C.****CHIEF OF FIELD ARTILLERY****Robert M. Danford****COLONELS:****Francis A. Doniat****Ira T. Wyche****LIEUTENANT COLONELS:****John B. Anderson****Rex W. Beasley****Jay W. MacKelvie****Guy O. Kurtz****MAJORS:****Thomas North****Wilbur S. Nye****John F. Uncles****Mark McClure****REX E. Chandler****RESERVE OFFICER****1ST LIEUT. Harvey S. Ford****FIELD ARTILLERY BOARD****Ft. Bragg, N. C.****COLONELS:****Roger S. Parrott****Herbert R. Odell**

LIEUTENANT COLONELS:

Stafford LeR. Irwin
James F. Brittingham
MAJORS:
Maurice K. Kurtz
James M. Lewis
Frederick W. Watrous
Michael Buckley, Jr.

LIAISON OFFICERS

LT. COL. Alan L. Campbell, with
Ordnance, Aberdeen Proving
Grounds, Md.
MAJOR LeCount H. Slocum, with
Engineers, Ft. Belvoir, Va.
MAJOR Clifford C. Duell, with
Q.M.C., Holabird Q.M. Depot,
Md.
MAJOR Edwin Y. Argo, with
Cavalry School, Ft. Riley,
Kansas.
MAJOR Jesmond D. Balmer, with
Infantry School, Ft. Benning, Ga.
MAJOR Stuart A. Beckley, with
Signal School, Ft. Monmouth, N.
J.

ASSISTANT COMMANDANT,
FA SCHOOL

Ft. Sill, Oklahoma
COL. Leroy P. Collins

STAFF, FACULTY, AND
DETACHMENT, FAS

Ft. Sill, Oklahoma

MAJORS:
Clayton H. Studebaker
John P. Kennedy, Jr.
Harry McK. Roper
Voris H. Connor
CAPTAINS:
Charles L. Dasher, Jr.
Charles E. Hart
John F. Bird
1ST LIEUTENANTS:
Urquhart P. Williams
Clark Lynn, Jr.
Robert H. Adams
Donald G. McLennan

POST HEADQUARTERS

Ft. Sill, Oklahoma

LIEUTENANT COLONELS:
William Spence
Charles R. Doran
Jewett DeW. Matthews
Harold T. Brotherton
MAJOR John J. Turner
CAPTAINS:
James W. Clyburn
John C. Oakes
1ST LT. Mervyn MacK. Magee

STAFF AND FACULTY

Ft. Sill, Oklahoma

COL. Mert Proctor
LIEUTENANT COLONELS:
Henry L. C. Jones
Leon R. Cole
George W. Sloney
Cuyler L. Clark
Harwood C. Bowman
Breckinridge A. Day
Robert G. Mangum
Pierre Mallett
Miles A. Cowles
MAJORS:
John P. Eckert
Clyde M. Hallam
George V. Keyser
Lawrence B. Bixby
Alfred M. Gruenther
Robert G. Gard
George S. Price
Wyburn D. Brown
Thomas B. Hedekin
Harold F. Handy
William H. Bartlett
Sherman V. Hasbrouck
Francis W. Farrell
Edward T. Williams
LeRoy J. Stewart
Harold D. Kehm
Einar B. Gjelsteen
Wilbur R. Pierce
CAPTAINS:
George D. Crosby
John F. Williams
Russell L. Mabie
Vonna F. Burger
William L. Coughlin
Frank J. Hierholzer
Robert M. Cannon
Ralph M. Osborne
Lewis S. Griffing
Oliver W. van den Berg
Arthur E. Solem

Verdi B. Barnes
Carl H. Jark
Harold S. Whiteley
Barksdale Hamlett
Thomas W. Dunn
1ST LIEUTENANTS:
Louis V. Hightower
Roland C. Bower, Jr.
Walter P. Goodwin
William A. Harris
Robert B. Neely
Gordon W. Seaward
Richard E. Weber, Jr.
James A. Costain
Charles A. Symroski

F. A. S. DETACHMENT

Ft. Sill, Oklahoma
LT. COL. John A. Chase
CAPT. Albert Watson, 2d

STUDENTS, SOUND & FLASH

University of California
1ST LIEUTENANTS:
Paul R. Walters
James R. Winn

STUDENT, RUSSIAN
LANGUAGE

Harvard University
1ST LT. Richard Park, Jr.

STUDENTS, ORIENTAL
LANGUAGES

CAPTAINS:
Reynolds Condon—Chinese
Stuart Wood—Japanese

STAFF AND FACULTY,
COMMAND AND GENERAL
STAFF SCHOOL

Ft. Leavenworth, Kans.
LIEUTENANT COLONELS:
Augustus M. Gurney
Richard T. Guthrie
William A. Campbell
Edward R. Roberts
William P. Bledsoe
MAJOR Josef R. Sheetz

STAFF AND FACULTY, ARMY
WAR COLLEGE

Washington, D. C.
COL. Ned B. Rehkopf
LT. COL. Harry J. Malony

HISTORICAL SECTION,

ARMY WAR COLLEGE

Washington, D. C.
COL. Oliver A. Dickinson
LT. COL. Arthur A. White

COMMANDANT, ARMY WAR
COLLEGE, FOR DUTY
WITH

LT. COL. Zim E. Lawhon

OFFICE, ASSISTANT
SECRETARY OF WAR (A. I.
C.)

LT. COL. John E. Lewis
MAJOR Ernest A. Bixby

UNITED STATES MILITARY
ACADEMY

West Point, N. Y.
COL. Thomas J. J. Christian
LIEUTENANT COLONELS:
Louis E. Hibbs
Fay B. Prickett
R. Ernest Dupuy
MAJORS:
Robert M. Montague
Edward C. Gillette, Jr.
Charles J. Barrett, Jr.
Robert L. Taylor
CAPTAINS:
Amel T. Leonard
Bjarne Furuholm
David G. Erskine
Peter Sather, Jr.
John L. Chamberlain, Jr.
John E. Perman
Tyler Calhoun, Jr.
Harry P. Storke
Frederic J. Brown
Charles R. Hutchison
Church M. Matthews
Harvey W. Wilkinson
Leslie H. Wyman
Ephraim H. McLemore
Frederick G. Stritzinger, 4th
Joseph F. Trent
Frederic H. Chaffee
William J. Thompson
James P. Hannigan
Paul S. Thompson
Walter E. Kraus
John D. F. Phillips
Luster A. Vickrey

Daniel N. Sundt
Frederick G. Terry
Irving R. Schimmelpfennig
William H. Allen, Jr.
Andrew P. O'Meara
Keith H. Ewbank
Robert H. Booth
Winfield W. Sisson
Paul Clark, Jr.
John F. Greco
Robert W. Timothy
Harold E. Brooks
James F. Ammerman
1ST LIEUTENANTS:
George M. Wertz, Jr.
John P. Daley
Robert Hackett
Charles F. McNair
William W. Dick, Jr.
George S. Speidel, Jr.
Gordon K. Cusack
Percy H. Lash, Jr.
John R. Beishline
Merle L. Fisher
Roger D. Black, Jr.
Stanley Sawicki
Bernard Thiel
Walter A. Downing, Jr.
Guy C. Lothrop
Herbert G. Sparrow
Daniel Parker, Jr.
Beverly DeW. Jones
William F. Ryan
Gerald L. Roberson
Charles R. Revie

NATIONAL GUARD BUREAU

Washington, D. C.

COL. Marshall G. Randol
LIEUTENANT COLONELS:
Edward C. Hanford
Clyde C. Alexander

FIRST CORPS AREA
Hartford, Conn.

COL. Francis A. Ruggles

Providence, R. I.

LT. COL. William Alexander

Bangor, Maine

LT. COL. Thomas R. Miller

Stamford, Conn.

LT. COL. George L. Danforth

Salem, Mass.

