

*The*  
**FIELD ARTILLERY**  
*Journal*



IN THIS ISSUE:

*Maneuver*

MAY, 1942

*We have ordered a limited number of  
copies of*

# BLITZKRIEG

BY  
F. O. MIKSCHE

This important analysis (see  
page 410) is printed only in  
England, and is expected to  
sell for

**\$3.75**

*Orders will be filled in the order  
of receipt, and the book is  
subject to discount offer as  
stated on page 411.*

## SIGNPOSTS OF EXPERIENCE

Every word of *Signposts of Experience* has an application to what we are doing today. Its timeliness can scarcely be overstated. It will be read through with profit and interest, and then become an addition to your military library which you will refer to again and again.

**\$2.75 postpaid (see page 411)**

## OFFICER CANDIDATES:

These books will help you:

<b>Officers' Guide</b> .....	<b>\$2.50</b>
7th edition just off the press.	
<b>FAB-161, Gunnery</b> .....	<b>.60</b>
(For sale only to members of the military service.)	
<b>Company Administration and Personnel</b>	
<b>Records Cloth</b> .....	<b>2.00</b>
<b>Paper</b> .....	<b>1.50</b>
An easy, authoritative reference for the multitude of problems confronting all commissioned and noncommissioned officers of a battery.	
<b>Drill and Ceremonies for Field Artillery</b> .....	<b>1.00</b>
Based on the latest official publications. Added are numerous excellent illustrations which greatly clarify the text.	
<b>Soldier's Handbook for Field Artillery</b> .....	<b>.50</b>
Customs, practices, and language of the Field Artillery have been added to FM 21-100 to give the soldier the full story and traditions of the field artillery.	
<b>How to Produce an Efficient Firing Battery</b>	
<b>Single copy</b> .....	<b>.20</b>
<b>Lots of 10 or more</b> .....	<b>.15</b>
Practical advice for the battery executive and all members of the firing battery. Reprinted from the Field Artillery Journal.	
<b>Battery Duties: A Practical List</b> .....	<b>.25</b>

### Recommended background material:

<b>Signposts of Experience</b> .....	<b>\$2.75</b>
<b>What the Citizen Should Know About the Army</b> .....	<b>2.50</b>

*For discounts and more complete descriptions of the above books see our larger advertisements in this issue. Above all—*

### SUBSCRIBE TO

<b>The Field Artillery Journal</b> .....	<b>3.00</b>
(For 1941 the pages of its twelve issues totalled one thousand—the equal of several large books.)	

## THE SOLDIER'S HANDBOOK 50c

(See discount offer on page 411)

The tremendous personnel increase in all branches of the Army has made a quick, accurate guide for the newcomer a vital part of soldier training. The Field Artillery SOLDIER'S HANDBOOK is the answer. FM 21-100 is given in its entirety. In addition, customs, practices and language of the Field Artillery have been added to bring home to the soldier the organization, description of materiel, and the traditions of the U. S. Field Artillery. Many an old timer will be glad to have this data in such handy form.

### ORDER THROUGH

**U. S. FIELD ARTILLERY ASSOCIATION**  
1218 Connecticut Avenue, Washington, D. C.

LIEUT. COL. W. S. NYE, *Editor*  
 MAJOR JOHN E. COLEMAN and  
 LIEUT. A. V. RUTLEDGE, *Assistants*  
 LENNA PEDIGO, *Business Manager*

# The Field Artillery Journal

"Today's Field Artillery Journal is tomorrow's training regulations."

MAY, 1942—Vol. 32, No. 5

PAGE

SOME MEMBERS do not appear to realize that the Association is a *mutual* one. The JOURNAL is *not* just another magazine printed for private profit—all income and all savings go toward improving the magazine. Your thoughtfulness will help considerably. For instance, send in your change of address promptly; this will get your JOURNAL to you faster and in better condition, and will save us the money the post office charges when the report of change comes from it. For another thing, take discounts *only* as specifically mentioned in book ads. They can not apply to membership dues. They were initiated as a service to our members, and will be continued just as long as possible, but everyone's cooperation is necessary.

WE APPRECIATE the interested cooperation of the many units who sent copies of their rosters so promptly. Especially warming were the offers to do anything possible for the Association. One of the best things you can do for both the Association and the units is to see that every officer is a member and that every soldier has a chance to read the JOURNAL in his day-room.

NEWER MEMBERS may not realize that we aim to give full service to the field. If an article rings your particular bell, let us know. If you would like to see articles on particular subjects, sound off. If you want books, texts, pamphlets, manuals, or other material, drop us a line; we will get it for you if we possibly can.

## The United States Field Artillery Association

ORGANIZED JUNE 7, 1910

President  
 Brigadier General George R. Allin

Vice-President  
 Brigadier General Lewis B. Hershey

Executive Council  
 Brigadier General George R. Allin  
 Brigadier General William H. Sands  
 Brigadier General C. C. Haffner, Jr.  
 Colonel Rex W. Beasley  
 Colonel Alan L. Campbell  
 Lieut. Col. Ralph C. Bishop  
 Lieut. Col. Thomas North  
 Lieut. Col. Maurice W. Daniel  
 Major George L. Hart, Jr.

Secretary-Treasurer  
 Lieut. Colonel W. S. Nye

THE COVER ILLUSTRATION: by <i>Life</i>	
NEW ASSOCIATION OFFICERS .....	338
MANEUVER OF THE LIGHT BATTALION .....	339
By <i>Lieutenant Colonel John J. Burns, FA</i>	
REALLY RAPID SUPPORT .....	346
By <i>I. G.</i>	
"TANK ATTACKERS" IN ACTION .....	348
By <i>Lieutenant Colonel Stuart Lewis, FA</i>	
A SOLUTION FOR TRAFFIC PROBLEMS .....	353
By <i>Major J. P. Holland, FA</i>	
THE AMERICAN SOLDIER .....	355
By <i>Lieutenant Edmund T. Delaney</i>	
PERIMETERS IN PARAGRAPHS .....	359
By <i>Colonel Conrad H. Lanza, FA</i>	
NOTES ON MILITARY CENSORSHIP .....	364
By <i>Colonel Falkner Heard, GSC</i>	
OAHU ON THE EVE OF THE ATTACK .....	366
By <i>Major R. A. Ellsworth, FA</i>	
SEA ARTILLERY .....	374
By <i>Captain E. S. Bechtold, FA</i>	
THIS WAR DEPARTMENT REORGANIZATION .....	376
OUR SOUTHERN COUNTERPART .....	378
By <i>Lieutenant Edward A. Raymond, FA</i>	
TEACHING OLD DOGS NEW TRICKS .....	381
By <i>Major George M. Dean, FA</i>	
COMMUNICATION PROBLEMS .....	383
By <i>Lieutenant W. A. Scoville, FA</i>	
THE UNEXPECTED ALWAYS HAPPENS .....	387
By <i>Lieutenant Colonel David Larr, GSC</i>	
THE COMPASS, M2 .....	392
ROAD TO DUNKIRK: CHAPTER II .....	396
By <i>Henri de la Falaise</i>	
MOTOR MAINTENANCE IN CONNECTION WITH RADIO MAINTENANCE .....	404
By <i>Lieutenant Colonel N. W. Jones, FA</i>	
INSTRUCTION IS TOUGH! .....	406
By <i>Cadet Captain James L. Centner, FA, ROTC</i>	
DIARY OF WAR EVENTS .....	408
MODERN METHODS OF ATTACK AND THEIR ANTIDOTE .....	410
BOOK REVIEWS .....	411

Published monthly by the United States Field Artillery Association. Publication office 3110 Elm Avenue, Baltimore, Md. Business and editorial office, United States Field Artillery Association, 1218 Connecticut Ave., Washington, D. C. Address all communications for publication to the Washington office. Entered as second class matter August 20, 1929, at the post office at Baltimore, Md. Copyright, 1942, by The United States Field Artillery Association. Subscription price \$3.00; Canada \$4.00; foreign \$3.50; single copies to subscribers, 25 cents; nonsubscribers, 35 cents. THE FIELD ARTILLERY JOURNAL pays for original articles accepted. It is published without expense to the government. Authors alone are responsible for statements made. *Addresses, and changes of rank, will be changed as frequently as desired, upon notification; not otherwise. Changes should reach the editor three weeks before date of next issue. Immediate notice should be given of any delay in the receipt of the magazine. Unsolicited manuscripts should be accompanied by return postage.*

# NEW ASSOCIATION OFFICERS

We welcome as our eighth president, Brigadier General George R. Allin, one of the Field Artillery's most experienced officers. One of the first members of the Association, he has held continuous membership since January, 1911. His interest in its affairs has never flagged, and during the past year the Association and its JOURNAL have enjoyed increasing cooperation and support from the Field Artillery School.

General Allin was born at Iowa City, Iowa, on February 15, 1880. Appointed to the United States Military Academy from Iowa in 1900, he graduated in June, 1904, and was commissioned a second lieutenant in the Artillery Corps.

## PROMOTIONS

General Allin was promoted to first lieutenant in January, 1907; to captain in June, 1914; to major in May, 1917; to lieutenant colonel (temporary) in August, 1917; to colonel (temporary) in June, 1918; and to brigadier general (temporary) in October, 1918. He reverted to his permanent rank of major in February, 1919; was promoted to lieutenant colonel in February, 1928; to colonel in May, 1935; and to brigadier general (temporary) on October 1, 1940.

## SERVICE

General Allin's services between 1908 and 1912 included duty at Fort Douglas, Utah, with the 22d Battery of Field Artillery; assignment as Aide-de-Camp to Brigadier General E. S. Godfrey at Fort Riley, Kansas; duty at the headquarters of the Department of the Missouri River, Omaha, Nebraska; and Instructor at the United States Military Academy, West Point, New York. Assigned to the 4th Field Artillery, he served with that regiment at Fort D. A. Russell (now Fort Francis E. Warren), Wyoming, from October, 1912, to February, 1913; at Texas City, Texas, from February, 1913, to April, 1914; and with the expedition to Vera Cruz from April, 1914, to July of the same year.

General Allin was then ordered to the Philippine Islands, where he served with the 2d Field Artillery at Camp Stotsenburg from October, 1914, to April, 1917. Returning to the United States, he was stationed at the Presidio of San Francisco, California, as an Instructor at the first training camp for World War officers. He was on that duty in July-August, 1917, and was then transferred to Fort Sill, Oklahoma, as an Instructor at the School of Fire for Field Artillery, on which duty he remained until September, 1917. From September to December of the same year he was on duty at Camp (now Fort) Lewis, Washington, and in December, 1917-January, 1918, commanded the 128th Field Artillery at Camp Doniphan, Oklahoma. He then returned to Camp Lewis, Washington, where he served until March, 1918, when he was ordered to Washington, D. C., as Senior Assistant to the Chief of Field Artillery, serving in that capacity until September, 1918.

Promoted to the temporary rank of brigadier general. General Allin was ordered to Camp (now Fort) McClellan, Alabama, where he commanded the 12th Field Artillery Brigade from October to December, 1918. He was then ordered to Washington, D. C., for duty with the General Staff, in which capacity he served until March, 1919. From May to August, 1919, he was on duty with the American Expeditionary Forces in France. Returning to the United States, he was assigned to duty in the Office of the Chief of Field Artillery, Washington, D. C., where he served until August, 1921. He was then ordered to Fort Leavenworth, Kansas, as a student officer at the School of the Line, completing the course in June, 1922, as a distinguished graduate. He remained at Fort Leavenworth, Kansas, as a student officer at the General Staff College, graduating in June, 1923. He was then transferred to Washington, D. C., as a student



*Brigadier General George R. Allin*

officer at the Army War College, graduating in July, 1924. From July, 1924, to June, 1928, he was on duty in Washington, D. C., with the Personnel Division of the War Department General Staff.

General Allin was then ordered to Fort Bragg, North Carolina, where he served with a regiment of Field Artillery from September, 1928, to September, 1930. He returned to Washington, D. C., for duty in the Office of the Inspector General, serving there until June, 1934. From August, 1934, to July, 1936, he was on duty in the Hawaiian Department as Inspector General.

Returning from the Hawaiian Islands, General Allin was assigned to Fort Bragg, North Carolina, where he served with the 83d Field Artillery and 17th Field Artillery until July, 1939. He was detailed to the General Staff Corps in August, 1939, and assigned to duty as Chief of Staff, 3d Corps Area, with headquarters at Baltimore, Maryland. On October 28, 1940, he was assigned to the 18th Field Artillery Brigade, Fort Sill, Oklahoma. He became Commandant of the Field Artillery School, Fort Sill, on January 13, 1941.

## DECORATIONS

For his World War services General Allin was awarded the Distinguished Service Medal with the following citation:

"For exceptionally meritorious and distinguished services. As executive officer and director of training in the office of the Chief of Field Artillery from March 21, 1918, to September 1, 1918, by reason of his high professional attainments, ability, foresight, and judgment, he rendered invaluable aid in solving the many complex problems confronting his arm of the service."

---

Brigadier General Lewis B. Hershey is now our vice-president, succeeding General Allin. The election came too late for his biography to be included here, but it is felt that as Director of the Selective Service System he is so well known that further details are unnecessary.

# Maneuver of the Light Battalion

By Lieutenant Colonel John J. Burns, FA



THE dominating thought is bold speed, based on an aggressive attitude and adequate sound training which beats the enemy to the punch. And whether it is the maneuver of materiel, of ammunition, or of fires, it must be surely accomplished without lost motion.

## MANEUVER OF MATERIEL

### *Observation*

Two elementary truths stand out: there can be no observed fire without observation; there can be no unobserved fire without survey. If a battalion stays in a position, observed and unobserved fires conform to the day and night cycle. But when it is first committed to action in a maneuver situation, it cannot wait for survey; it must beat the enemy artillery to the punch or be wiped out.

This depends largely on the observer. He must be a good shot, able to conduct all types of fire. But above all he must have observation. Because so often this is very difficult to obtain, and then to maintain, the observer should have no other responsibilities. His is a full-time, exhausting, hazardous job.

Selected carefully from each battery, he should be provided with a vehicle to carry telephone, 194 set, OP instrument operators with their personal equipment, some telephone wire, and a distinctive shaped and colored identification pennant. The members must be trained to perform any duty of the section, including those of the officer observer insofar as being able to designate targets and report sensings.

When a battery is operating alone, its observer section works for it. When the battery is operating with the battalion, even though constituting a one-battery echelon, the section works for the battalion as a whole.

Depending on the unit for which it is working, the observer section accompanies the battery or battalion commander's party. As soon as contact is made with the enemy and the scheme of maneuver is known, the battalion commander makes a map or hasty ground reconnaissance. In the presence of his party he explains the probable dispositions of the battalion and gives the observers the mission of obtaining observation over certain areas. He then directs them to their general areas of possible observation posts. Each observer moves out with his section to make a reconnaissance for the required observation. As soon as he believes he has the best observation obtainable, considering time and the mission

of the battalion, he reports his location as exactly as possible by radio to the FDC. If the observation post selected does not overlook his entire area of responsibility, he sends out auxiliary observers from the section, running telephone lines to them. If necessary, he calls upon his battery for additional personnel and signal equipment.

Knowing the frequency settings of the 194 sets at the FDC and at each battery, he has them called in turn. He reports in to the FDC, or if he gets a battery first he adjusts it or fires on targets of opportunity. In principle, the first observer to get observation should fire the first battery in position. In the meantime, the telephone operator goes out on foot to meet and guide the truck laying the line to the OP.

As the action develops, each observer anticipates his displacements by sending a man forward or to the rear to select the next OP. If possible, the telephone line is extended in advance and the new location accurately determined prior to the displacement. In any event, in order to avoid having no observation due to observers displacing at will simultaneously, they should displace on authority from the FDC. When communications are interrupted they use their own judgment.

They should not be known as forward or other kind of observer, but as Observer A, B, or C, corresponding to their battery. All vigorously seek observation, going into the front lines if necessary. If they are close enough or are on commanding ground, or if the targets are located on the forward slope of a hill, observers use forward observer methods; if not, they should use other well established methods.

If they use other than forward observer methods, they can designate targets by polar coordinates. If no map or substitute is available, the polar control point can be the reported location of their OP, the polar direction line being the Y North Line, in case the compass to the target is given, or the line through the polar control point and the battalion reference point. The distance from the OP to the target is determined by the range finder or by estimation.

An observer who is forward a great distance from the guns and has no map or substitute by which to report the locations of his OP or of a target can still open fire. A surely over range with time shell bursting fairly high in the air safely starts him off. He can then report his location with respect to the point adjusted upon, by the most accurate means available to him. Thereafter he can report targets by polar coordinates from his OP, the line to the adjusting point being the polar direction line. Or he can report their location in yards with respect to

the adjusting point. In the meantime, the survey officer will be obtaining the observer's location accurately.

As soon as observers have determined their locations, observer coordination is possible. This requires special training in target designation. Fundamentally it requires the ability to visualize the problem of another observer to whom one is trying to point out a target. Expressions of right and left as well as the use of angles measured from an OP are of little value. Directions north, east, south, or west, and distances in yards, must be used. The kind of target should be described by emphasizing its unusual color, shape, and dimensional characteristics.

By such observer coordination, many times an intersection can be obtained which accurately locates the target and makes bilateral observation possible. More important still, it permits surprise mass fire. Involved in such coordination is the necessity of a simple telephone communications system which will permit one observer to gain quick telephone contact with another, to direct his attention to a target. Lacking telephone communication, the FDC can relay the necessary target description to other observers by radio.

If the observer is experienced and has sufficient information to calculate initial data to adjust a definite battery, he should call the FDC, asking for the battery or the battalion. Then, given the battery direct, he conducts fire according to standard methods. However, if an inexperienced replacement is to conduct the fire, he reports the location of the target and sensings, the calculations being made at the FDC from which all commands emanate.

If an experienced observer lacks information about the location of the batteries and the FDC desires him to conduct fire employing a particular battery, the FDC calculates the initial commands, which it sends direct to the battery. The FDC also determines the factors, the angle T, the direction of the battery from the OT line, and the initial elevation, which it sends to the observer. It then provides direct radio or telephone communication to the battery for the observer to conduct the fire. The observer reports the results obtained.

It must be understood that the displacement of observers to maintain observation is largely independent of the displacement of the batteries to render close continuous support. All observers should observe for the echelon(s) in position. The FDC controls the displacement of observers with a view of having continuous observation, just as it controls the displacement of guns to ensure continuous fire support.

In order to make the fire support more effective, each observer is charged with a secondary mission, liaison with the infantry. This usually consists of informing the nearest infantry battalion commander of his presence.

#### *Liaison*

In contradistinction to the observer section, the liaison detachment has the primary duty of liaison and the secondary duty of observation. It helps provide that close association which is so essential to the coordination of efforts of both arms. Since the most intimate liaison results from placing the artillery and infantry command posts in the same vicinity, this is most desirable. But the duties of an artillery battalion commander involve the control of an intricate unit composed of many scattered elements, so he requires freedom of movement. Then too, if the artilleryman located close to the infantryman is unable to direct the fire of his battalion, his presence serves only to create a dangerous illusion. Therefore there is need for a liaison detachment which furnishes continuous association between the infantry units and artillery battalion. The detachment lives at the CP's of the supported infantry.

It is convenient for the liaison detachment to be divided and trained as four sections. The liaison officer in charge of the detachment and of one section reports before an operation to the infantry regimental command post. Assistant liaison officers with other sections similarly report to the battalions in line and in reserve. The liaison officers should be able to conduct fire, and noncommissioned officers must at least be able to report targets and sense shots for the FDC.

The senior liaison officer should be responsible for all liaison sections. He coordinates their efforts, assigning them to the various infantry battalions in conformity with the battalion commander's instructions. He sees that they are on the job, that they send back intelligence data. He keeps them informed of the situation.

SCR-194 radio liaison sets should be with each liaison section operating with the front-line battalions. As regards fire missions, front-line liaison officers operate directly with the FDC just as do the observers. Intelligence data, however, go through the liaison officer at the infantry regimental CP. The latter should verify and collate information received from various sources and transmit it to the artillery battalion S-2.

It is helpful to denote liaison groups as Red, White, or Blue according to their operation with the 1st, 2d, or 3d battalion of the supported regiment.

#### *Survey*

A survey section must also be constituted in each battery. The instrument sergeant and two men in a jeep, with the battery survey equipment, suffice. The battalion survey section, in a command car or one-half-ton carrier, should have a 194 radio set in addition to the survey equipment.

Only when the battalion is acting as a unit do the battery survey sections operate under its complete control. Then the battery instrument (survey) sergeant rides with the survey officer, while members of his battalion section find seats in the vehicles of the battery sections. The

survey officer and sergeants constitute a part of the battalion commander's party. The battery vehicles with the remainder of the survey personnel travel with the remainder of the battalion detail.

Being present when the battalion commander issues his instructions to the observers and the rest of the party, the survey officer has a general notion of where the observers are going to be. As soon as the dispositions of the battalion are sufficiently known, the survey officer presents a plan to the battalion commander. Upon approval he decentralizes the work into tasks among the battery and battalion sections. Work is immediately started. The battalion commander, when he issues his order to the battery commanders, includes such details of the survey plan as the initial point, base point, and reference point, if these can be pointed out on the ground or on the available map.

Suppose that there are no maps or substitutes immediately available. The survey officer can assume an initial point, assigning an arbitrary elevation to it. Through it he lays out the orienting line and determines its instrumental Y azimuth for the use of all batteries. He arbitrarily selects any point in the target area at least seven thousand yards away, which he calls the base point. All of this being reduced to his grid sheet, he determines the base angle for each battery and puts all this information on a tag tied to the battery place mark. Meanwhile, a traverse is run forward to a point offering a view of as many of the observation posts as possible. A survey base line is run from this point to another similar point. The survey officer radios each OP in turn to display its identification pennant near its position. Each OP is then located by intersection from the ends of the base line.

Having located the OP's on his gridded chart, the survey officer determines the angle at each OP, between his own location and the arbitrarily selected base point. He radios this data to the observers, who then lay the zero of their instruments on the base point by referring to his location.

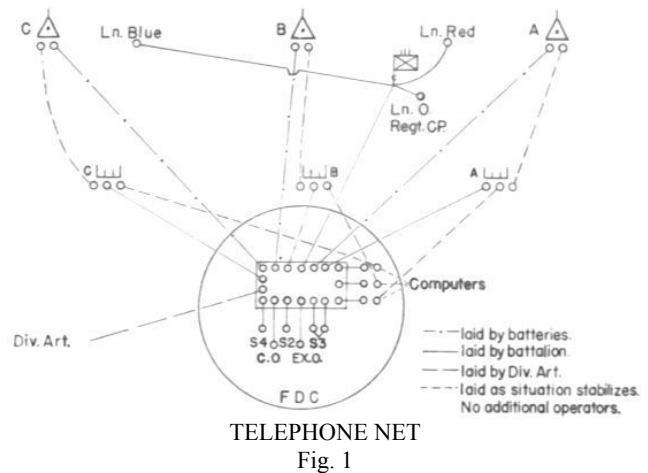
Failure of radio communication should do no more than complicate this problem, for in view of the transportation available to the survey section the method still works. If pennants are not visible due to the nature of the terrain, distinctive identifying rockets should be discharged by the observers and the survey officer, for sighting purposes.

In principle, surveys are initiated to determine the exact location of battery positions, OP's, and base, check, and reference points *as soon as the operation area is known*. Survey operations are carried on continuously to extend the control in case of an advance or withdrawal, and to improve existing data. However, though surveys are necessary for unobserved fires, no artilleryman who has observation and communication is ever justified in delaying the delivery of essential fire because of the lack of a map, map substitute, or survey data.

### Communication

For the timely delivery of fire, the expeditious handling of communications is as important as early observation. The wire sections must start their work as soon as the operation area of the battalion is known. However, radio should be used initially and until wire lines are laid, and thereafter when the wire is "out." As the action develops, lines are extended. They are continuously improved by servicing, for wire is still the most reliable communication means of the artillery.

Provision must be made in the communication system to change over from centralized to decentralized control and vice versa. Bold efforts must be made to cut down the length and number of lines, eliminate useless switchboards, and effect an equitable distribution of the work. Simplicity is sought.



At first sight the telephone net in Figure 1 seems highly centralized and from a technical communications point of view it is. It does not seem to lend itself as readily to decentralization of *tactical control* as the net which includes both battery and battalion switchboards.

As an action develops, three possible situations can confront a battery with relation to its battalion: it can be completely detached, it can displace alone, it can displace as one of a two-battery echelon. If detached, possessing its own switchboard and wire laying equipment, it is capable of establishing its own independent net in its new area. If it displaces alone, as an echelon of the battalion, it leaves all wire and proceeds to the new area; there it lays new lines as directed. If it displaces as part of a two-battery echelon, the displacement is the same as if the whole battalion were displacing, except that the wire net at the battalion CP is left in for the use of the remaining battery, which thus has wire communication with all observers. Centralized tactical control thereby passes easily to effective decentralized control.

The net shown in Figure 1 offers some other very definite advantages. Since the FDC can be located conveniently near the battery positions, the lines to them

should be relatively short. The battalion is charged with laying these lines, the lines to the CP if situated away from the FDC, the liaison lines, and interior lines of the FDC and CP. The lines from the battalion switchboard to the battery OP's are laid by the respective batteries.

This net can be speedily installed because the batteries are simultaneously laying the three long OP lines while the battalion is laying the long liaison lines. The battalion with its greater facilities can usually lay the short lines to the batteries and the interior battalion lines before the longer lines are in. After laying their OP lines, the battery wire trucks remain as close as practicable to the OP's, prepared to extend the lines forward. Similarly, if the number of trucks makes it practicable, the battalion keeps a wire truck well forward to extend the liaison lines promptly.

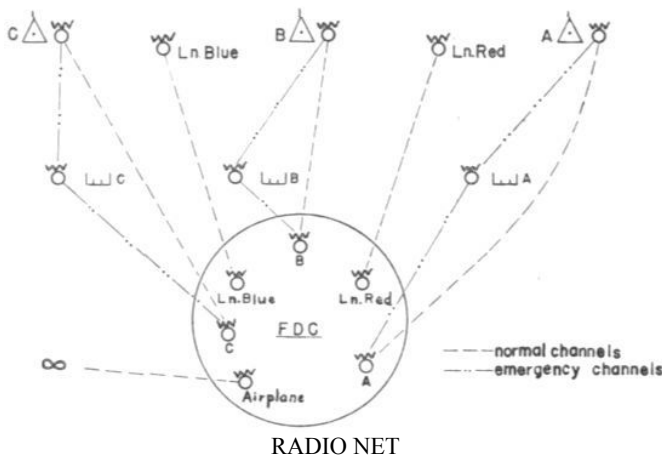
The liaison sections with the front-line battalions lay lines forward from the infantry switchboard to their posts. These lines are pushed forward before displacing, if practicable. Liaison officers make every effort to maintain wire communication with the FDC, resorting to use of a

thorough instruction of officers and communications personnel with a view of exploiting all possibilities of the whole communications system.

Development of the radio and wire nets proceeds simultaneously. Radio will have to be relied upon initially, however, so it is important that all 194 sets be placed in operation as soon as they reach their posts. To avoid interference, the operators at the gun positions must be instructed to listen until they receive instructions from the FDC by radio or telephone, or hear their OP operators in conversation with the FDC when they turn their sets off. If communication with an OP is established first, the observer should fire the battery or give it instructions consistent with the mission.

If after a reasonable time the observer cannot get through by radio to the FDC or to his battery, he switches to the frequencies of the other batteries to receive instructions through them from the FDC or to fire the battery if it is also out of communication with the FDC.

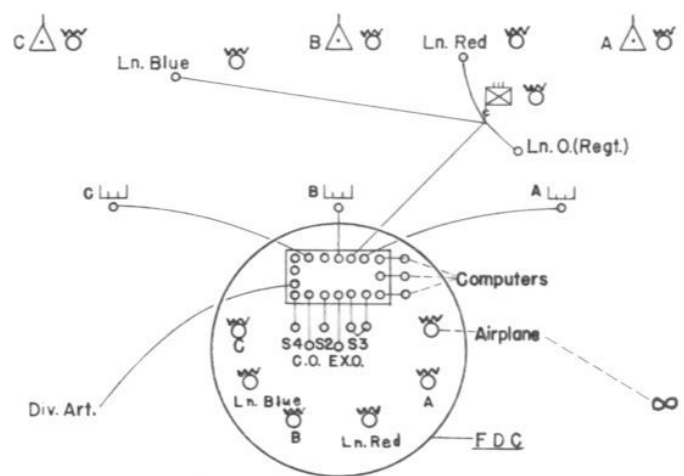
This flexibility permits the first observer, terrestrial or



telephone head on their end of the line if radio is impracticable and wire cannot be brought all the way up.

Speed in operation is obtained by the use of only one switchboard. The computers remain plugged through to their respective batteries. The observers can report directly to the S-3, who has two phones. Any phone can reach any other phone by simply going through the one switchboard in the battalion net. Besides, this wire system parallels the radio net shown in Figure 2. Consequently, while either net can be used independently of the other, most channels of one can replace the corresponding channel in the other. This interchangeability is imperative if extensive readjustments are not to be forced by disruptions in either net.

For example, if an OP line goes out the observer resorts to direct radio communication with the FDC with no change in operating procedure. If a battery line goes out, the battery operator works with the FDC, the OP operator being instructed to use only his telephone. This presumes a



aerial, "in," to fire the first battery in position. Since the FDC assures coordination, all observers try to check in there first. The desirability of this is obvious when the short time required to lay telephone lines to the batteries is considered. By the time an observer is in position, one or more of the lines to the guns should be in. Since each observer has a radio set, there are three chances of one's getting radio communication with the FDC and thus firing the battalion.

The combination radio - wire system shown in Figure 3 will probably be used during the early phase of an action. In practice this combination system has given faster and better service than either the all-wire or the all-radio system, because all observers can report targets and all computers can send down fire commands simultaneously. This avoids a bottleneck on information reports



and permits an evaluation of the targets reported on the basis of their importance and not upon the ability of one observer to get his report through before another's.

It should be clearly understood that the nets shown in Figures 1, 2, and 3, although adaptable to passing from centralized to decentralized control, are designed for quick installation and fast service. This wire net, because of the dangers due to the centering of so many lines in one switchboard, should be expanded as the situation stabilizes. The ideal would be to lay, in addition, direct lines from each computer and each observer to his firing battery.

#### *Unit Echelons*

The combat echelon may be defined as that part of a unit essential for combat for the first few hours after commitment or displacement. For convenience, the remainder of the unit may be called the service echelon.

No rigid conception of what constitutes the combat and service echelons of units should be entertained. The time when men were last fed or the condition of roads as they affect supply all have a bearing on their composition.

Ordinarily the nucleus of the combat echelon of the headquarters battery is the whole detail, and of the firing battery is the detail, the executive's truck, and the firing battery less the fifth section. The S & A Battery and the service echelons of the other batteries constitute the service echelon of the battalion, under the command of the S & A Battery commander.

When it becomes evident that combat is imminent or if it appears at the beginning of a march that contact with the ground forces of the enemy is possible during the day, the battalion should be divided into a combat and a service echelon. Men in the combat echelon should carry lunches.

In moving into a rendezvous or an assembly or bivouac area preparatory to an attack, the parties should be dispersed in one group, the remainder of the details in a second, and the firing batteries in a third, all in the same general area. If this area is more than 10,000 yards from the gun positions, the service echelons may also be brought to it; otherwise they should be held in a concealed area more than 10,000 yards behind the gun position.

During the periods of waiting in the rendezvous or assembly area, everything possible is done to expedite the entry of the combat echelons into action. The situation is explained to all men as far as practicable in order to ensure their intelligent collaboration. Members of the parties and details draw equipment which is ordinarily not carried continuously, such as aiming circles, telephones, etc. This is all checked so that necessary adjustments can be made then. The guns are partially prepared for action. The combat echelons are stripped of everything not essential to combat and which will not be needed for a few

hours. It is astonishing how the organization and stripping of combat echelons speeds up entry into action.

Only the combat echelon moves to the position area or displaces in the daytime. A twenty-mile separation between the combat and service echelons is not serious for motorized artillery. The service echelons displace at night, and then only if the displacements of the guns justify the uprooting of installations whose value and service increase tremendously when they are left in a well concealed area for a few days.

The vehicles of the combat echelon should be dispersed in the vicinity of OP's and CP's, the prime movers being well to the rear of the guns. Mechanics can be sent up to make minor repairs to these vehicles. Major repairs should be made only in the service area. Here too supplies are broken down and the battalion ammunition dump established.

The problem of feeding under this arrangement is rather simple. It may be adopted as standing procedure that the evening meal is served in the service area early enough to permit the kitchen truck to depart for the combat echelon area at dusk. Eating in the combat area is by shifts so that all installations are constantly manned. Observers not needed during darkness may come in with their sections. Reliefs are sent to the men left out. The kitchen truck having remained there all night, breakfast is fed first at the combat echelon; all personnel who must scatter to various posts before dawn can thus be fed at one time. The kitchen provides lunches to the combat echelon personnel and returns at dawn to the service area to feed the men there and to pick up the rations brought up to the service area during the night. Issuance of lunches ensures men at least getting a noon meal, although the probable future use of hot food and liquid containers may avoid the necessity for this issue.