LT. COL. Lewis E. Reigner

Ft. Sheridan, Ill.

LT. COL. Norbert C. Manley

Manchester, N. H.

LT. COL. Richard A. Knight

Ft. Hoyle, Md.

LT. COL. Albert E. Billing

New London, Conn.

LT. COL. Richard C. Mallonee

Boston, Mass.

MAJOR William B. Leitch

Providence, R. I.

CAPT. John M. Willems

SECOND CORPS AREA

Buffalo, N. Y.

LT. COL. H. Spencer Struble

Detroit, Mich.

LT. COL. Marvin C. Heyser

New York, N. Y.

LT. COL. Clifford H. Tate

Newburg, N. J.

LT. COL. James M. Garrett, Jr.

New York, N. Y.

LT. COL. Winfred C. Green

Newport, R. I.

LT. COL. Richardson L. Greene

Jamaica, N. Y.

MAJOR Frederick H. Black

Newburgh, N. Y.

MAJOR George B. Barth

THIRD CORPS AREA

Ft. Sam Houston, Texas

LT. COL. Clifford M. Tuteur

Richmond, Virginia

LT. COL. Edwin P. Parker, Jr.

Pittsburgh, Pa.

LT. COL. Orville M. Moore

Pittsburgh, Pa.

LT. COL. Osear I. Gates

Ft. Leavenworth, Kans.

LT. COL. Richard A. Gordan

Wilkes-Barre, Pa.

LT. COL. George P. Seneff

Pikesville, Md.

LT. COL. John Nash

Harrisburg, Pa.

MAJOR Leo T. McMahon

Philadelphia, Pa.

MAJOR Louis B. Ely

FOURTH CORPS AREA

LIEUTENANT COLONELS:

Richard G. Hunter
George P. Winton
Patrick E. Shea
Morrill Ross
John C. Butner, Jar.
Lloyd S. Patridge
Benjamin B. Lattimore
John M. Reynoldson
MAJORS:
Charles M. Thirkeld
Michael G. Smith
Hugh G. Elliott
Donald Q. Harris
George S. Smith

FIFTH CORPS AREA

LIEUTENANT COLONELS:

Richard M. Wightman
Stuart McLeod
Theodore E. T. Haley
George R. Hayman
MAJOR Harold C. Raymond
CAPT. Joseph Ganahl

SIXTH CORPS AREA

LIEUTENANT COLONELS:

Claude K. Rhinehart
John H. Milam
Jerome J. Waters, Jr.
William H. E. Holmes
Buhl Moore
MAJOR Richard H. Bacon
MAJOR Allen B. Hicklin
SEVENTH CORPS AREA
LIEUTENANT COLONELS:
Josiah A. Wallace
Andrew R. Reeves
Ralph deP. Terrell
Leonard H. Frasier
Alpha Brumage
MAJORS:
Ranald T. Adams
William W. Dixon
Erie A. Erickson
Lawrence H. Caruthers
John Gross
Russell O. Smith

EIGHTH CORPS AREA

LIEUTENANT COLONELS:

John K. Boles
H. Crampton Jones
Everett M. Graves
Charles E. Boyle
Russell C. Snyder
Charles W. Mays
Henry P. Gantt
Milo B. Barragan

NINTH CORPS AREA

LIEUTENANT COLONELS:

Henry B. Parker
Louis W. Hasslock
William R. Kerschner
Albert C. Searle
John H. Ball
John McDowall
James C. Patterson
Loyal M. Haynes
MAJORS:
John M. Hamilton
Grant Heninger

30TH DIVISION

Ft. Jackson, S. C.

LT. COL. Leslie E. Babcock

32ND DIVISION

Camp Beauregard, La.

LT. COL. Melvin L. McCreary

37TH DIVISION

Camp Shelby, Mississippi

MAJOR Harry M. Schwarze

44TH DIVISION

Ft. Dix, N. J.

LT. COL. Marion L. Young

ORGANIZED RESERVES

FIRST CORPS AREA

Manchester, N. H.

COL. Conrad H. Lanza

Portland, Me.

LT. COL. George E. Arneman

Providence, R. I.

LT. COL. Marcus A. S. Ming

New Haven, Conn.

LT. COL. Cyril Bassich

Boston, Mass.

LT. COL. Samuel D. Bedinger

Pittsfield, Mass.

LT. COL. Howard E. Camp

Worcester, Mass.

LT. COL. Leslie M. Skerry

Manchester, N. H.

MAJOR Versalious L. Knadler

Boston, Mass.

MAJOR James E. Bush

SECOND CORPS AREA

Buffalo, N. Y.

COL. Phillip W. Booker

New York, N. Y.

COL. John M. McDowell

LIEUTENANT COLONELS:

John D. von Holtzendorff
Richard B. Willis

Newark, N. J.

LT. COL. John F. Hepner

Syracuse, N. Y.

LT. COL. John F. Roehm

Utica, N. Y.

LT. COL. Horace Harding

New York, N. Y.

MAJOR Arthur E. Fox

East Orange, N. J.

MAJOR Irvin B. Warner

New York, N. Y.

MAJOR Roy L. Dalferes

Elizabeth, N. J.

MAJOR Royal L. Gervais

New York City

MAJOR Robert O. Montgomery

THIRD CORPS AREA

Harrisburg, Pa.

COL. William K. Moore

Washington, D. C.

LT. COL. John G. Burr

Pittsburgh, Pa.

LT. COL. Walter D. Mangan

LT. COL. Joseph A. Sheridan

Richmond, Va.

LT. COL. Oliver F. Marston

Philadelphia, Pa.

MAJOR John C. Cook

Baltimore, Md.

MAJOR Bryan L. Davis

Philadelphia, Pa.

MAJOR Thomas McGregor

FOURTH CORPS AREA

Jacksonville, Florida

COL. William P. Ennis

Columbia, S. C.

COL. William Scott Wood

Birmingham, Alabama

LT. COL. John M. Jenkins, Jr.

New Orleans, La.

LT. COL. Ray H. Lewis

Montgomery, Ala.

LT. COL. Joseph S. Tate

Tampa, Fla.

LT. COL. Claude A. White

Gainesville, Florida

LT. COL. Edgar A. O'Hair

Nashville, Tenn.

LT. COL. Alston P. Rhett

Knoxville, Tenn.