This organization of stripped combat echelons speeds up entry into action and takes a load off the battalion commander during critical periods. It also reduces the amount of personnel and equipment exposed to danger, and permits the service personnel to work and sleep in comparative security.

#### MANEUVER OF AMMUNITION

First recall a few principles of ammunition supply: the trucks should carry as much of the maximum load as practicable: mobile loads should always be complete; the quantity of ammunition, generously calculated, which will probably be expended from a particular position should be placed on the ground nearby; resupply of ammunition should be automatic; and prime movers should be used for ammunition resupply only very exceptionally.

If reconnaissance reveals that the roads to the position area are in poor condition, a battalion dump should be established in the assembly area. The greatest load permitted by the roads should be sent forward to the positions,

the remainder of the ammunition being left at the dump.

If great speed is essential in the occupation of a position, the fifth section should not be part of the combat echelon. In this event the executive's truck and each of the prime movers discharge one-half of their loads at the pieces, and are refilled from the fifth section at the prime mover park, which should be at least a half mile from the guns. The ammunition remaining in the fifth section is dumped at the gun positions at the earliest opportunity.

If the fifth section accompanies the guns to position, it is unloaded. The loads on the executive's truck and prime movers constitute the immediate reserve, which should be kept intact. Similarly, as ammunition is expended, it is replaced by the fifth section trucks which when empty return to the service area. The commander of the S & A Battery immediately dispatches two of the four trucks and trailers of the battery's ammunition section to the battery's prime mover park so that the battery again will have a complete mobile load. Empty trucks are grouped and sent to the ammunition supply point as soon as practicable. This system centralizes the control of ammunition supply, but it also places the responsibility on each battery to keep sufficient ammunition on the ground near its guns and a complete mobile load.

The supply officer strives to have half a battalion load arrive at the service area just before the first half of the battalion load is expended. This requires advance planning involving a consideration of distance, possible speeds, weather, rates of expenditure, etc. He can always gain time by an early dumping in the service area and prompt dispatch of the empty vehicles to the supply point. It should be observed that maneuvers cause an underestimation of ammunition requirements, for possible targets in war disclose themselves by firing.

The supply officer keeps in touch with the ammunition situation through a representative at the battalion CP. This man keeps a running balance of the ammunition on hand in the batteries.

MANEUVER OF FIRES

The greatest difficulty lies in obtaining an accurate location of the target, for either observed or unobserved fires. The air observer can be of inestimable help, as ground observers have difficulty not only in locating the target accurately, but in reporting its location if they have only an ungridded map or substitute.

If it is standing operating procedure that the lower left corner of the photo is the polar control point and the left edge the polar direction line, the observer can report his location or of any discovered target by using polar coordinates in mils measured clockwise from the polar direction line and a 1/20,000 scale for distance from the polar control point. The need for a common reference point immediately vanishes. A convenient instrument for this purpose is shown in Figure 4 below; not only does it permit the rapid plotting of points with an accuracy consistent with that of other locations, but it permits a rapid transfer of points from a map of 1/62,500 scale to a firing chart of 1/20,000 scale. If used to transfer points to a photo, the polar control point should be the diagonal center of the photo to eliminate angular errors, and a K for the 1/20,000 scale used. All observers and FDC's should have such an instrument or a substitute.

It is essential that the approximate locations of the batteries, OP's, reference and base points, and CP's be reported early in the FDC. There an overlay is made up showing these and the infantry command post locations for distribution to survey, liaison, and observer personnel, and to the infantry and higher headquarters. This overlay of approximate locations does much to obtain tactical coordination of the fire of the battalion—the infantrymen know approximately where the observers are located, and the observers where the batteries are. As soon as possible an overlay of accurate locations is furnished observers and liaison officers.

The fire direction center necessarily coordinates the displacement of observers so that the battalion will have continuous observation of particular areas. The observer should anticipate and provide for displacement to

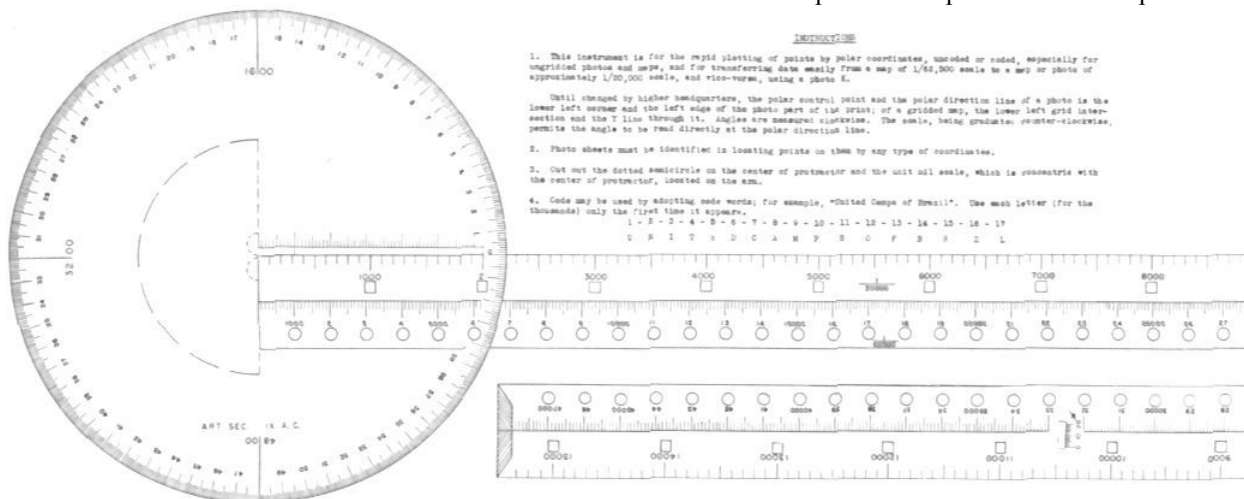


Figure 4

his next position. If practicable, he has it reconnoitered and the wire extended to it before he moves. In close, flat country, if he is up in the front lines he may have to advance with the infantry. He notifies the FDC of the probable time when he will displace. The FDC usually tries to keep two observers in position while one is displacing.

The FDC also controls the displacement of batteries so that support is continuous. A good rule of thumb is to start moving the battalion when the range to the front line is about one-half the maximum effective range.

This displacement can be made by the battalion as a unit, another battalion of the division temporarily taking over its infantry support missions. This is by far the simplest way, but it changes responsibility for continuous support in the middle of an action. It has the additional drawback of requiring establishment of communication between the infantry and the relieving battalion. Referring to Figure 1, wire communication can be obtained by splicing the liaison line to the division artillery line, which should be plugged through the division artillery switchboard to the new supporting artillery battalion. It is, however, a precariously long line established through two switchboards at a critical time.

It is usually better to displace the battalion in two echelons, leaving the battalion responsible for rendering continuous support to its supported infantry. The situation will determine whether the one- or the two-battery echelon should displace first. Sometimes all batteries will displace singly.

Consider first the displacement of one battery followed by the two-battery echelon. The second echelon can come alongside the first, or leapfrog it if the situation is moving rapidly.

Prior to the displacement, all observers and liaison officers are informed in detail. Usually everything except the hour can be announced some time in advance. This forewarning is essential if the movement is to be well executed. The battalion and battery commanders, with details (less observers and the personnel essential for operation in rear area), push forward to the new positions. The battalion commander selects positions for all batteries. If telephone communication exists in the rear area, the battery and FDC base 194 radio sets are available. They are set up in the new position and normal radio communication established with observers and liaison officers.

The survey officer should already have carried the survey forward as the infantry advanced. He locates the new battery positions and other points. The battalion wire section sets up a switchboard and starts lines to the battery positions. The battery details start lines to the observers. The relief horizontal and vertical control operators and computers, under a staff officer, accomplish necessary drafting to start fire direction when the first echelon arrives.

Battery A is brought up. An observer conducts its fire directly, using any communication (usually radio)

available. When Battery A is functioning smoothly the remainder of the battalion is displaced.

In a leapfrog displacement, Battery A's switchboard is set up near its position. Conduct of fire is handled by the battery observer. At the CP of Battery A a base liaison set operates almost independently, according to the scheme of maneuver announced by the battalion commander. The battalion switchboard and the usual battalion setup (less one battery) is established beyond the one-battery echelon.

If the two-battery echelon (B and C) moves out first, the wire communications at the battalion CP (less some local lines) are left in. The commander of Battery A goes to the battalion CP and takes over all FDC charts and the wire required for the operation of his battery. The horizontal and vertical control operators, the Battery A computer, and the switchboard operator should carry on with his battery. All observers still in position continue to report targets to what has become the Battery A computer, and the switchboard operator should carry on with his battery. All observers still in position continue to report targets to what has become the Battery A command post.

The battalion CP, less elements mentioned above as being left at the old position, moves to the new area. There a new firing chart incorporating useful data from the old chart is set up. As soon as communications with any observer and one of the batteries is established, Battery A may be displaced if the situation permits. If Battery A is not moved immediately, the observers handle fire missions by phone with it and by radio or phone with the advance echelon.

Throughout this discussion of the maneuver of the battalion by its commander, the need of speed to beat the enemy to the punch and to accomplish necessary survey work before dark is stressed. For observed fires, boldness in vigorously seeking observation and in delivering fires as soon as possible is indicated as a first requirement. The development of coordination among observers to permit the delivery of surprise mass fires is given as a second requirement. Closely associated with these, the need is shown for a simple communication system which lends itself to quick installation, which provides for passing easily from centralized to decentralized tactical control, and which renders prompt efficient service. How the organization of a stripped combat echelon in the battalion can contribute to speed and to the security of the battalion is discussed.

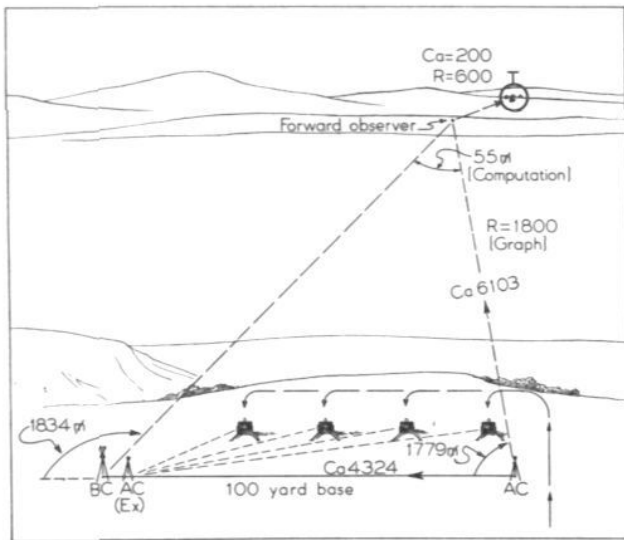
Based on the assumption that all positions may have to be occupied indefinitely, it is suggested that surveys always be initiated at the earliest moment and that the time for their completion be shortened by coordination between the survey officer and the observers.

Lastly, methods of ensuring automatic supply of ammunition to the firing batteries are included to assist the battalion commander in maneuvering his battalion.

# REALLY RAPID SUPPORT

Alert was the word of the moment. Our forward observer had signalled that we should be needed soon. I had my battery marching in open column on the road when the message came, "Go into position." I could see defilade all about me, but there wasn't a good OP in sight. Rapidly selecting a satisfactory gun position, I deflected my column to it.

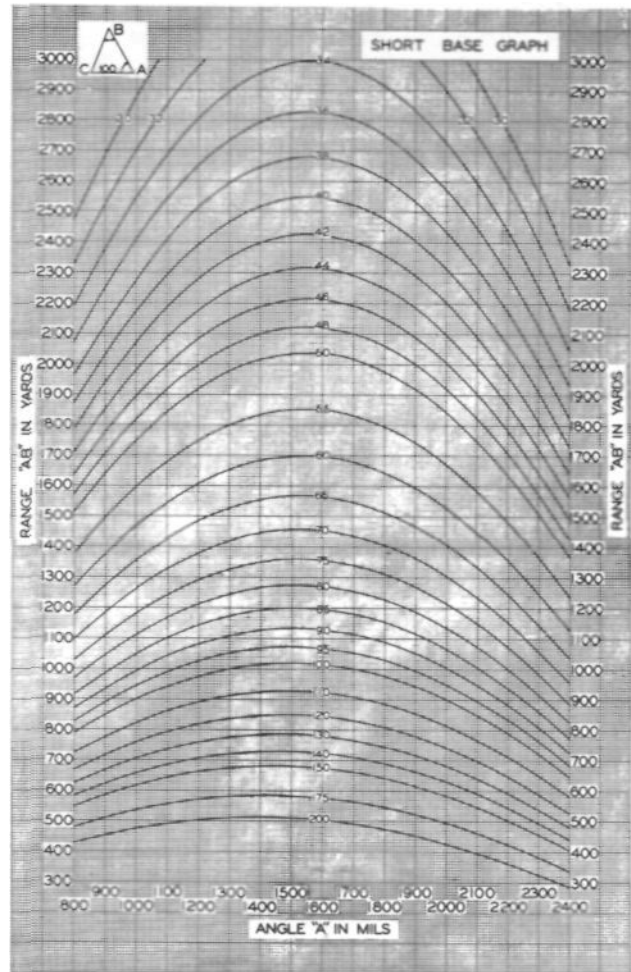
Already there was quite a fuss coming from our advance guard meeting engagement. Estimating a line perpendicular to the direction of the sound, I commanded "Aiming circle here, BC scope there." The aiming circle operator had previously stripped the case from his instrument, and had the declination constant already set off when he received my order. Two chainmen with a tiny reel, carrying 100 yards of wire, started unreeling on the run to measure a base from the aiming circle in the direction designated. The BC 'scope operator dogged the heels of the chainman with the reel, and as soon as the 100-yard base was measured, set up the 'scope with the chainman's assistance. While the BC 'scope operator was busy setting up and laying on the aiming circle with a deflection of 3200, the aiming circle operator measured the compass of the base. Then both reported "Ready." We were in continuous contact by radio with our forward observer, so I sent "Ready for rocket." Shortly there appeared a white star parachute flare about a mile in front of us. It was a little to the right of where I had estimated it would appear, and was drifting farther to the right in the breeze that was blowing gently. Each instrument operator had a hand upraised to indicate he had picked up the rocket flare and was tracking it with his instrument's vertical hair. Seeing their signals of readiness I blasted once with my whistle and they instantly stopped tracking to take a reading.



By I. G.

EDITOR'S NOTE: *Another brand new but thoroughly tested development which has not yet been incorporated into official texts. Designed primarily for armored units, it is equally applicable to motorized or other organizations.*

My crew of three special assistants were sitting on the ground beside me. Their succinct titles of "Recorder," "Graph Operator," and "Gadgeteer" briefly describe their functions. The recorder had the compass of the base as 4324, when the aiming circle operator reported his reading to the flare, "Compass 6103." The recorder subtracted and announced, "Angle A, 1779." The BC 'scope operator reported "1834" (the clockwise angle from the base to the flare, i.e., the exterior angle of the



short base triangle). From 1834 the recorder subtracted 1779 and announced "Angle B, 55."\*

Then the graph operator went to work on his Short Base Graph. Tracing angle A of 1779 up to its intersection with the curve for apex angle B equal to 55, he read the range "AB" as 1803, but he announced "Range, 1800 yards."

The gadgeteer took his cue. With a rapid plotting board, scale 1:40,000, he plotted our gun position (location of the aiming circle). The location of the flare, marking the forward observer's position, was assumed to be the center of the board. The pin marking our gun position was placed at a range of 1800 yards from the center, and at an azimuth such that the compass from the guns to the forward observer was the same as read on the aiming circle, 6103. Using the forward observer at the center of the board as a base point, and polar-plotting the targets he designated from his position, we obtained our data and fulfilled our mission.

\*The sum of the interior angles of any triangle is  $180^\circ$  or 3200 mils. The procedure here described uses the BC 'scope as a "subtracting machine" to deduct one interior angle automatically from 3200 mils. Further subtraction of Angle A leaves a difference equal to Angle B.

How did we fulfill our mission? The guns didn't halt until their prime movers had dropped them in position. The executive established the battery along the base about twenty yards from it, so there would be no interference with the operators observing the rocket flare. He had another aiming circle set up on the base about three yards inside one end. Using the base as an orienting line, he laid the battery on a base angle of 1600. When the recorder announced "Angle A, 1779," the executive commanded, "Right 179, record base deflection." Simultaneously with the survey operations and the occupation of position, one other group was busy. The radio section was receiving target designations from the forward observer, such as "Compass 200, Range 600." The gadgeteer reduced these to firing data—BDR 110, 2400. The first salvo was practically guaranteed within 200 yards of the target, and refinements were made by usual forward observation methods.

Six minutes elapsed between the order to go into position and our first sensing, "One hundred left, one hundred short, fire for effect." Our forward observer slipped on one sensing and said, "What a beauty!" We fired another volley.



TRUCK OF STRICTLY MILITARY TYPE

On May 26, 1941, the Chief of Field Artillery requested the development of improved trucks for Field Artillery use. These trucks have low silhouette, short wheel base, high ratio of torque weight, and low unit ground pressure. It was decided by the QMC Technical Committee to set up a development project covering  $\frac{3}{4}$ -ton,  $1\frac{1}{2}$ -ton, and 3-ton sizes. The photograph shows one example of a  $\frac{3}{4}$ -ton weapons carrier. This vehicle has a 98" wheelbase, uses a 230 cubic-inch engine, and is  $51\frac{1}{2}$ " high over the hood. Tires are 9.00×16. The vehicle will weigh, with  $\frac{3}{4}$ -ton payload, about 7,000 pounds. The body on the new model is 70" wide as compared with 48" in the present vehicle, and has adequate seats for eight men. Preliminary tests of the performance of this vehicle indicate considerable improvement over the present ones used.

# "TANK ATTACKERS" IN ACTION

By Lieutenant Colonel Stuart Lewis, FA

A number of provisional "Tank Defense" forces were organized by the First Army for the 1941 maneuvers in the Carolinas, their primary missions depending upon the arm which formed the basis of their organization and the type of their materiel. Of these organizations "Army Detachment No. 1," or "Tank Attacker 1" as it became known, probably had the most contact with "Red" armored forces. This TA 1, commanded by Colonel John T. Kennedy, was composed of four combat teams, two of them formed from infantry units. The remaining teams each comprised one battalion of truck-drawn artillery (75-mm. M-2 guns) and a company of infantry. At times during both the training period and the maneuvers, a platoon of engineers was attached to these artillery-infantry combat teams. Experience as commander of one of these latter organizations is the basis for this article.

## TRAINING

The two artillery-infantry combat teams reorganized their three four-gun artillery batteries into four batteries of three guns each. Combat Team 3, which the writer commanded, formed two reconnaissance detachments which habitually preceded the team on the march and reconnoitered the zone assigned the team when in alert positions. In addition, each of the four firing batteries had its reconnaissance party. A pioneer platoon was formed by drawing upon each battery, this unit having the mission of repairing bridges, providing road blocks, and laying mine fields. The infantry company was broken down into local security detachments which accompanied each of the firing batteries, the pioneer platoon, and the six-gun 37-mm. platoon of the artillery battalion headquarters battery. The heavy-weapons platoon of the infantry company, assisted by a squad of the pioneer platoon and at times a two-gun 37-mm. section, normally protected the combat team CP.

No wire communications were used, except that when occupying alert positions near the CP of TA 1 a line was laid from lower to higher headquarters. Communication within the combat team, and with TA 1, was by means of the SCR-245 radio, ten of which were furnished each combat team. SCR-194 radios were used within the batteries.

At the beginning of training, CT 3 prepared a standing operating procedure which was habitually followed (modified as field service brought out its deficiencies) and adherence to which resulted in a smooth-working machine during combat operations.

For seven weeks TA 1 was in the field daily, engaged in unit training, opposing imaginary armored forces, and at times employing as the "enemy" a company or platoon of light tanks which were made available.

## EXPERIENCE

GHQ phases of the maneuvers demonstrated the soundness of the use of special task forces to combat armored penetrations. Although TA 1 was only employed during three days of the first phase of the GHQ maneuver, it was credited with playing a large part in breaking the backbone of the armored corps, which for the first time found itself opposed by a force which matched fire power with fire power and stood its ground. And not only stood its ground, but hunted out armored elements and attacked them.

## METHODS EMPLOYED

The SOP was merely a simple guide, setting out the principles to be followed for marches, bivouacs, and combat operations. Its use proved its value as a means of coordinating movements and operations of the combat team, by insuring that all elements of the command would know at all times what the other elements were doing under specific conditions. It is given here in full for what it may contain of value to similar organizations:

## STANDING OPERATING PROCEDURE

1. *Purpose*—To eliminate as much as possible the repetition of detailed instructions to the various elements of the Combat Team, and to reduce to routine its combat operations.

2. *March Formation*—Formation of the Combat Team for road marches will be as follows: Reconnaissance Detachments (two); Pioneer Platoon (one squad equipped with pioneer tools from each of the firing batteries); Batteries D, E, F, and G, accompanied by their respective infantry security detachments; Command Post Detachment; Infantry Heavy Weapons Platoon; Artillery 37-mm. Gun Platoon. Unless otherwise ordered, trains of the Combat Team will follow the main body by bounds.

Distance between vehicles on the road will be maintained at 50 yards unless otherwise ordered. "Bottle necks" such as intersections of heavily traveled roads will be passed at close interval, the column closing up when signalled to do so from the head, taking normal interval again when directed. At a halt vehicles will drive to the right of the road as far as possible and will maintain their interval.

Maximum speeds in column will be 25 miles an hour on paved roads and 20 miles on dirt roads during daylight. Speeds at night will depend upon condition of roads and weather, and traffic conditions; and whether or not lights are to be used. Speeds for night marches will be announced prior to each march.

3. *Bivouacs* — When time permits, a billeting party, with representatives from each unit, will proceed to the bivouac area in advance of the Combat Team, plan the organization and occupation of the area, and will guide the units in upon their arrival, *without halting the column*. Vehicles will be concealed by individual units in their respective areas, and kitchens will be set up at a distance of 200-300 yards from main installations if space will permit. Latrines will be established and their location announced as soon as a bivouac area is occupied. Latrine pits will be filled and marked and the area thoroughly policed when the Combat Team leaves a bivouac. Policing of respective areas is the responsibility of the unit commanders.

4. *Defense of Bivouacs*—Defense measures for the protection of bivouacs and "Alert Positions" are primarily the responsibility of the Commanding Officers of the Pioneer and 37-mm. Gun Platoons, who will promptly reconnoiter the area, coordinate the defense plan and place mine fields and guns in position. Close-in defense of the area will be provided by the infantry detachments, under the supervision of the infantry company commander. During night operations, sentries will be kept on duty at strategic points at all times.

5. *Combat Employment*—In general, the tentative plan for the combat employment of this team is as follows: Prior to commitment by the Detachment Commander, all reconnaissance elements will make a thorough map reconnaissance of the area, and such ground reconnaissance as will be permitted.

Upon commitment of the Combat Team, the two reconnaissance detachments will initiate "distant" reconnaissance in the zone assigned the team, under a plan to be announced by the Combat Team Commander in each situation. The four firing-battery commanders will make a thorough "close-in" reconnaissance, their primary consideration to be given to possible positions affording adequate *fields of fire*, and all possible routes thereto. Upon completion of this close-in reconnaissance the battery commanders will return to their batteries.

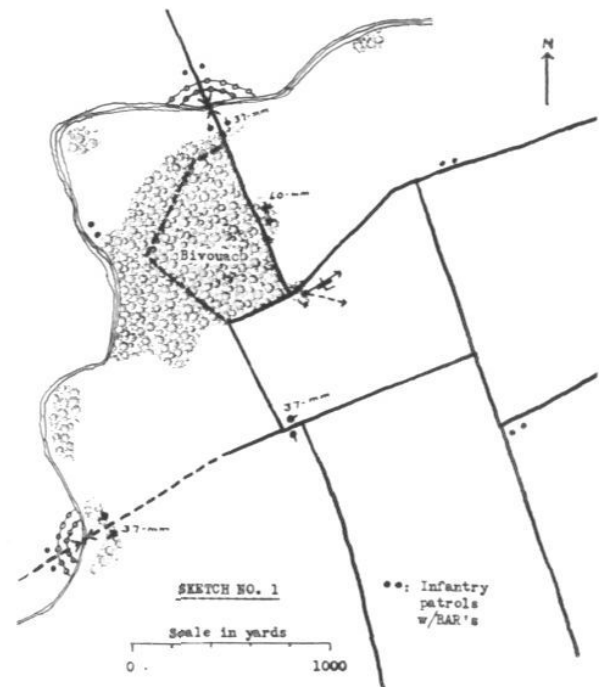
All elements of the Combat Team will initiate and carry to a conclusion immediately upon moving into any position, a thorough reconnaissance of their appropriate part of the area, giving consideration to all terrain features both favorable and unfavorable to the operation of the team. All information thus secured will be reported at once to the Combat Team CP.

Normally the firing batteries of the team will be disposed in triangular formation, if terrain permits—D Battery on the right, E Battery at the forward apex of the triangle, and F Battery on the left. Within the battery the three guns will be disposed in triangular formation, giving all-around fire. G Battery will normally remain in reserve in the initial phase of an engagement but will be prepared to move quickly to meet any threat. Modification of this "normal plan" of attack will be made in any situation to meet developments as they are reported, or anticipated.

Additions, deletions, and complete changes will be made in this tentative STANDING OPERATING PROCEDURE as work in the field brings out its deficiencies. It is announced, with future changes, as an aid in the training of this Special Task Force (Combat Team 3) to promptly accomplish its mission: "To move out in offensive action, meeting hostile threats and destroying hostile forces before they can have decisive effect on the Army's operations."

#### ORGANIZATION OF BIVOUAC OR ALERT POSITION

Sketch No. 1 shows the typical organization for defense of a bivouac area or alert position, when contact was imminent or expected. It shows an actual position occupied



during the afternoon and from which an attack was made the following day against armored elements about three miles to the southeast.

Infantry patrols armed with Browning automatic rifles were always placed on avenues of approach several hundred yards from the position, with instructions to take cover on the approach of enemy scouts or reconnaissance parties and allow them to enter the patrolled area, where they could be captured at the rear installations. A part of the patrol habitually stalked such enemy scouts or parties back to the position, giving the alarm and aiding in their capture. This prevented scouting parties from turning back as soon as they sighted our patrols, and conveying the information gathered.

During daylight hours the same precautions were maintained as at night, and all reconnaissance parties were sent to conduct distant reconnaissance for the location of armored forces or threats, and to seek combat positions and routes to them.

The six 37-mm. guns, the two 60-mm. mortars, and the two .30-caliber light machine guns were always placed in position to defend the area, while the twelve 75-mm. guns were normally left limbered and ready to leave at a moment's notice to meet any threat. Occasionally, due to terrain, it was also necessary to place one of the three-gun 75-mm. batteries in position for the defense of a bivouac.

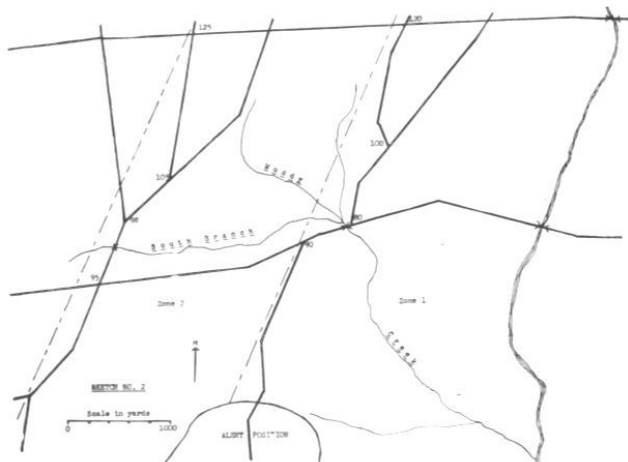
In bivouacs or alert positions all vehicles were habitually headed out, eliminating the necessity of backing and turning when the order was given to move out.

Mines were used, as shown on the sketch, where narrow avenues of approach existed. Such mine blocks were always heavily guarded to prevent tankers or other armored personnel from dismounting and removing the

mines. Rear approaches were always guarded as closely as were those to the front, so that in case of penetration and encirclement by armored elements the threat could be met promptly.

#### ASSIGNMENT OF ZONES OF OPERATION

Immediately upon occupying an alert position, and based upon the general plan given by Army Headquarters as to the probable employment of TA 1, the detachment commander habitually held a conference with the combat team commanders, explaining the situation, assigning zones to the various combat teams, and designating them on a map. Sketch No. 2 shows a typical assignment of



zones of operation for two combat teams. Zone 1 has the river as its right boundary and as its left boundary the line: RJ 90—RJ 80—RJ 100—CR 120, both boundaries inclusive. Zone 2 has as its right boundary the line: RJ 90—RJ 80—RJ 100—CR 120, exclusive; and as its left boundary the line: RJ 110—CR 95—RJ 98—RJ 105—CR 125, all inclusive.

This sketch represents a situation in which no information was available as to the presence of enemy forces. Distant approach of armored forces had been detected during the afternoon, and TA 1 was ordered to the position during the night. It was possible that either a penetration or an envelopment had been accomplished—and enemy forces might be on any side of the Tank Attacker force.

A situation of this nature made necessary an all-around reconnaissance as soon as possible. In such situations Combat Team 3 sent out reconnaissance parties in all directions about two hours before daylight. All roads and trails were carefully reconnoitered, frequent halts were made to detect sounds of enemy activity, and reconnaissance continued in the assigned zone until the enemy had been located or known not to be within striking distance.

Upon locating the enemy, the combat elements were immediately ordered into position for an attack at daylight,

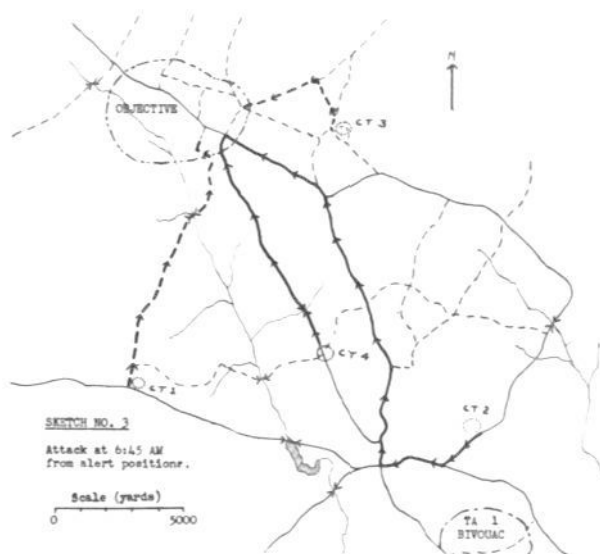
and detachment headquarters was notified of the action taken. A surprise attack was made upon the tank assembly area; on one such occasion twelve medium tanks were destroyed.

If it was concluded from the preliminary pre-dawn reconnaissance that no enemy forces were near, the reconnaissance details were brought back to the alert position at daylight, at which time a detailed plan for complete reconnaissance of the area was announced by the combat team commander. Usually the two combat team reconnaissance parties were sent immediately to reconnoiter the more distant areas of the zone of operation, and the parties from the firing batteries sought combat positions as far forward as a designated limiting line, and all possible routes to them. In Sketch 2 this limiting line for battery reconnaissance might well be the east and west road running through CR 120 and CR 125.

Frequently distant reconnaissance resulted in locating armored elements, which information was reported promptly to detachment headquarters with request for instructions. In such situations an attack upon armored forces was made only upon instructions from the detachment commander. Close-in action, however, was always initiated by the combat team commander and reported immediately to detachment headquarters.

#### A CONVERGING ATTACK

Sketch No. 3 shows a typical plan of attack employing all combat teams of the detachment against an area in which higher headquarters had reported that armored



forces were located. During the night the four combat teams were moved to separate positions, and at 6:45 AM Combat Teams 1, 2, and 4 moved toward the enemy position via the routes indicated. Combat Team 3, in an alert position well to the north, was held in readiness until



about 8:00 AM, when it moved to bring pressure from the northeast.

This plan of attack was followed on several different occasions, using one, two, three, or four combat teams as the situation required or as forces were available. The results were always highly satisfactory, as it was something new to armored forces to be opposed by troops which would carry the fight to them. The advantage was always with the "Tank Attackers" because of this element of surprise.

When on a mission of this nature, even though the location of the opposing force had been given more or less accurately, reconnaissance detachments habitually preceded the combat teams by some distance to investigate side roads and critical areas to prevent an ambush.

In all situations the reconnaissance detachments kept in touch with the combat team commander by radio, who in turn maintained radio communication with his subordinate commanders and with detachment headquarters.

#### PRECEDING THE INFANTRY

The last employment of TA 1 during the maneuvers was initially an attack mission in which each combat team preceded an organic Division Combat Team on the jump-off. The attack march started at 6:15 AM, and first contact with the opposing force was gained just about dawn. Until late afternoon contact was almost constant, numerous small forces of tanks and other armored elements being encountered. After a drive of approximately twenty miles to the south, all combat teams were in Lancaster, S. C., shortly after nightfall and the experimental use of tank attacker forces to soften the opposition in an infantry attack was declared by First Army officials to have been a success.