LT. COL. Charles C. Brown

- Macon, Ga.**
LT. COL. John E. Ray
- Jacksonville, Florida**
MAJOR Hiram W. Tarkington
- FIFTH CORPS AREA**
- Evansville, Ind.**
LT. COL. Robert B. McBride, Jr.
- Louisville, Ky.**
LT. COL. David W. Craig
- Cleveland, Ohio**
LT. COL. William S. Evans
- Toledo, Ohio**
LT. COL. David S. Doggett
- Indianapolis, Indiana**
LT. COL. George R. Middleton
- Dayton, Ohio**
LT. COL. Oscar N. Schjerven
- Ft. Wayne, Indiana**
LT. COL. Francis H. Boucher
- South Bend, Indiana**
LT. COL. John A. Steere
- Muncie, Indiana**
LT. COL. Dale M. Hoagland
- Columbus, Ohio**
LT. COL. William J. Egan
- Indianapolis, Indiana**
LT. COL. Robert V. Maraist
- Akron, Ohio**
MAJOR Arthur E. King
- Lafayette, Indiana**
MAJOR Frank E. Kauffman
- Charleston, W. Va.**
MAJOR Otto Ellis
- Cincinnati, Ohio**
MAJOR Selby F. Little
- SIXTH CORPS AREA**
- Madison, Wis.**
COL. Fred T. Cruse
- Chicago, Ill.**
COL. Chester B. McCormick
COL. Joseph Andrews
LT. COL. Isaac Spalding
LT. COL. Martin C. Walton, Jr.
- Detroit, Mich.**
COL. Thomas G. M. Oliphant
LT. COL. John J. McCollister
- Wausau, Wisconsin**
LT. COL. James C. Hughes
- Springfield, Ill.**
LT. COL. Joseph R. Bibb
- Milwaukee, Wis.**
LT. COL. Warren H. McNaught
- Chicago, Ill.**
MAJOR Harris M. Findlay
- SEVENTH CORPS AREA**
- Kansas City, Mo.**
COL. Clyde A. Selleck
- Little Rock, Arkansas**
LT. COL. Robert F. Hyatt
- Omaha, Nebraska**
LT. COL. Larry McHale
- Wichita, Kan.**
LT. COL. Arnold W. Shutter
- Lincoln, Neb.**
LT. COL. Arthur F. Doran
- Des Moines, Iowa**
LT. COL. Lawrence A. Kurtz
- St. Paul, Minnesota**
LT. COL. Robert H. Crosby
- Davenport, Iowa**
CAPT. Glenn B. McConnell
- St. Louis, Mo.**
CAPT. John K. Bryan
- EIGHTH CORPS AREA**
- San Antonio, Tex.**
COL. William R. Henry
- Phoenix, Arizona**
LT. COL. Eugene T. Spencer
- Denver, Colorado**
LT. COL. Theodore W. Wrenn
- Tulsa, Oklahoma**
LT. COL. John J. Atkinson
- Waco, Texas**
LT. COL. Walter C. Lattimore
- Ft. Worth, Texas**
LT. COL. Calvin S. Richards
- Oklahoma City, Oklahoma**
LT. COL. Arthur H. Lee
MAJOR Warren Hayford, 3d
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MAJOR Lee V. Harris
- Dallas, Texas**
MAJOR Daniel P. Potet
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CAPT. James T. Loomie
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COL. Joseph R. Davis
- Los Angeles, Calif.**
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- Ft. Francis, E. Warren, Wyo.**
LT. COL. Hamilton Templeton
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LT. COL. Fred B. Inglis
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- Salt Lake City, Utah**
LT. COL. James G. Watkins
LT. COL. Leon E. Savage
LT. COL. John R. Young
- San Francisco, Calif.**
MAJOR Charles C. Knight, Jr.
- Portland, Ore.**
MAJOR Richard H. Slider
- SENIOR ROTC**
- Alabama Polytechnic Institute, Auburn, Alabama**
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Harry L. Watts, Jr.
- Arkansas State College, Jonesboro, Arkansas**
MAJOR Francis J. Achatz
- Colorado State College of A. & M. ARTS, Fort Collins, Colo.**
COL. Walter F. Winton
MAJOR Stephen E. Bullock
- Cornell University, Ithaca, N. Y.**
COL. Waldo C. Potter
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Jesse B. Matlack
MAJOR Frederic A. Metcalf
- Culver Military Academy, Culver, Indiana**
MAJOR Isaac L. Kitts
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- University of Florida, Gainesville, Florida**
COL. Samuel R. Hopkins
LT. COL. Clinton M. Lucas
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Rex H. Donaldson
- Harvard University, Cambridge, Mass.**
LT. COL. Henry D. Jay
MAJOR George F. Wooley, Jr.
- University of Illinois, Champaign, Illinois**
- COL. Robert G. Kirkwood
LT. COL. Edwin A. Henn
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James H. Leusley
- Iowa State College of A. & M. Arts, Ames, Iowa**
COL. John E. Hatch
LT. COL. Peyton Winlock
- Eastern Kentucky State Teachers College, Richmond, Ky.**
MAJOR Hugh P. Adams
- Louisiana State University, University, Louisiana**
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Henry C. Demuth
- Michigan State Coll. of Agric. and Applied Science, E. Lansing, Mich.**
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MAJOR Edward A. Banning
- University of Missouri, Columbia, Missouri**
COL. Lloyd E. Jones
LT. COL. Sidney F. Dunn
MAJOR Arthur P. Moore
- University of Nebraska, Lincoln, Nebraska**
LT. COL. William Michener
- Ohio State University, Columbus, Ohio**
COL. Otto L. Brunzell
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Charles A. Beaucond
MAJORS:
Joseph L. Langevin
Halstead C. Fowler
Allan E. Smith
Douglas V. Johnson
- University of Oklahoma, Norman, Oklahoma**
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John A. Stewart
Charles H. Brammell
MAJOR Marion M. Pharr
- Oregon State Agricultural College, Corvallis, Ore.**
LT. COL. Arthur M. Sheets
MAJOR Harold A. Doherty
- Princeton University, Princeton, N. J.**
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George E. Cook
MAJOR Homer W. Kiefer
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COL. Donald M. Beere
LIEUTENANT COLONELS:
John G. White
William A. Ray
MAJORS:
William D. Williams
David Larr
James H. Workman
Bernard A. Tormey
- University of Santa Clara, Santa Clara, Calif.**
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- Leland Stanford Jr. University, Stanford University, Calif.**
LT. COL. Harry B. Allen
MAJOR Francis A. Garrecht, Jr.
- St. Bonaventure College, Allegany, N. Y.**
LT. COL. Walter M. Tenney
- A. & M. College of Texas, College Station, Texas**
LT. COL. Orva E. Beezley
MAJOR Osgood C. McIntyre
- University of Utah, Salt Lake City, Utah**
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- Rumsey Campbell
Virginia Military Institute, Lexington, Virginia
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Yale University, New Haven, Conn.
LT. COL. Dean Hudnutt
MAJOR William H. Hill
- Xavier University, Cincinnati, Ohio**
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- JUNIOR ROTC**
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MAJOR Paul R. M. Miller
- Benedictine Military School, Savannah, Ga.**
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- Chicago High Schools, Chicago, Ill.**
COL. William F. Morrison
LT. COL. William B. Weston
- Davenport High School, Davenport, Iowa**
MAJOR Polk J. Atkinson
- Detroit High Schools, Detroit, Mich.**
MAJOR Harry Crawford
- Florida Military Academy, St. Petersburg, Fla.**
MAJOR Richard J. Sothorn
- Guthrie High School, Guthrie, Okla.**
CAPT. Harry J. Harper
- Ball High School, Galveston, Texas**
LT. COL. William F. Kernan
- Central High School, Jackson, Mississippi**
LT. COL. Henry C. Harrison, Jr.
- Polytechnic High School, Long Beach, Calif.**
LT. COL. Albion Smith
- Marion Institute, Marion, Ala.**
LT. COL. Charles W. Glover
- Memphis City High Schools, Memphis, Tenn.**
LT. COL. Herman H. F. Gossett
- New Bedford High School, New Bedford, Mass.**
- Oakland Public High Schools, Oakland, Calif.**
MAJOR Henry L. Love
- Porter Military Academy, Charleston, S. C.**
LT. COL. Arthur B. Wade
- Robert E. Lee Institute High School, Thomaston, Ga.**
CAPT. Arthur Bliss
- Roger High School, Newport, R. I.**
MAJOR John Mesick
- Santa Barbara High School, Santa Barbara, Calif.**
MAJOR Robert H. Knapp
- Savannah High Schools, Savannah, Ga.**
MAJOR Alexander S. Bennet
- St. Joseph High School, St. Joseph, Mo.**
LT. COL. Samuel G. Fairchild
- St. Norbert College, West De Pere, Wis.**
LT. COL. Frank G. Chaddock
- Sewanee Military Academy, Sewanee, Tenn.**
CAPT. Walter E. Johns
- Walla Walla High School, Walla Walla, Wash.**
MAJOR Dalies J. Oyster
- William Chrisman High School, Independence, Mo.**
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Williston B. Palmer
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Foster J. Tate
Frank A. Henning
Blackshear M. Bryan
CAPT. William T. Sexton
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- Munitions Building, Washington, D. C.**
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Benjamin F. Miller, Hq. 1st C. A.
George M. Peek, Hq. 5th C. A.
Frank K. Ross, Hq. 2nd C. A.
Philip Hayes, GH Hawaii
LIEUTENANT COLONELS:
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William R. Gruber, GH Hawaii
William C. Crane, (CST Gen. Hqs.) Washington, D. C.
Carlos Brewer, Hqs. 9th Div., Ft. Bragg, N. C.
John E. McMahon, Jr., Hqs. 7th Div., Ft. Ord., Calif.
Falkner Heard, Hq. 8th C. A.
Philip L. Thurber, Hq. 8th C. A.
William F. Maher, Philippine Islands
Joseph M. Swing, Hq. 8th C. A.
Carl C. Bank, Territory of Hawaii
James A. Pickering, Hq. 2nd Armored Div., Ft. Benning, Ga.
Stacy Knopf, Hq. 4th C. A.
Ray L. Burnell, Hq. 6th Div., Ft. Lewis, Wash.
Charles S. Ferrin, Hq. Puerto Rican Department
John M. Devine, Hq. 1st Armored Div., Ft. Knox, Kentucky
George D. Wahl, Hq. 7th C. A.
Percy G. Black, 1st Armored Corps, Ft. Knox, Kentucky
George D. Shea, Hq. 8th Div., Ft. Jackson, S. C.
John H. Fye, Hq. 9th C. A.
Nathan E. McCluer, Hq. 1st Div., Ft. Hammond, N. Y.
Murray M. Montgomery, Hq. 5th C. A.
Maylon E. Scott, Hq. 9th C. A.
Hugh J. Gaffey, 1st Armored Corps, Ft. Bragg, Kentucky
MAJORS:
William A. Beiderlinden, Hq. 4th Div., Ft. Benning, Ga.
Thomas F. Hickey, Hq. 5th Division