As in other cases, reconnaissance detachments of the combat teams were well in advance of their organizations, feeling out critical areas and sending back information of types and strengths of enemy forces observed, and their probable intentions.

The method of Combat Team 3 on this mission was as follows: The reconnaissance detachments, sending back information of enemy forces and strength, gave the location by means of a special map grid which was used by the entire detachment and which was changed frequently. Upon receipt of this information, a quick map reconnaissance was made of the enemy area (using photo-map) and a plan of attack decided upon. Firing batteries were dispersed over suitable trails shown on the air photo, and all combat elements converged on the area to be attacked. Each firing battery was preceded by its infantry security detachment, and when contact was secured by the infantry the batteries unlimbered and prepared for action.

Losses were heavy, as might be expected in this type of action, but equally heavy losses were inflicted upon the

enemy force. Twenty-two light tanks were put out of action by Combat Team 3 during the day.

The CP of TA 1 was established on the outskirts of Lancaster late in the afternoon of 27 November. Combat Team 3 arrived at Lancaster after dark and found Red forces on all sides. An alert position was occupied approximately five miles southeast of the town, but before morning it was completely hemmed in by the Reds. Early morning reconnaissance on 28 November confirmed our fears—we were surrounded by a strong armored force. Acting on instructions from TA 1 we attempted to fight our way out of the pocket, but were unable to do so. We remained in the position throughout the day, repelling numerous attempts to drive us out by the use of tanks, mechanized infantry, artillery concentrations, and attacks by foot troops.

At 3:40 PM a perfectly coordinated attack was launched upon our position. The Reds employed one battalion of the 13th Armored Regiment (less casualties inflicted by us during the day), eight batteries of field artillery, one battalion of motorized infantry, two companies of mechanized infantry, and sixteen army and navy bombing planes. Umpires ruled that our entire combat team was destroyed in this action, and undoubtedly it would have been in combat, with any survivors being made prisoner. While embarrassing to lose the entire command, it was a source of satisfaction to know that this small force in addition to inflicting heavy casualties upon the enemy had kept a much superior force engaged during the entire day, thus preventing offensive action by it upon the Blue main positions.

Our losses prior to the "blitzkrieg" were: four 75-mm. guns and crews; five 37-mm. guns and crews; two reconnaissance officers and one battery commander (captured); 17 engineer riflemen; one heavy .30-caliber machine gun and crew; 10 infantry riflemen; 10 artillerymen, during artillery barrages; and two command post vehicles. Casualties inflicted on the enemy by us during the day consisted of four medium tanks and six light tanks destroyed, with crews; 18 half-track personnel carriers destroyed; eight solo motorcycles, five quarter-ton "jeeps" and three command and reconnaissance cars captured with personnel (including three officers); one infantry company (176 men with equipment) destroyed; six .30-caliber machine guns and crews and three .50-caliber machine guns and crews destroyed.

One definite problem was that of keeping the rear echelons near enough to their organizations to enable them to serve hot meals. Movement was too fast and distances covered were too great to try to bring the kitchens up. As an example, Combat Team 3 fed a 4:00 o'clock breakfast on the morning of 27 November, and the next meal served by the kitchens was on the morning of 29 November after the war was over. The Type C rations carried by each individual were a lifesaver for the men of the Tank Attacker forces.

## CONCLUSIONS

While the tactics used on the maneuvers by the Tank Attacker forces are not wholly appropriate for use by the new divisional tank destroyer battalions, their principles should be useful to any type of antitank force. It is doubtful whether divisional tank destroyer battalions will ever be given the mission of seeking out enemy armored elements, unless those elements have penetrated the friendly lines and are endangering rear areas. Even then, the divisional battalions will still probably retain their mission of guarding the rear areas of the division, while corps, army, or GHQ tank destroyer organizations will be given all other missions.

The SCR-245 radio is satisfactory as a means of communication, but for a unit corresponding in size and composition to the provisional combat teams of TA 1 there should be a minimum of 20 sets. In addition, each battery, company, or other unit should have a minimum of three portable radio sets similar in size to the SCR-194.

Personnel carriers should be armored. The 2½-ton cargo trucks used during the maneuvers are too cumbersome, are vulnerable to enemy small arms fire, and furnish little protection to personnel. Each unit within the combat team should have a minimum of two solo motorcycles and four quarter-ton reconnaissance cars.

Towed guns are not adequate or suitable for use by a tank attacker unit. With such materiel it is possible to operate aggressively up to a certain point, but when towed guns are used the unit is placed on the defensive as soon as the guns are unlimbered. Self-propelled mounts should be provided.

Missions should be aggressive and the fight should be carried to the armored force. Defensive measures should only be for the protection of rear installations and routes of communication. The most successful operations of Combat Team 3 against tanks and other armored elements was when they were located in bivouac or at rallying points. With a different type of materiel, however, more success could have been had in meeting engagements.

On a number of occasions tanks were put out of action by individual soldiers who concealed themselves and

attacked the vehicles with "grenades" of small bags of flour. Tank attacker forces should carry an adequate supply of suitable grenades at all times, and all personnel should be trained in their use.

An aggressive tank attacker unit has little time to use land mines. Further, the use of mines well forward in friendly areas may prove of more hindrance to friendly troops than to the opposing force. Their use should be co-ordinated by a higher headquarters, as their promiscuous use by many small units, without time or opportunity to send up information as to their location, may prove disastrous to other friendly forces. A minimum of 2,000 mines should constitute the basic supply for a tank attacker unit, to be used in the co-ordinated defense of an area or in special situations.

The issuance of orders, in all operations, is being held more and more to a minimum. This is especially important in a tank attacker force, which should have a standing operating procedure so comprehensive that the only special orders necessary would be to designate the direction of the attack and the signal to move out.

The tank attacker, or destroyer, battalion commander must be an able leader and an astute fighter. He should not be loaded down with duties as staff officer for a higher unit, and should have an efficient staff of his own. He should have a number of well-trained reconnaissance detachments within his organization, equipped with speedy vehicles and dependable radios. Both close-in and distant reconnaissance is necessary if the commander is to plan well. Local warning service is also essential, either when occupying alert positions or when committed to a combat mission. Well trained patrols should be equipped with radio, with communication direct to the unit CP.

Several solutions to the ammunition problem have been considered, but the combat elements should not carry more than one day's requirements. Additional ammunition should be carried in the unit combat train. Based on the maneuver experience, both armor-piercing and high explosive shell should be available for use by tank attacker units. Approximately 75 rounds per gun for 75-mm. materiel and 100 rounds per gun for 37-mm. would probably constitute an average day's requirements.

---

NO MORE GASOLINE FLAVORING

No longer will the army's drinking water have that spicy tang of gasoline. No longer can the mess sergeant "inadvertently" swipe a few empty gas cans for replenishing the water supply. Five-gallon water cans with a bold "W" blazoned on the side are now in the hands of troops, with even better things on the way.

A new can is being developed with a thermo-plastic lining similar to that of a beer can—just shut your eyes and imagine some foam. The top has an opening large enough to insert a hand to clean the inside of the can. And there is no screw-top to fumble with, as the cap is a quick-closing device. This new can will be more sanitary and should be much handier to use; the first issue will probably be made shortly after you read this.

# A SOLUTION FOR TRAFFIC PROBLEMS

By Major J. P. Holland, FA

The problem of traffic control confronts each commander in ever-increasing degree. Its solution requires thought, coordination, flexible control, instantaneous action, and complete command to minimize the effect of those traffic jams that strive to snarl all columns operating in restricted road nets.

Our system of using only directional guides is predicated upon experience with a small, well-trained, disciplined, slow-moving army, whose commanders dealt with a few vehicles in small maneuvers spread over relatively large areas. Under those circumstances motor columns can move about with comparative ease and dispatch as they suffer no interference from other columns. The traffic guides are actually restricted to directional supervision of their units.

Today the picture is completely changed. Commanders deal with hundreds of trucks instead of tens, and subordinate commanders and chauffeurs lack experience

in moving en masse. Traffic control must therefore be so systematized that a traffic coordinator has constant command over all vehicles once they enter a traffic stream in his area. Sad experience has taught commanders and staffs of all echelons that it is not enough to attempt march control merely through time tables, march graphs, and the old guide system. The force commander must have complete control of all elements of the marching columns, and of all maverick columns or vehicles that might enter the traffic stream either through ignorance or in an effort to fulfill their own missions; and the system must be so flexible as to allow maximum traffic flow on all roads.

The Third Army developed a workable traffic control system just before the Louisiana maneuvers. Although still in the embryonic stage, it was of great value during the maneuvers and is definitely one answer to the traffic control problem. It is based entirely on constant, centralized

## EXAMPLE 1

TROOP MOVEMENT: 191st Tk Bn from vicinity of MANY to DERIDDER.

VEHICLES: 100.

MISSION: To clear Highway 171 of all other military vehicles prior to and during this movement, so it could be made without delay or interference; at 1:55 PM to report to G-3, Third Army, that the road had been cleared.

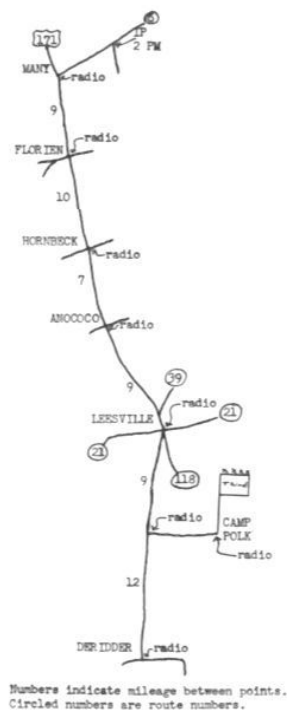
PROCEDURE: Block system used. Radio traffic control stations established as indicated in Sketch 1. 191st Tk Bn held in march readiness until ordered to move by Army. At 1:50 PM all radio stations reported route cleared; this reported to G-3, Third Army, who was also kept advised of progress of the column by radio reports.

EQUIPMENT: Eight vehicles with radios SCR-245. One O-49 airplane with two-way radio and voice amplifier.

COMMENTS: Movement completed without interference or delay. One small column ordered off road by traffic control officer in airplane; voice amplifier used, and instructions were understood and executed immediately by the column commander.

ORDERED CONVOY SPEED: 20 MPH.

ACTUAL CONVOY SPEED: 20.4 MPH.



EXAMPLE 1

## EXAMPLE 2

TROOP MOVEMENT: 1st Tk Gp from SE of DERIDDER TO HORNBECK.

VEHICLES: 300.

MISSION: To insure that a field artillery brigade authorized to use Highway 171 between ANOCOCO and HORNBECK, cleared prior to arrival of 1st Tk Gp at ANOCOCO; to clear the highway of all other military traffic prior to and during this movement.

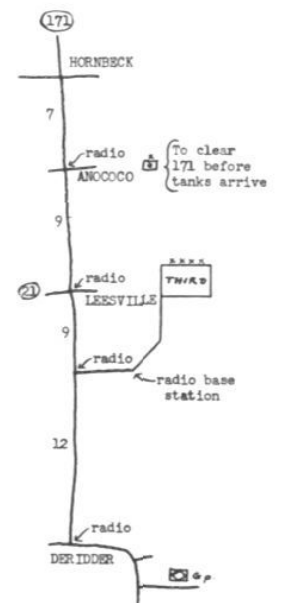
PROCEDURE: Block system used. Radio traffic control stations established as indicated on Sketch 2. Traffic control officer in airplane reported progress of 1st Tk Gp and field artillery brigade.

EQUIPMENT: Five cars with radios SCR-245. One O-49 airplane with two-way radio and voice amplifier.

COMMENTS: Traffic control officer in airplane reported progress of column, and that the field artillery brigade had cleared Highway 171 in sufficient time to allow free passage for 1st Tk Gp. G-3, Third Army, was kept constantly informed. No delays or confusion occurred.

ORDERED CONVOY SPEED: 20 MPH.

ACTUAL CONVOY SPEED: 21 MPH.



EXAMPLE 2

control of traffic streams and road nets. The traffic control officer is continuously informed of road conditions, traffic density, the progress of committed march units, units desiring commitment, and stray units or vehicles desiring to enter or cross traffic streams or reserved roads.

As used, the system was under the control of the Provost Marshal. A traffic section was commanded by a "traffic coordinator," who had at his disposal eight to fifteen vehicles equipped with two-way radio sets, and an airplane with both two-way radio and a voice amplifier (public address system). He graphed the prospective troop movements for time, space, and distance, and issued march schedules. He then placed his radio sets at critical points in the road net and stationed directional guides both there and at intermediate points where needed; each critical point thus became a control station.

Duties of the control stations were to

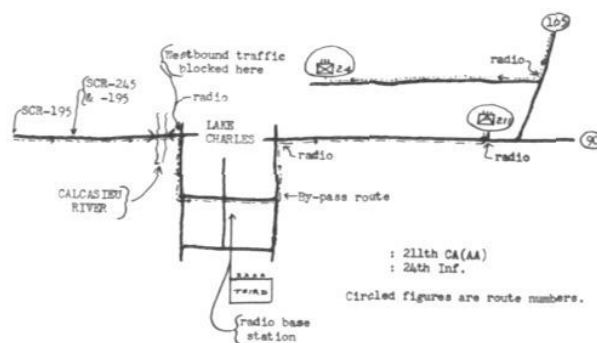
- a. Keep the coordinator informed of
  - (1) Condition of roads.
  - (2) Time of passage of each march unit.
  - (3) Desire of stray units or vehicles to enter or cross traffic stream.
- b. Inform adjacent control stations of the approach of a unit.
- c. Deliver to march units any orders from higher commanders.

The air traffic observer had the jobs of

- a. Clearing the road of unauthorized vehicles.
- b. Supervising march discipline.
- c. Clearing unpredictable traffic jams.
- d. Advising control stations of accidents.
- e. Notifying traffic coordinator of unexpected road blocks.
- f. Making hasty route reconnaissance.
- g. Advising traffic coordinator of march columns that should be rerouted to avoid road blocks, traffic jams, or increased traffic density near critical points.

Naturally, if the air observer is denied the use of the air the efficiency of the system is somewhat decreased. However, even without the air observer this general system gives the commander far more control over the traffic lanes

than any other known. It is firmly believed that if major units will superimpose this system upon their road nets, the problem will be solved to the point where all motor movements will be greatly expedited.



EXAMPLE 3

### EXAMPLE 3

TROOP MOVEMENT: 211th CA (AA) via Highway 90 to bivouac area.

VEHICLES: 350.

MISSION: To conduct this organization across CALCASIEU RIVER and around the LAKE CHARLES "by-pass."

PROCEDURE: Block system used. Officer and radio traffic control points established as shown in Sketch 3. Westbound traffic over CALCASIEU RIVER blocked during the passage of each serial.

EQUIPMENT: Six cars with radios SCR-245. Two radios SCR-195. One observation plane with two-way radio.

COMMENTS: Radios warned of the approach of the column, reported the progress of each serial, and gave the description and serial number of the last vehicle in each serial; with this information, west-bound traffic was blocked near the CALCASIEU RIVER at the proper time and allowed to proceed as the last vehicle of each serial left the bridge. The 24th Inf was reported by the aerial observer to be approaching from the north, and was diverted over another route to avoid interference with the 211th CA. No confusion or delay occurred.

### THE R.H.A. IN THE MIDDLE EAST

The Germans' long-range barrage on our tanks was withering. That is where our 25-pounders came in. Things have been done with that wonderful gun in the past two months that should make the factory worker at home really happy.

I saw 25-pounders going further and further forward in that mid-summer try-out in Syria. Damour, outside Beirut, was an example of perfect precision firing. At Damascus 25-pounders actually charged an enemy infantry position, firing, hitching up and charging forward, firing, then on again. Then, at Sidi Rezegh, they came right up out in front of everyone.

I saw England's crack gunners, the Royal Horse Artillery, do it. They stood in front of our infantry and held the German tanks. They covered our light tanks into action.

The R.H.A. had no armour to protect them and no entrenched positions. They stood in the middle of the German barrage and air bombing and banged away; and it was something like in Nelson's time—gun against gun at impossibly close range, and cannon balls flying everywhere.

—The Gunner, London.

# The American Soldier

## *At Home and Abroad*

By Lieutenant Edmund T. Delaney

To be numbered among those entrusted with the safety and future of the nation is, as President Roosevelt asserted in his address to the American people on the morrow of Pearl Harbor, a supreme privilege. Since those to whom this privilege is granted are set apart from their fellow citizens by the honor of a uniform, their conduct must ever be worthy of their high calling. It must be characterized by a deep sense of dedication to duty. It must reflect unyielding loyalty. It must demonstrate an eagerness to make any sacrifices necessary to achieve victory. It is not alone sufficient that there shall exist a firm conviction of the justice of the cause to which we are pledged. This conviction must be supported by discipline, without which no army, no matter how high its morale, can be any more effective than a mob.

Discipline is more than a mere willingness to obey orders. It is a concept which presupposes a community of effort and a desire to work with others toward a common goal—a spontaneous cooperation between soldiers and their leaders, and among soldiers themselves. To achieve these ends, there must necessarily exist a strong personal bond between all concerned. The surest foundations for this bond lie in mutual and reciprocal courtesy and consideration.

It has justly been said that "courtesy among military men is indispensable to discipline." Courtesy implies politeness, civility, and good behavior. It means not only the treatment of others—civilian or military—with a full regard for their rights and obligations, but also the readiness to tender cheerfully assistance which has neither been sought nor anticipated. It is an outward manifestation of an inward discipline. Military courtesy includes not only the many courtesies and the basic principles of politeness that should prevail in civil life, but also certain courtesies of a distinctly military character which have been developed in the long years of military tradition.

Foremost among these military courtesies is the military salute. Notwithstanding that the salute was inherited from the traditions of the age of chivalry and despite the great changes that distinguish the modern armies of today from the knights and yeomen of old, the salute has remained the standard greeting among military men of all armies. The salute is and always has been a privilege. Just as it was a

significant gesture of confidence and friendship among knights and freemen and hence not used by slaves, so today, prisoners who have forfeited their rights as soldiers are denied the privilege of the salute. The salute is the symbol of the instinctive military courtesy which is the mark of disciplined troops.

Military courtesies help in building and maintaining an "esprit de corps" with the resulting spirit of loyalty, courage, and self-sacrifice. Every real soldier is proud of his membership in the military fraternity and he therefore cultivates military courtesy to the extent necessary to make it a spontaneous manifestation of that pride.

Military discipline also embodies the self-respect and self-confidence which go so far toward maintenance of an excellent military bearing. Military bearing means that a soldier shall comport himself at all times in a manner befitting one who is proud of the uniform he is wearing. This means that he shall at all times present a neat and respectable appearance. It means a correct posture. It means that a good soldier will always be clean shaven, with his hair trimmed in a clean and sanitary manner, with his coat and trousers cleaned and pressed, his hat squarely on his head, and his garrison belt *not* in his shoulder loop. Yet military bearing means more than mere neatness, important as that may be. It presumes sobriety, cheerfulness, pride of the soldier in himself and in his unit. It is indicative of character, moral backbone, initiative, and self-confidence.

Now that the nation is engaged in actual war, it becomes important to emphasize again the rudiments of military courtesy and military bearing. They are well known, but there often appears a belief that in a war itself they have little or no application. Nothing could be further from the truth. The sharp contrast between the discipline and courtesy of the German soldiers and the lackadaisical manner of the French in the fateful year of their disaster and disintegration is tragic testimony to the importance and results of military discipline, politeness, and courtesy.

In the winter of 1939, one of the American Military Attaches in Europe, Lieut. Col. L. M. Riley, G.S.C., made a tour of inspection of the area where six months later the Germans made their main effort in the attack on France. He commented as follows:

"Town after town through which we passed was filled with French troops badly and carelessly dressed, coats unbuttoned and caps askew, unshaven faces behind dirty muffers wound 'round and 'round, with ends trailing carelessly off behind. Equipment appeared generally dirty, and horses ungroomed and poor in flesh from under-feeding or under-care. Saluting was perfunctory or lacking. Other rules of military courtesy were carelessly observed. A great deal of idleness was apparent; the men looked uninterested or entirely bored. True, most of these were reserve troops, but a number were the troops who met the Germans six months later. I commented to friends about the apparent lack of discipline and was told that French troops had a "particular kind of discipline."\*

In this era of total war, the necessity for discipline is not limited to the soldier in uniform. Shortly after the surrender of France, the French press commented critically on the many social faults which, they said, existed in the France of the Third Republic. These commentators placed much of the blame for these faults on the luxury and the wealth which, together with an absence of private and public responsibility, characterized a substantial part of French life during the post-war days. During those years, many visitors from abroad frequently remarked on the impoliteness of some of the French government employees and civil servants who assumed that in performing their official functions they were doing something particularly meritorious.

One French newspaper referred to the apparent lack of discipline and civility in both the armed forces and in the civilian population in the following editorial published after the collapse:

"Civility, as we understand it, consists in accepting some amount of inconvenience for ourselves in order not to inconvenience others, although we are in no way obliged to do so. In a crowded electric car, for instance, a gentleman offers his seat to a woman—of course he is not strictly forced to do so—, in keeping his seat, he commits no offense—he has the right to keep it. The lady is not justified in telling him 'Give me your seat.'

"Politeness, therefore, consists in doing more than we are strictly expected to do, and to do it gently and unselfishly. A polite man expects to be deprived of a certain amount of his comfort, of his pleasure, for nothing, with no material reward. Honor, elevation of sentiments 'do not pay' either—hence there are many who will not burden themselves with such sentiments.

"Failure to act courteously, as well as to accept any kind of discipline, is due to the fact that many people mistake politeness for servility. It is believed that by being the first to salute, one humiliates himself. This is absolutely absurd! If Lieutenant A salutes Captain B, it does not mean that A, one individual, is saluting another individual; it is in reality an officer who is saluting another officer; the two stripes are saluting the three stripes without their possessor having brought any humiliation on himself personally by so doing. When two officers of the same rank meet each other, the junior salutes the senior officer. When there is no way of ascertaining who is the senior officer, the most polite and best disciplined takes the initiative of salute."

The high degree of the discipline and the bearing of the

German Army in the initial phases of the war has been generally recognized. The esprit de corps of these soldiers has occasioned many favorable comments from observers of every nationality. Whether or not the first German troops to arrive in Paris were the elite of the army, it is a fact that the people of Paris were tremendously impressed with the conduct of the first elements of the occupying forces. It was quickly noted that the German soldier, instead of seeking to avoid the saluting of their officers actually sought this salute—even to the extent of its becoming a general nuisance in public places. The German soldier saluted, moreover, not only with his eyes fixed upon the person saluted but also with a gleam which radiated the great pride he felt in belonging to what he believed to be the finest army in the world. This salute was returned by the German officer, not in a perfunctory manner, but with a willingness and a snap which reflected his own appreciation of the loyalty and the enthusiasm of the soldier serving under his command.

Reports from all sources have agreed that the attitude of the German occupying forces (at least of the units originally sent to Paris, many of which were subsequently transferred) was such as to indicate that they had been especially instructed in their attitude toward civilians. From all appearances, there has been no plundering. All commandeering was paid for. There were no incivilities to the persons billeted upon, and no indignities visited on the property or the persons of the residents of occupied France. It was reported the houses and shops of absentees were sealed in order to safeguard their contents until the owners should return and that in all the towns signs were erected "Wer pluendert wird erschossen" ("Who plunders will be shot").

Of course, it is not to be presumed that the incidents mentioned above are typical of the German mode of operations in all occupied countries. Whatever civilities the Parisians may have been favored with will never offset the privations and sufferings which the Germans have visited upon the Poles, the Czechs, the Norwegians, the Dutch, the Belgians, the French, and the Russians. Although it must be admitted that some distinction can be drawn between the actions of the army itself and those of the secret police, there can be little doubt, in view of this record, that any proper conduct which from time to time the Germans may have evidenced was primarily attributable to a selfish desire to secure local collaboration. While the army itself refrained from pillaging, many communities lost property through a system of mass requisitions officially made on behalf of the conquerors. Moreover, there is some evidence that with the recent reversal of fortunes in Russia, the standards of discipline and conduct have declined. Yet the motives or extent of this conduct are not pertinent here. The important thing is that good discipline regardless of its purpose does have an enormous influence in securing the good will if not the active cooperation of the inhabitants of occupied areas.

One American attache abroad reported the following

\*"What Makes an Army," THE FIELD ARTILLERY JOURNAL, May, 1941.

indicative incident: A French woman spoke of a feeling of revulsion when a young German officer came to her house to request lodging for the night for his colonel and some other officers. She granted them what they asked because there was not much else one could do in the occupied zone. She described the nasty sensation of shock at seeing these officers appear in her house in a uniform she hated, saluting stiffly. "But," she said, "they behaved most correctly. They went to their rooms, did not disturb the private routine of the house in the least, made no noises, and left the next morning after paying for their stay. They left everything scrupulously neat and did not alter a book or take a pin."

\* \* \* \* \*

The present war is on such a vast scale that we in America, and particularly those who are in the services, must always remember that as Americans and as wearers of the uniform we will be considered the representatives of all the ideals for which we are fighting. Each soldier, no matter what rank he may hold, is a missionary for the things for which America stands. Each soldier must remember that any of his acts which are improper or censurable will adversely affect our relations with other peoples and the good will which they bear toward us. Conversely, every man who comports himself with courtesy and discipline is doing a substantial part in cementing good relations between our country and other nations.

The importance of such good relations can not be underestimated. In a war of the magnitude of the present struggle it is impossible to foretell where we shall be fighting or what countries we shall be crossing. At the present time many of our troops are on foreign soil. Sooner or later still more will be having contacts with people who are now under the oppressor's heel and who eagerly await the hour of their liberation. To all these people, the American soldier will come as the representative of the democratic way of life.

When the American soldiers arrived in France in 1918 they were wildly acclaimed, for their long awaited arrival gave new hope to an exhausted nation. However, and with a large measure of justice, it was not long before the local population felt that American occupation was not an unmixed blessing. This reaction was supported by all too much evidence of private property destroyed, family mementoes removed, chickens stolen, and wine cellars emptied. While these predatory activities were occasioned by a small minority and met with universal condemnation, the blame was laid at the door of all the troops and the efforts to break down this sort of prejudice were seriously handicapped. The result was mutual ill-feeling.

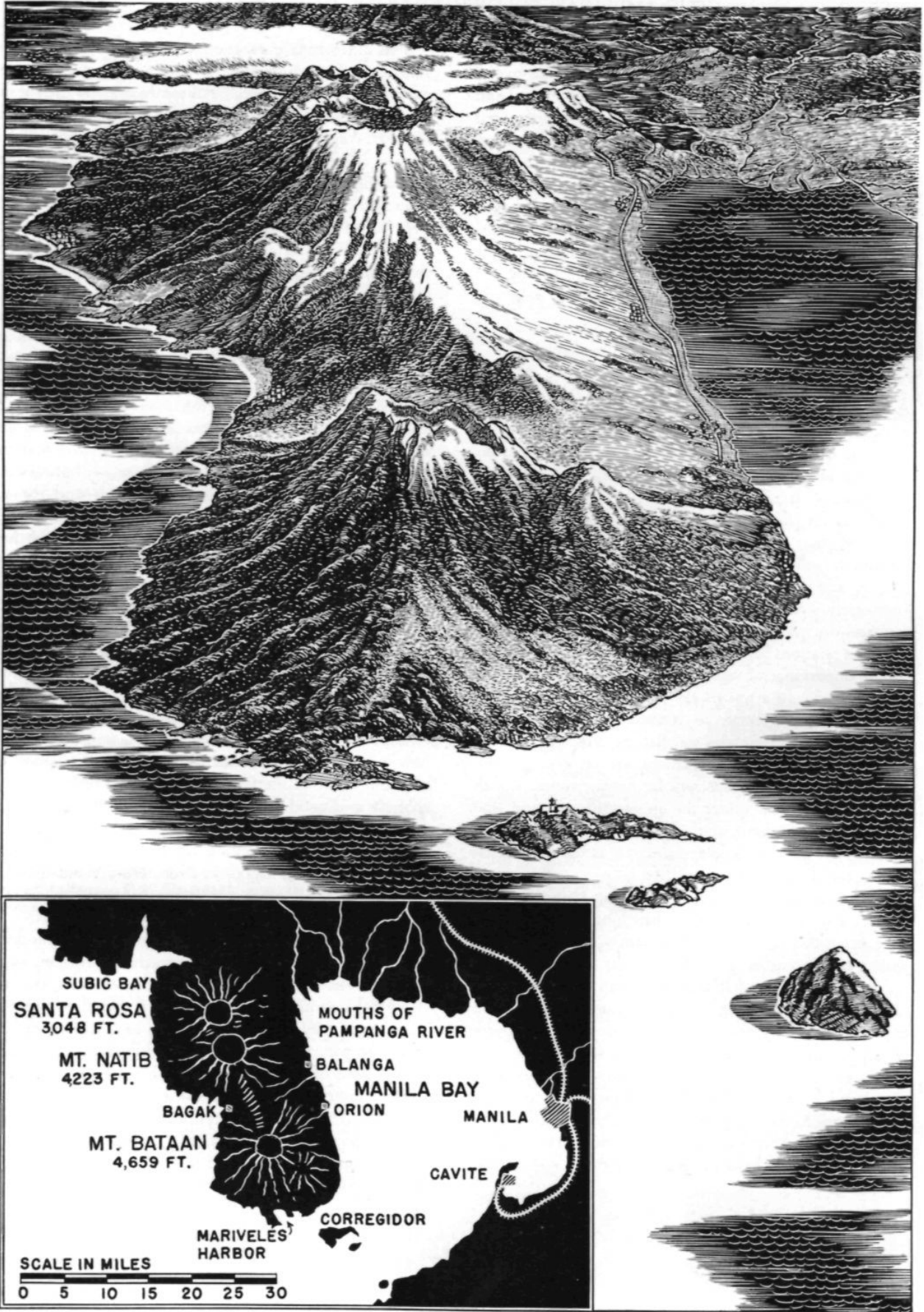
This unfortunate reaction was not obviated by the conduct in Europe of some of our tourist representatives during the post-war years. All too frequently their visits were attended with boisterous manifestations of blustering extravagances. Their behavior in public places seemed calculated to indicate a sense of universal proprietorship. Sobriety and dignity appeared to have been discarded in favor of unrestrained swagger. Peoples were judged by their conformity to these newly established standards and those who did not measure up to the required degree were considered backward and ignorant.

Fortunately our sense of values has undergone a tremendous change in recent years. As a nation we have been considerably chastened with respect to our public manners and conduct. There is still much to be accomplished, however, and no efforts should be spared to insure the highest personal standards on the part of our soldiers. It can not be too greatly emphasized that the success or failure of expeditionary forces will always depend to a large degree upon the attitude and the cooperation of the local population. This cooperation will be secured only if the troops themselves by their conduct gain the confidence of the people. It will be maintained only if they carry themselves in a manner worthy of the ends the army and the nation seek to achieve.

For all of this, education is required. The soldier sent to a foreign land should be acquainted with the manners and customs of the native population and should be taught to respect them. He should be made to understand the importance of a creditable appearance and of civil as well as military courtesy. He must be shown how to carry out his duties with the least disruption of the normal life of the residents. He must be taught that sobriety and good language are not only homely virtues to be cultivated but that they also will contribute inevitably to a good reception for our forces. The good example set by our troops in Northern Ireland must be carried on in all other places in the world where the American flag is to be carried by American troops.

The war has taught us many things. On certain questions of tactics and grand strategy, the conclusions to be derived from the experiences of other nations are still being debated and the verdict will be found only in the pages of history. But all observers have agreed on one thing: to win, an army must be disciplined. The "particular kind of discipline" of which some of the French were so fatefully proud does not exist. Let us as Americans resolve that in everything we shall undertake, whether as soldiers or as citizens, there shall always prevail the greatest degree of discipline and a decorum worthy of our finest traditions.









# PERIMETERS in PARAGRAPHS



By Colonel Conrad H. Lanza, FA

## BATAAN

Bataan is now well known as a peninsula in the Philippine Islands where a gallant band of men under Generals MacArthur and Wainwright held out for three months against the Japanese armies. It is the one place where the Japs' progress was long delayed.

Bataan, pronounced Batá-an, is the key to Corregidor Island, which in turn is the key to the entrance of Manila Bay. Possession of Corregidor by the United States forces prevented Japanese ships from reaching Manila.

Corregidor is an island shaped like a tadpole. Its head faces west into the China Sea, and its tail swings towards Manila, twenty miles off to the east. The head is several hundred feet high, with rather precipitous sides; the tail is lower. There is a cove on the north side, with a small village, wharf, warehouses, and depots. A road leads up to Topside, which is the high part of the island. Here are the great batteries, which fire both north and south across the channels and straight ahead out into the sea. Topside also has huge barracks and numerous buildings, constructed largely 25 to 30 years ago, before planes were heard of. As they were too high up in the air to be in any great danger from guns on ships, nothing was done to conceal them. They can be seen miles away, and particularly well from Bataan.