Clarence P. Townsley, Hq. 1st Corps Area, Governors Island, New York
 Lawrence E. Heyduck, Hq. 4th Div., Ft. Benning, Ga.
 Henry E. Sanderson, Panama Canal Department
 Giles R. Carpenter, Hq. 6th C. A.
 Thomas E. Lewis, GH, Washington, D. C.
 Carter B. Magruder, Hq. 3rd Division, Ft. Lewis, Washington

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 Benjamin M. Bailey, 4th C. A.
 George W. DeArmond, 1st C. A.
 William F. Sharp, 9th C. A.
 Roscoe C. Batson, 3rd C. A.
 MAJOR Stephen E. Stancisko, Puerto Rican Department

MILITARY ATTACHES
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 Bernard R. Peyton, Berlin, Germany
 LIEUTENANT COLONELS:
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 Howard Eager, Spain
 George S. Beurkt, Venezuela
 John P. Ratay, Roumania
 Louis J. Fortier, Belgrade
 William Mayer, China
 MAJORS:
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 Ivan D. Yeaton, Russia
 G. Bryan Conrad, London
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 CAPT. Frederick P. Munson, China

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 Frank Dorn, Ft. Ord, California
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 Howard E. Kessinger, Ft. Sam Houston, Texas
 Paul A. Gavan, Ft. Sam Houston, Texas
 Thomas L. Sherburne, Jr., Presidio of San Francisco, Calif.
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 David E. Jones, Ft. Lewis, Washington
 John T. Honeycutt, Ft. Shafter, T. H.
 Hugh McC. Exton, 3rd C. A., Baltimore, Md.

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 Burdette M. Fitch
 Lloyd R. Garrison
 Charles H. Day
 Herbert M. Jones
 Leslie B. Downing
 Alfred L. Price

Air Corps (Flying Training)
 CAPT. Bream C. Patrick
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 Robert H. Strauss
 2ND LT., T. 1ST LT.:
 John W. Watt, Jr.
 2ND LIEUTENANTS:
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 Elbert D. Hoffman
 Richard J. Kent
 Richard S. Abbey
 William H. Birrell
 Bradley F. Prann
 Paul S. Deems
 Robert L. Williams
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 Ralph A. Osborn, Jr.
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 Kenneth A. Cunin
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 MAJOR Robert T. Strode
 CAPT. Ernest O. Lee
 IST LIEUTENANTS:
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 John D. Armitage
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 Cam Longley, Jr.
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 Edward Gray
 Durward E. Breakefield
 Robert Van Roe
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 Harry E. Mikkelsen
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 Charles B. Tyler, Jr.
 Frederick C. Bothwell, Jr.
 Asher B. Robbins, Jr.
 Elwyn N. Kirsten
 Horace G. Davisson
 John M. Cone
 George C. McDowell
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 William W. Belcher
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 Everett Busch
 Duncan T. Boisseau
 Maurice V. Patton
 Joseph A. Sullivan
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 Harold J. Guernsey
 Harvey J. Thornton
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 Edwin S. Brewster, Jr.
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 James B. Clearwater
 Edward H. Barr
 Thomas E. Moore
 Harold T. Molloy
 Lester Vocke
 Lester M. Rouch
 Thomas E. Meyer
 James L. McKinnon
 Clint LeR. Taylor
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 Thomas C. McCormick
 Mark A. Dawson
 Lester M. Kilgarif
 Arthur L. Warren
 Percy C. Fleming
 Howell R. Hanson
 John W. Russey
 Elmer R. Block
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 John E. Adkins, Jr.
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 George L. Holsinger
 Christian G. Nelsen
 Harold H. Hunt
 Ronald I. Pride
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 Humbert J. Versace
 George E. Adams

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 J. Alfred Moss

Telesphor G. Gottschalk
 Frederick A. Prince
LIEUTENANT COLONELS:
 William H. Cureton
 Wilbur G. Dockum
 Frank H. Hollingsworth
 Elmer S. Van Benschoten
 Henry E. Tisdale
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 Robert L. Allen, Jr.
 Roswell B. Hart
 John R. Culleton
 Leon V. Chaplin
 Paul A. Berkey

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 Emer Yeager
 Stanley Bacon
 David S. Rumbough
 Lester A. Daugherty
 Lawrence H. Bixby
 Lewis F. Kosch
 George H. Stuts
 James L. McIlhenny
 Paul H. Weiland
 Theodore E. Buechler
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 Frederick H. Gaston
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 Fay W. Lee
 Russell G. Duff
 CAPT. David W. Traub

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OCAC, Washington, D. C.
 MAJOR Ivan L. Foster

Duty at Headquarters, Philippine Department
 LT. COL. William C. Dunckel

Duty at Ports of Embarkation
 COLONELS:
 Raymond S. Pratt
 Abbott Boone

C. O., U. S. A. T.
 MAJOR John P. Crehan

C. O., Camp Dix, N. J.
 COL. John W. Downer

Battle Monuments Commission
 MAJOR Edward O. Hopkins

U. S. Disciplinary Barracks
 LT. COL. Frederic H. Timmerman

II—National Guard

FIELD ARTILLERY ORGANIZATIONS AND STATIONS

October 23, 1940
 NATIONAL GUARD

Assignment	Unit and Type	Date Inducted and Home State	Station
30th Div.	55th Brig. Hq. & Hq. Btry.	9-16-40, Ga.	Ft. Jackson, S. C.
	115th FA, Light	9-16-40, Tenn.	Ft. Jackson, S. C.
	118th FA, Light	9-16-40, Ga.	Ft. Jackson, S. C.
	113th FA, Medium	9-16-40, N. C.	Ft. Jackson, S. C.
41st Div.	66th Brig. Hq. & Hq. Btry.	9-16-40, Wash.	Ft. Lewis, Wash.
	146th FA, Light	9-16-40, Wash.	Ft. Lewis, Wash.
	148th FA, Light	9-16-40, Wash. & Ida.	Ft. Lewis, Wash.
	218th FA, Medium	9-16-40, Ore.	Ft. Lewis, Wash.
44th Div.	69th Brig. Hq. & Hq. Btry.	9-16-40, N. J.	Ft. Dix, N. J.
	156th FA, Light	9-16-40, N. J.	Ft. Dix, N. J.
	165th FA, Light	9-16-40, N. J.	Ft. Dix, N. J.
	157th FA, Medium	9-16-40, N. J.	Ft. Dix, N. J.
45th Div.	70th Brig. Hq. & Hq. Btry.	9-16-40, Okla.	Ft. Sill, Okla.
	158th FA, Light	9-16-40, Okla.	Ft. Sill, Okla.
	160th FA, Light	9-16-40, Okla.	Ft. Sill, Okla.
	189th FA, Medium	9-16-40, Okla.	Ft. Sill, Okla.
27th Div.	52d Brig. Hq. & Hq. Btry.	10-15-40, N. Y.	Ft. McClellan, Ala.
	104th FA, Light	10-15-40, N. Y.	Ft. McClellan, Ala.
	105th FA, Light	10-15-40, N. Y.	Ft. McClellan, Ala.
	106th FA, Medium	10-15-40, N. Y.	Ft. McClellan, Ala.

Assignment	Unit and Type	Date Inducted and Home State	Station
32d Div.	57th Brig. Hq. & Hq. Btry.	10-15-40, Wis.	Cp. Bearegard, La.
	120th FA, Light	10-15-40, Wis.	Cp. Bearegard, La.
	126th FA, Light	10-15-40, Wis.	Cp. Bearegard, La.
	121st FA, Medium	10-15-40, Wis.	Cp. Bearegard, La.
37th Div.	62d Brig. Hq. & Hq. Btry.	10-15-40, Ohio	Camp Shelby, Miss.
	134th FA, Light	10-15-40, Ohio	Camp Shelby, Miss.
	135th FA, Light	10-15-40, Ohio	Camp Shelby, Miss.
	136th FA, Medium	10-15-40, Ohio	Camp Shelby, Miss.
Puerto Rico	162d FA (1st Bn.) Lt.	10-15-40, Puerto Rico	Puerto Rico
31st Div.	56th Brig. Hq. & Hq. Btry.	11-25-40, Fla. & La.	Camp Blanding, Fla.
	116th FA, Light	11-25-40, Fla.	Camp Blanding, Fla.
	117th FA, Light	11-25-40, Ala.	Camp Blanding, Fla.
	114th FA, Medium	11-25-40, Miss.	Camp Blanding, Fla.
GHQ	128th FA, Light	11-25-40, Mo.	Ft. Jackson, S. C.
35th Div.	60th Brig. Hq. & Hq. Btry.	11-25-40, Kan.	Camp Robinson, Ark.
	130th FA, Light	11-25-40, Kan.	Camp Robinson, Ark.
	161st FA, Light	11-25-40, Kan.	Camp Robinson, Ark.
	127th FA, Medium	11-25-40, Kan.	Camp Robinson, Ark.
36th Div.	61st Brig. Hq. & Hq. Btry.	11-25-40, Tex.	Brownwood, Tex.
	131st FA, Light	11-25-40, Tex.	Brownwood, Tex.
	132d FA, Light	11-25-40, Tex.	Brownwood, Tex.
	133d FA, Medium	11-25-40, Tex.	Brownwood, Tex.

Assignment	Unit and Type	Date Inducted and Home State	Station
GHQ	147th FA, Light	11-25-40, S. D.	Ft. Ord. Calif.
26th Div.	51st Brig. Hq. & Hq. Btry.	1-3/19-41, Mass.	Mass. Mil. Res.
	101st FA, Light	1-3/19-41, Mass.	Mass. Mil. Res.
	102d FA, Light	1-3/19-41, Mass.	Mass. Mil. Res.
	180th FA, Medium	1-3/19-41, Mass.	Mass. Mil. Res.
	71st Brig. Hq. & Hq. Btry.	1-3/19-41, N. Y.	Ft. Ethan Allen, Vt.
Corps	186th FA, Medium	1-3/19-41, N. Y.	Madison Barracks, N. Y.
	187th FA, Medium	1-3/19-41, N. Y.	Ft. Ethan Allen, Vt.
	258th FA, 155-Gun	1-3/19-41, N. Y.	Ft. Ethan Allen, Vt.
28th Div.	53d Brig. Hq. & Hq. Btry.	1-3/19-41, Pa.	Indiantown Gap. Pa.
	107th FA, Light	1-3/19-41, Pa.	Indiantown Gap. Pa.
	109th FA, Light	1-3/19-41, Pa.	Indiantown Gap. Pa.
	108th FA, Medium	1-3/19-41, Pa.	Indiantown Gap. Pa.
	29th Div.	54th Brig. Hq. & Hq. Btry.	1-3/19-41, Md. & Va.
110th FA, Light		1-3/19-41, Md.	Ft. Meade, Md.
111th FA, Light		1-3/19-41, Va.	Ft. Meade, Md.
176th FA, Medium		1-3/19-41, Pa.	Ft. Meade, Md.
33d Div.		58th Brig. Hq. & Hq. Btry.	1-3/19-41, Ill.
	122d FA, Light	1-3/19-41, Ill.	Camp Peay, Tenn.
	124th FA, Light	1-3/19-41, Ill.	Camp Peay, Tenn.
	123d FA, Medium	1-3/19-41, Ill.	Camp Peay, Tenn.
	Corps	Brig. Hq. & Hq. Btry.	1-3/19-41
181st FA, Medium		1-3/19-41, Tenn.	Camp Peay, Tenn.
191st FA, Medium		1-3/19-41, Tenn.	Camp Peay, Tenn.
168th FA, 155-Gun		1-3/19-41, Colo.	Camp Peay, Tenn.
43d Div.		68th Brig. Hq. & Hq. Btry.	1-3/19-41, R. I. & Me.
	103d FA, Light	1-3/19-41, R. I.	Camp Blanding, Fla.
	152d FA, Light	1-3/19-41, Me.	Camp Blanding, Fla.
	192d FA, Medium	1-3/19-41, Conn.	Camp Blanding, Fla.
	Corps	Brig. Hq. & Hq. Btry.	1-3/19-41
172d FA, Medium		1-3/19-41, N. H.	Camp Blanding, Fla.
179th FA, Medium		1-3/19-41, Ga.	Camp Blanding, Fla.

Assignment	Unit and Type	Date Inducted and Home State	Station
38th Div.	63d Brig. Hq. & Hq. Btry.	1-3/19-41, Ky.	Camp Shelby, Miss.
	138th FA, Light	1-3/19-41, Ky.	Camp Shelby, Miss.
	139th FA, Light	1-3/19-41, Ind.	Camp Shelby, Miss.
	150th FA, Medium	1-3/19-41, Ind.	Camp Shelby, Miss.
	Corps	73d Brig. Hq. & Hq. Btry.	1-3/19-41, Pa.
141st FA, Medium		1-3/19-41, La.	Camp Shelby, Miss.
166th FA, Medium		1-3/19-41, Pa.	Camp Shelby, Miss.
190th FA, 155-Gun		1-3/19-41, Pa.	Camp Shelby, Miss.
34th Div.		59th Brig. Hq. & Hq. Btry.	1-3/19-41, Minn.
	125th FA, Light	1-3/19-41, Minn. Cp.	Beauregard, La.
	151st FA, Light	1-3/19-41, Minn. Cp.	Beauregard, La.
	185th FA, Medium	1-3/19-41, Ia. & N. D.	Cp. Beauregard, La.
	GHQ	184th FA, (colored) Medium	1-3/19-41, Ill.
GHQ 112th FA, 75-Gun H.D.		1-3/19-41, N. J.	Ft. Bragg, N. C.
13th FAB 178th FA, Medium (corps)		1-3/19-41, S. C.	Ft. Bragg, N. C.
18th (corps)	FAB 142d FA, Medium (corps)	1-3/19-41, Ark.	Ft. Sill, Okla.
	40th Div.	65th Brig. Hq. & Hq. Btry.	1-3/19-41, Utah
143d FA, Light		1-3/19-41, Calif.	San Luis Obispo, Calif.
145th FA, Light		1-3/19-41, Utah	San Luis Obispo, Calif.
222d FA, Medium		1-3/19-41, Utah	San Luis Obispo, Calif.
Corps		144th FA, 155-Gun	1-3/19-41, Calif.
Corps	72d Brig. Hq. & Hq. Btry.	2-3-41, Mich.	VII CA Training Center
	177th FA, Medium	2-3-41, Mich.	VII CA Training Center
	182d FA, Medium	2-3-41, Mich.	VII CA Training Center
	119th FA, 155-Gun	2-3-41, Mich.	VII CA Training Center
	Corps	183d FA, Medium	2-3-41, Idaho
Corps	188th FA, Medium	2-3-41, N. D.	Ft. Warren, Wyo.