The channel on the north side is two miles wide, and

closed by the guns of Corregidor. To the south the channel is five miles across, with an islet on the north side, two on the south side, and then the shore of Cavite Province. The islets have been fortified and occupied. The further islet is less than a mile from the Cavite shore, and within easy machine gun range. It has been covered with steel and concrete, with guns in turrets and the crew and supplies deep down inside below the water level. According to latest reports it has not been materially injured by Japanese artillery fire directed at it.

At the south end of Bataan is Mariveles Mountain, about 2,500 feet high. This is much higher than Topside on Corregidor. When the Japanese captured Mariveles, they could see the landing stage at the little village and all the batteries and installations of Topside, spread out to view like an open book.

From such a vantage point Japanese artillery, concealed in the forests which cover that part of the country, were able to shell the Americans at their pleasure. Corregidor's position became difficult in the extreme.

Guns used in modern armies shoot some 15 miles. It was necessary to keep the Japanese artillery that far away from Corregidor to prevent destruction of Topside. But before the Japanese secured Mariveles, that mountain was

between the attackers and their game. Our lines long were about 16 miles from Corregidor, consequently there was no immediate danger to it.

Now as to Bataan. This is a peninsula 20 to 25 miles wide, and about 30 miles long from north to south. Down the center is a range of rugged, savage mountains ending at Mariveles. There are few ways of crossing these



EDITOR'S NOTE: *Colonel Conrad H. Lanza has a long and distinguished record in the Field Artillery, including service in the Philippine Insurrection, on Mexican border patrol, and overseas as commander of the 19th and 66th Field Artillery and as P&TO for the artillery of the First Army. A skilled linguist and a keen student of affairs, his historical writings and analyses of current affairs have been printed in the metropolitan dailies and other periodicals. Many of these articles were reprinted from the JOURNAL, for which he first wrote in 1921 and whose reader-interest polls he has always led by a wide margin. The JOURNAL welcomes Colonel Lanza as a regular contributor.*

mountains. The best trail was just inside MacArthur's lines, and while held afforded easy communication between the two sides of the mountains. The mountains are densely covered with vegetation. There are trails through them passable for men and ponies, although the trees meet overhead at a height which requires a tall man to walk in a stooping posture. They are steep and winding—rather ideal for ambushes, and readily defended by small parties. It is also practicable to walk along mountain stream beds, in the water and among the boulders and amidst the alligators that live here—a very exhaustive method, but a possible one. Incidentally, alligators make good food for those who have learned to like them.

Only a few Negritos live in the mountains. They are pure negroid pygmies of uncertain origin. They do not exceed 5 feet in height, and can travel through the jungle trails. They are inoffensive, shy, and agreeable little fellows of a primeval order of culture. Their needs are limited to food and to one loin cloth (not too large) each. Allowing for the alligators there is enough food in the jungle for these simple people. Not enough, nor the right kind of food, for anybody else.

The west side of Bataan faces the China Sea. Most of it is uninhabited and without roads. The mountains touch the sea, and in places it is necessary to wade out into the water at low tide to travel north and south. MacArthur's men seem to have had but little trouble to hold this sector. The Japanese, however, had a road from their base in Subic Bay, a short distance up the coast, to supply their men. The good part of this road ends just about where the lines were stabilized.

On the east side of Bataan there is some level cultivated ground at the foot of the mountains, varying in width from two to four miles. This section is planted principally in rice and sugar. There are towns scattered through this strip and a good road, but no railroad. Between the cultivated area and Manila Bay to the east there lie swamps one to three miles wide, cut up by bayous and creeks. The creeks are deep enough for navigation, and through them in normal times come boats from Manila carrying both passengers and the commerce of Bataan.

The major fighting appears to have been in this narrow cultivated strip between the swamps and the mountains. The exact position of the American lines is not known, but the defended front was probably not over four miles wide. On such a restricted front only a limited number of troops could be used at any one time. Fifteen thousand would probably be a maximum. As our forces had several times this number, we were able to keep the line filled for a long time. No matter what the superiority of the Japanese army may be in numbers, they could not on that small battlefield use more men than the defenders. It was long a stand off as to numbers.

Naturally the Americans, being cut off from reinforcements and supplies, could not replace losses. What we lost we lost. What the Japanese lost, they replaced with men or materiel or both. As the Japanese could nibble the American troops down by constant fighting, eventually a time came when the Americans lacked enough men or ammunition to defend even the short front they had. In the meantime fighting continued. The Japanese had a superiority, practically a monopoly, in air forces. They do not appear to have long had a superiority in tanks or artillery, and no more than a certain number could possibly be used in that narrow strip. The American artillery gave a good account of itself and so did our tanks.

Not all of the Americans were available to defend the Bataan east coast; some men were required for the west coast. Garrisons must be supplied for Corregidor and the islets, which were one strategic reason for holding on to Bataan. Some men had to watch the jungle covered mountains in the center of Bataan, otherwise small parties might have chopped a path through and caused destruction and trouble in the rear of the Americans. But the main battle was on the east Bataan side, keeping the Japanese guns 15 miles away from Corregidor and particularly retaining Mariveles Mountains in American hands. And as long as this was accomplished. Corregidor and its islets could block Manila Bay to the enemy and leave to us Corregidor—our citadel—as a come-back point from which to reestablish ourselves in the Far East.

## THE FUTURE OF THE SOUTHWEST PACIFIC

Japan has nearly completed her ejection of the white races from the Far East. A few Americans are holding a small spot in the Philippines; British are yet fighting in Burma; and a mixed American, British, and Dutch force is fighting a last ditch battle in Java. In none of these places do the white races have much hope of remaining.

According to British reports, the Japanese have 26 divisions of troops employed in the southwest Pacific war. Five of these were reported at Singapore, about seven in the Philippines; probably four are in Burma, one or two in Thailand, and one may be at Hong Kong.

The remaining seven or eight divisions appear to be those in the Dutch East Indies.

After active fighting in Java and Burma is over, Japan will probably need to retain,

in the Philippines, as long as	6 or 7 divisions
Wainwright holds out .....	
at Singapore, to safeguard that base ...	2 or 3 divisions
in Burma and Thailand .....	3 or 4 divisions
in the Dutch East Indies .....	7 or 8 divisions
in all .....	18 or 22 divisions

This would leave four to eight of the present 26 divisions available for future operations.

There is no accurate information as to how many, if any, additional divisions Japan has available to be sent to join her 26 divisions in the south. Best reports before the war started indicated that Japan had altogether around 100 divisions, 25 to 30 of these being in China, while about 35, supposed to be the finest troops the Japanese have, were reported in Manchukuo, prepared for a war with Russia. If these figures are correct it would seem that Japan could send 9 to 14 more divisions to the south, without withdrawing any troops from either China or Manchukuo. Added to the divisions which can be expected to be available after the campaigns in Java and Burma are completed, there would be 13 to 22 divisions available for new operations. This is quite a formidable force, and indicates that Japan is far from having exhausted her armed forces.

Japanese divisions used to contain about 25,000 men. Reorganization has been in progress—streamlining—which reduces the divisions to 15,000 men. Streamlining adds tanks, guns, mortars, etc., so that the new division, notwithstanding the reduction in size, is stronger than the old. It also releases 10,000 men from each division to form other divisions. We do not know what Japan has done in this regard. There have been so many understatements and misconceptions of Japanese strength and ability that it would be hazardous to assume that Japan has no more than 100 divisions. She may have considerably more than this number right now, and may be raising more. The figures given above are probably minimums.

The Japanese have been moving in this war with extraordinary rapidity from one operation to another. While there may be a stop, the Allies need to be prepared for some new move and to make necessary preparations in time to meet it.

From Burma as a base, Japan could strike against India. India has a large number of troops of her own—about a million. A large part of these is away in Egypt, Libya, Syria, Palestine, Iraq, and Iran. If these Indian troops are left where they are, there may not be enough to defend India, or to preserve order should sections of that country rise in revolt and invite Japan to intervene.

If the Indian troops are withdrawn from their current stations and returned to India, the British forces in the Near East might be so weakened as to constitute an invitation to the Axis to go ahead with its attack on Egypt and the Suez Canal or to advance eastwards through Turkey, which country might decide in this case to join the Axis. This danger could be avoided by replacing the Indian troops by Americans. This in turn involves a difficult transportation problem, for the journey would be around the Cape of Good Hope, a long and tedious voyage requiring some three months for a round trip, or only four voyages per ship a year.

Instead of moving against India, the Japanese may move south or southeast. Australia is practically as large as continental United States. It would take a great number of troops to occupy it, regardless of opposition, and it does not seem likely that the Japanese would try it. Destruction of bases along the north Australian coast is probable, and has in fact already commenced. This can be continued as necessary from the islands just north of Australia, which the Japanese have already seized.

Another possible and more probable move would be to attack New Zealand. This country is small enough to form a fair target for the available Japanese force. The Japanese would have a problem in a long line of communications to New Zealand, which would be open to attack by the United States fleet. Japanese statesmen have said that Japan would attack New Zealand in time, after having been given an opportunity to abandon with Australia their connection with the British Empire and their alliance with the United States, after assuring themselves that these two nations had no chance of gaining the war. An attack on New Zealand may not occur at once.

Easier objectives for Japan would be the Fiji or Samoan Islands. Both these groups of islands are on the line of supply from the United States to Australia. They are nearer Japanese bases, and presumably could be more easily taken than New Zealand. Should the Japanese succeed in this it would be most difficult for the United States to continue to supply Australia and New Zealand, and would be a most powerful argument to these two Dominions to reconsider their role in the war. Japanese advances into the Solomon and Gilbert Islands point directly towards the Fiji Islands and Samoa as a future objective.

The Japanese have the initiative; they have the Allies guessing. Japan may attack India, with or without Indian help; or New Zealand, Samoa, or the Fiji Islands. They may attack more than one of these places at the same time. This requires the United Nations to watch over and protect several widely separated areas, with large forces everywhere, each sufficient to meet the available Japanese army, air, and naval forces. It is an uncomfortable position to be in. It can be avoided when the Allies take the offensive, and bring the war straight towards Japan.

## HITLER'S NEXT MOVE

President Roosevelt's address to Congress on January 6th last, announced his intention to attack the Axis as soon as certain preparations were completed, and to continue to hit the Axis until Naziism was destroyed.

Hitler's policy has been not to wait until his enemies completed arrangements to encompass his destruction. In the past he has reacted with extraordinary rapidity and has himself struck before his opponents were ready. In view of this history, it is only prudent to expect that Hitler will not complacently wait until his ruin can be properly arranged. He is more likely to strike hard in an effort to throw into confusion and defeat the plans of his antagonists.

So far Hitler has been successful in concealing his intended moves. He has been careful not to point to any particular nation or place as that against which his forces will next be launched. His method has been to keep everyone guessing. He has made no statements as to how many troops he has, nor as to how many weapons his industries are producing. Excellent strategy—the principle of secrecy—which has helped him to gain astounding victories.

The ideal of the general staffs is to foresee all the things that Hitler could do and then provide to meet him at the right place and time. To do so completely would require a precise knowledge of Axis strength and resources. About this there is little reliable evidence—so little that to date the general staffs have not been always able accurately to predict Hitler's next move.

Hitler, however, knows much about us. Our President's speech of January 6th listed our production aims. The number of troops we expect to raise this year was officially announced on January 15th. We do not have this information about him.

There should be no thinking that the Axis can not match us in industrial production, at least in certain lines. It may be able to do so. The few reliable reports which trickle through indicate that industrial production in Germany is very high and may be increasing. In his speech of January 30th, Hitler stated that he would have a larger army than ever this spring. He gave no figures but he has made good often on what at the time were believed to be but idle boasts. His statement should not be disregarded.

Where can the Axis employ their armies? Areas that readily suggest themselves are Russia, Great Britain, Turkey, and Egypt.

An attack this spring against Russia was hinted by Hitler himself as early as October 2, 1941. He did not state that this would be his only offensive nor his main one. He may have desired to distract attention from some other

contemplated move. But some fighting in Russia appears certain. To determine how this will probably turn out it would be necessary to know whether Russia, after having lost granary of the Ukraine, is going to have sufficient food for her people; how many men and how much materiel she has lost in her fierce fighting. We do not have this information, although Hitler may have it. We can not foresee just what will happen in the huge war on the vast Russian plains.

A German attack on Great Britain is considered by most military commentators as improbable because they consider that it would have small chance of success. A very good reason why it may occur. Hitler loves to undertake campaigns which were believed beforehand to be impossible. It is his game to deceive, to catch his opponents off their guard if he can.

An attack on Turkey has long been thought probable. From Bulgaria the Axis might advance the short distance and seize the Straits at Istanbul. Their possession would offer the Axis attractive advantages in improving their position in south Russia and in the Black Sea. An advance beyond the Straits, through Asia Minor to either the oil fields of the Caucasus or to Syria and Palestine, might be tried, but it would be difficult to do this if Turkey resists. Turkey desires to stay out of the war. If she has to enter it she wishes to join the winner. Uncertain for the moment who this will be, she prefers to wait. Turkey is a formidable fighter, and neither side has yet tried to force her to make a decision.

An attack on Egypt by Axis forces from Libya is now in progress—stalled for the moment. It may gather strength and, if accompanied by a simultaneous advance through Turkey and Palestine, might be dangerous to the British hold on the near East. The British are thoroughly alive to this possibility. The capture of Egypt by the Axis would open a way for an Axis advance towards India, and an eventual junction with Japan. This is a real and serious threat. Large forces and supplies are constantly going to the Near East to secure the Suez Canal and adjacent territory, to continued British control.

In most wars, after provision has been made to meet what appear to be the enemy's most probable moves it has often happened that the enemy does some thing which was not foreseen and for which little or no preparation has been made. Just recollect the attack on Pearl Harbor, which was wholly unexpected although war was expected and plans had been made for meeting a Japanese attack in Thailand where we thought it would occur.

Hitler has in the past made his moves in the same way—always attacking when or where he was not expected. No one was prepared for the attack on Norway; no one foresaw the ferocity of the attack on France; no one believed

Hitler could possible strike in the Balkans as early as that Easter day of 1941.

To prevent being again surprised while the United Nations are manufacturing planes, guns, tanks, and other munitions in quantities sufficient to overwhelm the Axis, it is necessary to keep on hand ample reserves, with means of transportation, ready to act instantly should some attack fall anywhere on the extensive zones being protected. Had such forces been available on December 7th last, perhaps much of the Far East, now gradually going into the possession of an enterprising

enemy who did have reserves and transportation ready, might still be under the control of the democracies. It is a hard problem, where to keep these reserves. On its successful solution depends the results of Hitler's next move.

We may feel assured that Great Britain and the United States are providing such reserves. It would be unpatriotic to indicate where they are or where they should be. Let us hope that they have been provided in sufficient numbers and with sufficient weapons to counter the enemy's next blow.

#### SUB-CALIBER

*The following letter received at the Headquarters of the Army Ground Forces from the S-3 of the Camp Roberts Field Artillery Replacement Training Center should be of particular interest to new units:*

Your letter of March 25, 1942, to General Christian arrived after his departure to his new station, and so I'll attempt to answer your question about the .22 sub-caliber tube.

The stock is removed from the .22, leaving only the barrel and firing mechanism. The barrel is then attached to the tube of the cannon by means of two simple brackets. The .22 barrel is placed in two rings which are attached to the brackets. The rings have a set screw arrangement which permits centering, that is bringing the .22 barrel parallel to the bore of the cannon. This sub-caliber unit is used on the 37 AT gun, the 75 gun, French and American, and the 105 howitzer. On the 37 gun we rig a wire from the trigger of the .22 to the firing mechanism of the 37 so that the gunner fires the piece just as he would the 37. On other guns we usually don't rig this wire, as it serves no particularly good purpose in training, but it is feasible to do so on all weapons.

I am enclosing a strip of pictures showing the 75 with the .22 unit attached. Right at present, the Nacimiento River is in good flow and offers a fine opportunity for firing this weapon. Very small targets, ½-pint milk cartons (paper), are floated down stream. We fire on them coming at us, at 90°, and then going away from us. The targets move at a good scale speed. We consider it a fine help in training in direct laying. It could very effectively be used on 155 guns for practice on water-borne targets.

Packy McFarland designed the brackets last summer, but we found no great enthusiasm for firing the .22 sub-caliber on ordinary land targets which we rigged. It was not until the possibilities of the river were explored that its use became important. Now every battery clamors for .22 ammunition.