Rosters have been received from the organizations as shown below. Additional rosters will be printed when received.

111TH FIELD ARTILLERY
Hampton, Virginia
 COLONEL:
 E. Sclater Montague
 LT. COL. Arthur Emmerson
 MAJORS:
 Frank S. Pace
 Thomas T. Atkins
 Edgar DeMuth
 Thornton L. Mullins
 CAPTAINS:
 Hugh L. Dougherty
 Andrew J. Huneycutt
 James G. King, Jr.
 Cassius H. Miller
 Raymond E. Acey
 Lawrence M. Scarborough
 John P. Simpson, Jr.
 Winthrop G. Kerwick
 Arthur R. Tuttle
 Rayford P. Graves
 Jack L. Epps
 Edgar M. Young
 1ST LIEUTENANTS:
 Herbert C. Stevens
 Beverly A. Armistead
 Robert E. Huneycutt
 Garland W. Stone
 Kenneth W. Hall
 James G. Martin IV
 John E. Wales III
 Thomas A. Ligon
 Clinton E. Thurston
 George P. Page
 Cantwell C. Brown
 Elijah P. Montgomery
 2ND LIEUTENANTS:
 John J. Curley, Jr.
 Frank M. Raffo
 Duff Green
 Ashby S. Wilson
 James Ashby, Jr.
 Van Buren Anderson
 William L. DeCamps
 Harry L. Yerby
 William B. Verell
 Louis G. Chadwick
 Russell A. McCoy, Jr.
 Henry C. Huggins
 Fred E. Consolvo
 Grayson A. Brock
 Russell M. Southall
 Arnold Ellis

HQ. BAT. 55TH F. A.
Fort Jackson, S. C.
 CAPT. I. C. Helmly, Jr.
 1ST. LT. D. G. Kinney
 2ND LT. J. A. Pervis

113TH FIELD ARTILLERY
Fort Jackson, S. C.
 COL. Godfrey Cheshire
 LT. COL. A. T. Willis
 MAJORS:
 Charles T. Wilkerson
 Edward F. Griffin
 Frederick C. Shepard
 Joseph B. Mullineaux
 Joseph B. Linker
 John C. M. Vann
 William H. Williams
 CAPTAINS:
 T. E. Hinson
 A. L. Purrington
 Meriwether Lewis
 Lee J. Best
 Eppie C. Powell
 Isaac E. Harris
 Alexander T. Jennette
 Fred Patterson
 Sommers S. Smith
 Bland G. Mitchell
 Worth Wicker
 Charles P. Green
 William A. Royal
 Luby F. Royal
 Earnest P. Meredith
 Weston H. Willis
 Charles W. Porter
 Samuel B. Howard
 Daniel H. Bogor
 1ST LIEUTENANTS:
 George W. Tucker
 Edgar B. Marston
 Robert A. Eason
 Kermit L. Gurthie
 James A. Wheelless
 James H. Moyer
 Frank W. Wheelless
 Lemuel E. Watson
 Norman B. Grantham
 Wiley C. Rodman
 Thomas G. Matthews
 Roy E. Thompson
 Lucien P. Wilkins
 Charles H. Bell

2ND LIEUTENANTS:
 Robert F. H. Pollock
 William H. Sills
 Hyman M. Bizzell
 Marion A. Parrot
 Richard E. Timberlake
 Joseph E. Waldrop
 Dan Wright
 Elmore C. Bulluck
 Drigh B. Rowland
 John T. Lewis
 James R. Barbour
 Rudolph Rhodes
 Abbott C. Weatherly
 Roger H. Robbins
 James P. Seymour
 William N. Gurley
 James P. Morgan
 Junius H. Stearns
 John H. Lee
HQ. BAT., 62D F. A.
Camp Shelby, Miss.
 CAPT. Winton O. Etz
 1ST. LT. J. D. Hoopert
 2ND LT. R. J. Welsh

66TH BRIG. HQ. BTRY.
Ft. Lewis, Washington
 BRIGADIER GENERAL:
 Carlos A. Pennington
 LIEUTENANT COLONEL:
 Virgil L. Anderson
 CAPTAINS:
 Ivan A. Meyer
 Carleton W. Dark
 1ST LIEUTENANTS:
 Francis P. Stedman
 William H. Nelson
 2ND LIEUTENANTS:
 George W. Reitz
 John Bates Roberts

HQ. BTRY., 69TH F. A.
Camden, N. J.
 BRIGADIER GENERAL:
 Edward C. Rose
 LT. COL. Robert L. Patterson
 MAJOR Howard R. Yocum
 CAPTAINS:
 William S. Zink
 James Truscott
 Edward I. Berry, Jr.

1ST LT. Philip S. Huston
 2ND LT. Francis E. P. McCarter.

165TH FIELD ARTILLERY
Fort Dix, New Jersey
 COL. Edward J. Towers
 LIEUTENANT COLONELS:
 John Lemp
 Lewis M. Smith, Jr.
 MAJORS:
 Charles Cunningham, Jr.
 Mortimer J. Proops
 Oscar D. Wittlake
 CAPTAINS:
 Gordon S. Lee
 Robert C. Barret
 Lyman H. Burbank
 John W. Sweigert
 Alfred T. Rhoads
 Ferdinand W. Roebing III
 Warren H. Tingley
 George H. Davis
 George Holy
 John G. Wagner
 Vivian D. Smith
 Morris L. Zimmerman
 WARRANT OFFICER:
 Joseph C. Hladik
 1ST LIEUTENANTS:
 Roberts H. Billingsley
 Thomas Sheehan, Jr.
 Peter S. Rush
 Paul E. Feiring
 James W. Khalaf
 David Haviland
 Ralph A. Kimball
 Henry W. Lersch
 Henry T. Lyon
 John M. Raleigh
 George E. Cilley
 Jae O. Ullman
 Lawrence C. Kaine
 Arthur F. Tait
 2ND LIEUTENANTS:
 Francis E. P. McCarter
 John F. Convery, Jr.
 Cameron Mackenzie
 Oscar J. Millnor
 William T. Koester
 Paul J. Wilks
 Elden A. Hoffman
 Walter E. Foran
 Arthur E. Lawes

Malcolm B. Robertson
 Albert R. Hill
 Mario Battista
 Jacob L. Packer
 Albert T. Haviland
 Norman P. Findley, Jr.
 Robert P. Willis
 Vincent P. McGlone
 Paul J. Heran
 Eric H. Drexler
 John E. Barth
 James A. Skelley
 Milton H. Lebson
 Bishop White

70TH F. A. BRIGADE
Ft. Sill, Oklahoma
 BRIGADIER GENERAL:
 Raymond S. McLain
 LT. COL. Jesse L. Larson
 MAJORS:
 S. Y. McGiffert
 Russell D. Funk
 CAPTAINS:
 Earl P. Adams
 George B. Brown
 Forrest R. Armstrong
 1ST. LT. Opie C. Cullins
 2ND LIEUTENANTS:
 Harvey F. Allen
 Raymond S. McLain, Jr.
 David N. Breeding

158TH FIELD ARTILLERY
Ft. Sill, Oklahoma
 COL. Grover C. Walmsley
 LIEUTENANT COLONELS:
 Edgar B. Ross
 Marion D. Woodworth
 Clarence R. Steele
 MAJORS:
 Parkey H. Anderson
 Sidney P. Kretlow
 Howard R. Cress
 CAPTAINS:
 Paul E. Anderson
 William C. Cooley
 Dwight U. Cochrane
 Albert R. Harris
 Frank L. Miller
 George L. Brown
 Jesse R. Waltrip

John E. Weiler
 Ernest J. Stocks
 Bruce Y. Dutcher
 Van L. Ogden
 Henry A. Morton
 Merl R. Warren
 William L. Shamel
 Edward Q. Brengle
 Hugh A. Neal
 Wilson M. Riley
 Arthur Fowler, Jr.
 1ST LIEUTENANTS:
 Wilbur S. Smith
 Martin W. Steward
 Albert E. Huber
 Philip A. Monahan
 Paul E. Scheefers
 Irving J. Strickland
 John C. Niehaus
 Henry T. Ford
 William B. MacFadyen
 Claude L. Hostetter
 Harold D. Roads
 Bryan L. Lakestraw
 William O. Breedlove
 Geen Gilmour
 George W. Nikkel
 2ND LIEUTENANTS:
 Carl E. Hall
 Chester A. Smith
 Myrl A. McCormick
 William R. Meredith
 Ben C. Parrott
 Lester G. Avritt
 James T. Wilcoxson
 Lynn W. Norman
 Clarence W. Thomas
 Earl E. Mercer
 Paul W. Prior
 LeRoy Miller
 William G. Riddle
 Gordon F. Wonder
 Willis H. Rawlins
 Lewis H. Day
 Robert T. Mobley
 John W. Marshall
 Ira S. Hayes
 Roland E. Pomeroy
 Boyd L. Johnson
 WARRANT OFFICER:
 Howard A. Way

160TH FIELD ARTILLERY

Ft. Sil, Oklahoma
 COL. Charles A. Holden
 LIEUTENANT COLONELS:
 Cabell C. Cornish
 Tom McMurry
 Charles R. Taylor
 MAJORS:
 Lanson D. Mitchell
 Elmer E. Ogle
 Andy N. Deaton
 CAPTAINS:
 Franklin T. Gardner
 Paul S. Bennett
 DeWitt T. Lawson
 Joseph G. Cathey
 Leslie N. Van Noy
 Ira V. Lemaster
 Walter J. Arnote
 Charles B. Dear
 Stanley R. Roff
 John Embry
 Clark R. Cordell
 James C. Todd
 Henry D. Moore
 Raymond W. Washam
 Elbert G. Reed
 Bart A. Murtaugh
 1ST LIEUTENANTS:
 Ralph E. Hardie
 John R. Boosa
 Joseph R. Boosa
 Oran N. McCain
 Claud M. Proctor
 Charlie W. Casteel
 Paul C. Bachmann
 Marvin L. Briggs

Arthur G. Taylor
 German P. Odum
 Clay W. Brian
 Walter D. Atkins
 John T. Cooper, Jr.
 Earnest E. Fleming
 Donald P. McCutchen
 2ND LIEUTENANTS:
 William G. Johnson
 Robert F. Woods
 Lee Roy Young
 Russell P. Cecil
 Donald C. Turner
 James W. Crow
 Lloyd D. Cox
 Walter J. Brady
 Paul A. Dunham
 Clarence F. Himes
 Arthur J. Matheny
 John R. Turner
 Paul D. Dunaway
 Joel W. Crain
 Wayne E. Davis
 Albert R. Brown
 Joel A. Harper
 Veril Patterson
 Douglas E. Gambrell
 Harvey F. Allen
 Monroe D. Little
 Allen L. Crain
 Ralph M. Wright
 H. L. Dorsey
 Don L. Johnson
 Charles W. Munsey
 WARRANT OFFICER:
 Frederick E. Ford

HQ, BTRY., 57TH F. A.

Camp Beauregard, La.
 BRIG GEN. Wm. S. Wood
 LT. COL. R. H. Mieding
 MAJOR John F. Kling
 CAPTAINS:
 Stuart F. Brokan
 Arthur M. Burghduff
 Chas. E. Lafferty
 1ST LIEUTENANTS:
 Albert J. Godfrey
 Robert W. Dobbins
 Orpheus S. Hokland
 2ND LIEUTENANTS:
 Edward A. Laabs
 Walter R. Reiter

105TH FIELD ARTILLERY

Ft. McClellan, Ala.
 COL. James Andrews
 LIEUTENANT COLONELS:
 Hugh J. Cox
 James J. Doyle
 Charles E. Keegan
 MAJORS:
 Wilfrid S. Bastine
 Maurice J. Fitzgerald
 David R. Wylie
 CAPTAINS:
 Richard A. Brown
 William P. Crum
 Philip Goldstein
 John D. Hagon
 Joseph P. Hanbury
 Everett F. Hayward
 Nicholas D. Lamorte
 Joseph J. Murtha
 Charles C. Nast
 Edward B. O'Dea
 Frederick O. Olsen
 Charles A. Selby
 Thomas J. Walsh
 Thomas P. Ward
 Julius Workman
 1ST LIEUTENANTS:
 Gerard J. Brinkman
 Evan J. Crook
 Edmund T. Delaney
 John J. Dunne
 Dorris N. Gerard
 Arthur D. Hirt
 James B. Hirt

Nicholas A. Jovene
 John Kersch
 Henry M. Langlois
 Michael P. Lefkowitz
 Arthur Levin
 Milton Marcus
 John J. McCarthy
 Charles V. McManus
 Edmund C. Murphy
 George A. Rollins
 James H. Ward
 Charles S. Yates, Jr.
 2ND LIEUTENANTS:
 Thomas J. Aiello
 Martin J. Chapman
 Frank J. Chelkonas
 Walter K. Felgner
 Arthur J. Gibson
 Norman N. Gross
 James A. Keenan
 William E. Leary
 Cornelius Manly
 Wesley B. Marshall
 Frank O. Mollica
 Eugene J. O'Neill
 Gustave J. Schwabe
 Alfred A. Stolz
 Edward V. Tracy
 Abraham Verman
 WARRANT OFFICER:
 John P. Sweicki

120TH FIELD ARTILLERY

Camp Beauregard, La.

COL. J. D. Hill
 LIEUTENANT COLONELS:
 Kenneth S. White
 Kenneth J. Hough
 MAJORS:
 Harry T. Ketcham
 Gerald C. Maloney
 Roy W. Bailey
 CAPTAINS:
 Herbert M. Weeks
 Forest W. Edwards
 Frederick H. Fahringer
 Glen R. Hall
 Herbert O. Brickson
 Clement J. Moran
 Chalmer Davee
 Ethan A. Peterson
 Wm. E. Roth
 Ernest G. Stout
 Arthur G. Rogge
 Elmer E. Chisholm
 Emil F. Stielow
 Richard L. Jones
 Ferdinand A. Hirzy
 Leo J. Blanchard
 Chester J. Severance
 Harvey W. Storm
 1ST LIEUTENANTS:
 Ervin D. K. Hoehne
 Carl H. Hatch
 Erwin Wolf
 C. J. Kriese
 Carl Curtis
 Julius E. Platz
 Herman J. Streicher
 Malvin Wang
 Christian J. Randall
 Joseph C. Johnson
 Joseph E. Ash
 Milton D. Berlin
 Elmer D. Kobs
 2ND LIEUTENANTS:
 Henry W. Honold
 Elmer F. Quillen
 Albert B. Hansen
 E. J. Nyenhuis
 R. H. Watson
 James A. Zernecke
 Herbert J. Zernecke
 Elmer D. Gantenbein
 Paul W. Becker
 Lester L. Johnson
 Emmet G. Quirk
 Ambrose H. Nugent
 Edwin C. Yach

Chester R. Zurawski
 Stanley E. Drapes
 Gustav A. Ristau
 Maurice A. Peerenboom
 Grant Gee
 Orlen E. Heldt
 Walter H. Arnston

126TH FIELD ARTILLERY

Camp Beauregard, La.

LIEUTENANT COLONELS:
 F. C. T. John
 J. D. Alexander
 H. A. Morgan
 MAJORS:
 E. P. Beyer
 E. C. Hart
 S. W. Hollenbeck
 CAPTAINS:
 C. F. Schroeder
 W. C. Crocker
 F. N. Knope
 F. O. Dandois
 F. L. Carmichael
 H. E. Whitaker
 G. W. Embury
 C. V. Narlow
 C. S. Bender
 B. J. Richter
 A. E. Axtell
 W. A. Sherman
 M. E. Rabeadeau
 J. G. Richter
 O. B. Hinz
 A. J. Schramel
 F. J. Bloodgood
 C. A. Ingli
 1ST LIEUTENANTS:
 R. P. Schulz
 W. J. Kaiser
 L. Modder
 C. G. Burke
 E. C. Biesel
 H. C. Petros
 W. E. Nieman
 G. A. Johnson
 Burke, J. C.
 Polgar, J.
 C. P. Craemer
 C. L. Davenport
 C. J. Wiedman
 P. K. Wiley
 M. Rohr
 2ND LIEUTENANTS:
 C. J. Pierce
 T. W. Conter
 W. F. Lorenz, Jr.
 G. E. Shepard
 H. Ohn
 F. X. Mages
 H. J. Barbera
 N. G. Josten
 R. C. Stylow
 F. E. Lang
 W. A. Laing
 J. E. Bliss
 C. R. Smith
 L. F. Milligan
 L. G. Reinhard
 O. S. Crocker
 H. F. Bukowski
 R. F. Schneider
 E. A. Schaffer
 A. J. Gimler
 R. H. Storts
 M. S. Zahn
 E. A. Hartl
 E. I. Davenport
 E. A. Haase
 H. J. Retallick
 C. E. Hinkson

121ST FIELD ARTILLERY

Camp Beauregard, La.

COL. Waldemar F. Breidster
 LIEUTENANT COLONELS:
 Edward A. Bolzendahl
 John C. Fritschler
 Kellogg W. Harkins

MAJORS:

George C. Eilers
 Harry T. Ketcham
 Henry J. Lurquin
 Harold Nebel
 Ross J. Quatsoe
 CAPTAINS:
 Gilbert C. Barnes
 Hubert D. Barnes
 John A. Dunlap
 Howard F. Haupt
 Clark A. Ingli
 Chester B. Michell
 Ray A. Nichols
 Robert H. Pratt
 Carl J. Rhodes
 Earl J. Rice
 Archie C. Tweit
 James H. Van Wagenen
 Paul F. Weber
 1ST LIEUTENANTS:
 Melvin Derong
 Clarence Hicks
 Walter F. Hoffman
 Thomas J. Makal
 Frank W. Mostek
 Richard J. Muenzner
 Richard J. Porth
 Carl J. Rauwald
 Norman J. Roth
 Harold A. Segerstrom
 William G. Tisdale
 John Toman
 Emmery E. Tucker
 Paul E. Wright
 Joe G. Zwart
 2ND LIEUTENANTS:
 John W. Brown
 Richard C. Burdick
 Gerald E. Burham
 Francis E. Cornwell
 John J. Donohue
 Bert J. Dunlap
 Ray A. Ehn
 Gary A. Francken
 Paul Gross
 Russell R. Hansen
 David Herb
 Hans W. Helm
 Marvin D. Johnson
 Thomas J. Kelly
 George H. Luce
 Robert A. Moser
 Riley D. Robinson
 Robert Schaefer
 John C. Starkweather
 Donald J. Stickler
 Oliver Tucker
 Philip M. Weisen
 Harold W. Zurn
 WARRANT OFFICER:
 Ervin J. Sartell

162D FIELD ARTILLERY

Henry Barracks, P. R.

CAPTAINS:
 Jose E. Del Toro
 Jacinto Castrillo
 Rafael Capo
 Jacinto Hidalgo
 Miguel A. Balasquide
 Manuel De Diego
 1ST LIEUTENANTS:
 Julio Iguina
 Charles H. Julia
 Ivan Reichard
 William J. Riefkohl
 Rafael A. Torrens
 Salvador Torres
 2ND LIEUTENANTS:
 Franco E. Amy
 Anibal J. Arzola
 Luis M. De la Vega
 Jose Ismael Diaz
 Jaime Fullana
 Pedro Maldonado
 Rafael Subira, Jr.
 Luis R. Villamarzo

An Important Message *for* Organization Commanders



THROUGHOUT this great new army which we are building, the word has gone forth that even the rawest recruit will be given a chance to win a commission. Think what a change this will make in the spirit of your men! Consider too how the fact of mobilization and national emergency itself is changing the attitude of your men toward their profession. Many of them are educated. Nearly all are ambitions for advancement, and eager to learn more of field artillery than is taught in a routine way on the drill field. The Army is faced with a great opportunity to sell itself to our people, many of whom have been totally ignorant of the military. But it stands also in peril of making a miserable failure if it neglects to furnish its new men with the utmost in modern training—technical, tactical, and **inspirational**.

Your men are taking an increased interest in their work. They want to know what is the latest in field artillery both here and abroad. They are anxious to read the personal combat experiences which are beginning to come from the battlefields of Europe. Where else can they get these things if not from our own FIELD ARTILLERY JOURNAL, the only magazine in this country devoted to these matters? True, the JOURNAL is not, and never will be, a popular "soldiers' magazine." It is strictly professional. But don't "talk down" to your men! Don't think that they are incapable of understanding or appreciating discussions of new developments in tactics and technique.

HOWEVER—did you know that there are still one hundred and eighty-three units of regular army field artillery who are not subscribers to THE FIELD ARTILLERY JOURNAL? What are their battery commanders thinking of? Do they really believe that their men are interested only in detective stories and "true confessions"? If so, they are seriously out of step with the times.

AND—did you know that in spite of the fact that many of your officers are comparative newcomers to active service, who ought to be "brought into the family," and to learn what's what about their profession, in most cases less than twenty-five per cent of the officers now serving with field artillery organizations of the regular army are members of the Association of their Arm?

A different and more encouraging condition exists in the National Guard. Here many commanders, as well as officers of more junior rank, are **active and enthusiastic workers** for the Field Artillery Association. A number of their regiments are hundred percenters, and others are approaching that ideal. Many of these officers have stated frankly that there is no excuse for an organization not subscribing to the JOURNAL, and that those officers who are not interested in joining the Association are not sufficiently interested to remain members of the regiment and the Arm. The National Guard has forged well ahead of the other two components in its support of the Association.

This is pretty straight talk. But we thought you might like to be acquainted with the existing situation. Your Chief, who is President of the Field Artillery Association, is solidly behind it and its work.

—THE EDITOR.

Engraved Visiting Cards

We have made arrangements to supply our readers with engraved copper plates and cards imprinted therefrom at prices substantially lower than commercial rates. Our prices vary from 75 cents per line (for engraving only) to 2.40 per line, depending on the style of engraving. We suggest that you send for a style card, showing the fifty-four styles of engraving available, and price list. Our price for imprinting cards from plates is \$1.50 per hundred for plain cards and \$1.90 per hundred for parchment. We suggest also that you leave your plates on file with us; when you need more cards, write or wire.