# NOTES ON MILITARY CENSORSHIP

By Colonel Falkner Heard, GSC

Censorship is defined in the Encyclopedia Britannica as the "action taken by any governing authority to prevent the dissemination of false statements, inconvenient facts, or displeasing opinions among the governed." The term is now, however, almost exclusively applied "to the examination of manuscripts, writings, and literary productions of all kinds as a condition of their publication, with the suppression of part or all, as may seem necessary to the censor for the protection of public morals or the integrity of the government" (*Formation of the Union—Hart*).

Everyone objects to having his way of living restricted, yet in times of crisis the liberties of the people have always disappeared to some degree. Freedom of speech and freedom of press must of necessity be curtailed somewhat in order that we may protect our own country's interest and withhold information desired by our enemies. Censorship in time of war is necessary for the following reasons: to prevent important information from falling into the hands of the enemy; to prevent false or misleading information from entering into the United States from neutral countries; to checkmate the efforts of disloyal citizens or foreign agents to obstruct or embarrass the government; and to enable facts to be separated from fiction in order to place such facts before the nation.

Censorship is easily handled if every editor, news writer, and correspondent will exercise voluntary press censorship, realizing that he is acting for the people of the country, rather than for his individual paper or his individual self, and that the success and safety of the nation's resources are dependent upon his patriotism and good judgment.

*World War I.*—Between April and October, 1917, the press in this country had its own voluntary censorship, under the surveillance of the Committee on Public Information (George Creel, Chairman). In October, 1917, there was established the Censorship Board, composed of representatives of the War Department, the Navy Department, Postmaster General, the War Trade Board (a federal agency created for the purpose of making certain that the enemy received no economic aid), and the Committee on Public Information. The release of military information was controlled by the Military Intelligence Division, General Staff, which had an officer, exercising censorship of military matters, called the Chief Military Censor.

*Prior to December 7, 1941.*—Very little, if any, control was exercised over information published in the press subsequent to the outbreak of the present war in Europe and prior to December 7, 1941. Practically speaking, all it

was necessary for an enemy agent to do in order to get vital war information concerning this country was to subscribe to a clipping agency.

*After December 7, 1941.*—Shortly after Pearl Harbor, it became evident that something must be done at once to prevent vital war information from being received by our enemies. The first step taken by the War Department was to cease releasing any figures on production, procurement, or war-time contracts. On December 19, 1941, the Office of Censorship was established by the President for the purpose of preventing vital information about the United States' military and economic activities from reaching the enemy. The work of this office is divided into two parts: censorship of mail, cable, radio, and other communications entering or leaving the United States; and the voluntary censorship of the domestic press and radio.

The censorship of communications crossing the American borders went into effect within a few hours after the Japanese raid on Pearl Harbor by setting up cable and postal censorship stations at the principal ports and border cities. At these stations, cablegrams, radiograms, and mail are examined, and anything which might be of value to the enemy is deleted. In the process, the United States Government obtains valuable information about enemy plans and possible subversive activities.

The Office of Censorship works closely with the War and Navy Departments. Matters pertaining to the Army are generally referred to the War Department for recommendation as to the desired action. Four Codes have already been issued by the Office of Censorship. These Codes of Wartime Practices are for the American Press, American Broadcasters, U. S. Cable and Radio, and U. S. Radiotelephone, and they outline types of news stories, magazine articles, photographs, and radio programs which will not be authorized, and give what restrictions will be imposed on cables and radiotelephone conversations. Generally, material not approved includes such items as troop movements, shipping schedules, details of fortifications, and specific information about progress of war contracts, and unofficial weather information. Of course, if such material is given out officially by appropriate authority, its use by newspapers or on the air is permissible.

To control the dissemination of information pertaining to the War Department, or its activities, the following agencies and boards have been formed in the War Department for the action indicated:

REVIEW BRANCH, BUREAU OF PUBLIC RELATIONS.—This Branch coordinates the review of all manuscripts, speeches, advertising copy, radio scripts, posters, and

similar material that is submitted by civilian agencies for War Department approval.

WAR DEPARTMENT MANUSCRIPT BOARD. — This Board consists of an officer from the Bureau of Public Relations, one from Military Intelligence Division, G-2, and one from the Under Secretary of War's office. It reviews manuscripts, speeches, and other similar material submitted to it by War Department agencies which are intended to reach the public.

WAR DEPARTMENT PHOTONEWS BOARD.—The duties

of this Board are to review newsreels and still pictures from all theaters of operation for release to newsreels, photographic syndicates, newspapers, magazines, and all other photo disseminating agencies, and the public.

MOTION PICTURE BOARD OF REVIEW. — This Board scans all motion pictures submitted to the War Department for Army cooperation, and approval is granted if the picture depicts a true interpretation of Army life and the company authorizes War Department supervision and censorship of any scenes violating War Department Policy.

EDITOR'S NOTE: This background material prepared by the head of the War Department Manuscript Board is timely, and of particular interest to our authors. Numerous inquiries have been received as to whether manuscripts should be cleared by the Board before submission to us; the answer is "no," as we can readily care for all such details. In two instances, however, pre-censorship is desirable: members of the Navy or Marine Corps should have manuscripts cleared by their branch of the service, and Army personnel on foreign service *who are describing their surroundings* at all in their manuscripts should have them cleared by their local G-2.

At the suggestion of the Manuscript Board, we remind those who may contemplate publishing a book, pamphlet, or other document *other than in the service journals*, of the following extract from paragraph 8, AR 310-10:

*a.* Subject to the restrictions contained in *b* and *c*

below, any member of the Army of the United States may publish articles on military subjects which contain nothing of a secret, confidential, or restricted nature and nothing prejudicial to military discipline. See AR 600-10, 380-5, and 600-700.

*b.* Whenever the matter intended for publication is

- (1) Interpretative of official military publications, or
- (2) Designed as a guide in the performance of military duty,

the manuscript of the proposed publication will first be forwarded through military channels to The Adjutant General with request for permission to publish . . .

*c.* If publication is not objectionable such permission will be granted, but no reference to approval by the War Department will appear in the publication.

We repeat, however, that **material for the *Journal* should be sent directly to us, NOT through The Adjutant General.**

A training circular is being published substantially as follows, changing the firing commands for change of site and corrector. This change will be incorporated in the revised edition of FM 6-40. Field Artillery Books 160 and 161 and G-11 are affected.

*Commands for Change of Site and Corrector in Artillery Firing.* Field Artillery Instruction Memorandum, G-11, Observer Fires, August 20, 1941, and revised FM 6-40, now being printed, prescribe that the height of burst during time bracket adjustment and when passing to fire for effect be regulated by changes in site rather than by corrector changes.

Pending the publication of revised FM 6-40 and Changes, FM 6-series, Service of the Piece, the following procedures for making changes in site and corrector are published for the information and guidance of all concerned:

1. *Site.*—A change in site will be ordered by the command UP (DOWN) (SO MUCH). At this command, the member of the gun squad charged with setting the angle-of-site scale increases (decreases) the setting by the amount ordered.

2. *Corrector.*—The command for a change in corrector setting is a new command for corrector.

# OAHU on the EVE of ATTACK

By Major R. A.  
Ellsworth, FA



*Sunset over the Waianae Mountains*

EDITOR'S NOTE: *This sketch, written in November, was originally entitled "Oahu Today." Recent events have doubtless changed some of the scenes described herein. Like "Luzon Diary" in our April issue, however, this article well portrays the last peaceful days of an outpost since embattled.*

The Hawaiian Islands have an incalculable military value from all three fundamental defense viewpoints: naval warfare, land defense, and air defense. It is the foundation stone of our Pacific defenses, so let's take a look at some of the general characteristics of this all-important land, sea, and air outpost.

There are six major islands in the Hawaiian group: Hawaii, Oahu, Molokai, Maui, Lanai, and Kauai. Of these Hawaii is by far the largest geographically, but Oahu is the all-important commercial and military center since on it are located practically all of the military and naval forces, as well as the great city of Honolulu and the three harbors of Honolulu, Pearl Harbor, and Kaneohe.

Oahu is third in size of the islands with a total area of 604 square miles. It lies between the islands of Molokai on the southeast, and Kauai on the northwest, being 22 miles distant from Molokai, and 64 miles distant from Kauai. The island is about 45 miles long between Makapuu Head and Kaena Point, and about 25 miles wide on an east-west line from Kaneohe Bay to Waianae.

The island includes two important mountain ranges which represent volcanos, long since inactive and now eroded, and cut into valleys and ridges. The Koolau Range parallels the northeasterly coast for nearly its entire distance. The range contains many puus or peaks, the highest of which is Mount Konahuanua, 3,105 feet high.

Two automobile roads cross the Koolau Range. A concrete highway around the south and east shores runs through the Makapuu Pass near the southeastern end of the island. Another scenic highway extends northeast from Honolulu up the Nuuanu Valley and drops down by way of the Nuuanu Pali to the coastal plain below where it joins the main road on the east coast. The view from the Nuuanu Pali is said to be one of the most beautiful panoramas in the world.

The Waianae Range parallels the southeasterly coast for nearly the entire distance between Kaena Point and Barbers Point. Several spurs extend from the range toward the shore forming short valleys, the more important one being known as the Waianae Pocket. In this range is Mount Kaala, 4,030 feet, the highest point on the island. An excellent automobile road through Kole Kole Pass connects Schofield Barracks with the Waianae Pocket.

Between the two mountain ranges lies a high and fertile plateau sloping northward to the Waialua Coastal Plain and southward to Pearl Harbor and cut by many deep gulches which drain the water from the mountains to the sea. Schofield Barracks is situated near the center of this plateau.

A series of isolated hills and extinct craters extends along the south shore from Makapuu Head to Barbers Point. These natural observation posts seem to have been designed by nature as watch towers for the protection of the southern gateway to the Oahu castle.

The coast abounds in beautiful sand beaches which are easily accessible by good roads. Officers' beaches are provided at Waialua, Waianae, Fort DeRussy, Fort Weaver, and Bellows Field.

Honolulu, the capital of the Territory, is the largest city in the Territory, and the most important politically,



economically, financially, and in population. It is well described as the "Crossroads of the Pacific."

The climate is much cooler than that of other countries in the same general latitude, due not only to the northeast trade winds, which blow nine to ten months in the year, but also to the return ocean current from the region of Bering Straits. At sea-level the mean temperature is 71.5°F., the maximum and minimum being 89° and 54°, respectively. The contrast in climate between the windward and leeward sides of each island is very striking; the northwest slopes, being rainy, are at times quite cool, while the opposite coast has a warm and dry climate. From the different elevations and exposures there is an extraordinary variety in rainfall, even within narrow limits.

The volcanic action which formed the islands moved from northwest to southeast. Maui contains the vast extinct crater of Haleakala (House of the Sun), which is at its highest point 10,032 feet above sea-level, 20 miles in circumference, and 2,000 feet deep. Hawaii, the southeastern most island, is made up of four volcanic mountains: Mauna Kea (White Mountain), 13,825 feet high, the loftiest peak in the Pacific; Mauna Loa (Long Mountain), 13,675 feet, claimed by geologists to be the largest single-mountain mass in the world; Hallalai, 8,269 feet; and Kohala, 5,505 feet high. Of these Hualalai has been dormant since 1801, Mauna Kea is quiescent, but Mauna Loa, with an oval summit crater 9.5 miles in circumference, is still active at irregular intervals. Sixteen miles east of Mauna Loa's summit crater, on its slopes is the famous crater of Kilauea, eight miles in circumference and 4,000 feet above the sea, the largest active volcano in the world. Here the Hawaiian Department of the Army maintains a recreation camp the year around for use of officers and men.

The windward sides of Oahu and Molokai and the northwest side of Kauai present precipices 2,000 feet in height, while the northeast slopes of Hawaii and Maui end in bluffs several hundred feet high, furrowed by deep and narrow canyons cut by the streams. In West Maui and Kauai are found valleys that closely rival Yosemite in grandeur. Coral reefs line the greater part of the shores of Kauai, Oahu, and the southern shore of Molokai, but are nearly absent from Hawaii and Maui. The only rivers worthy of the name are found on the island of Kauai.

The present population of 396,715 estimated by the Territorial Board of Health on June 30, 1937, comprises 21,389 Hawaiian; 19,890 Asiatic Hawaiian; 19,267 Caucasian Hawaiian; 30,130 Portuguese; 7,529 Puerto Ricans; 1,233 Spanish; 57,890 other Caucasians (including Army and Navy personnel and their dependents); 27,657 Chinese; 151,141 Japanese; 53,035 Filipinos; 6,678 Koreans; and 876 others. The total number of American citizens among these various groups is 310,956, or 74.4 per cent of the total population. This group includes 113,289 (or 36.4 per cent) Hawaiian-born Japanese, many of whom have dual citizenship, and 23,246 (or 7.5 per cent)

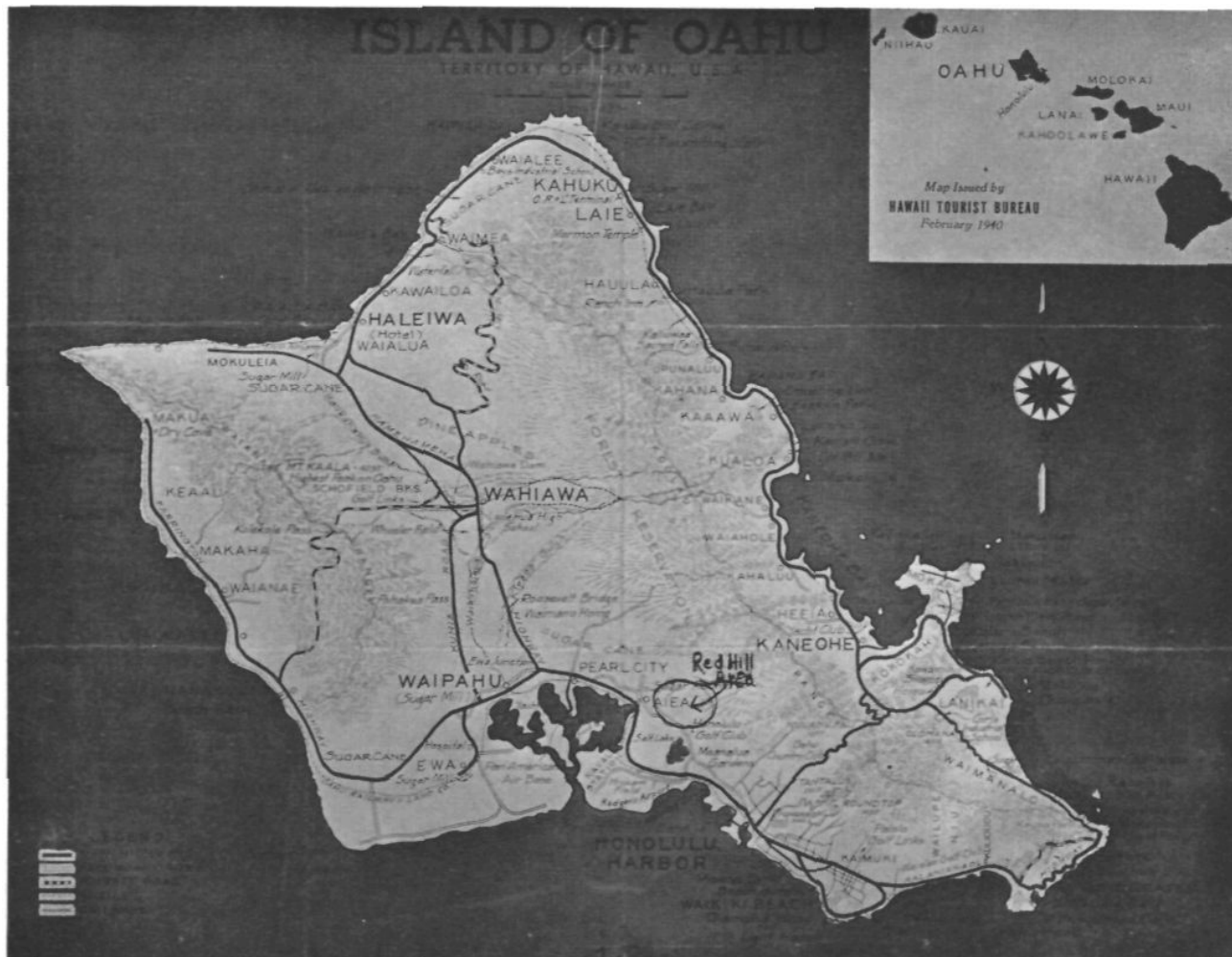
Hawaiian-born Chinese, all of whom are dual citizens. The 67.7 per cent of the Hawaiian-born Japanese with dual citizenship as of June 30, 1934, has been reduced considerably through concentrated efforts of various agencies to have these Japanese expatriate themselves from their Japanese allegiance and to have Japanese parents refrain from registering their children as Japanese subjects. China provides no means for the expatriation of Chinese nationals born abroad.

The newspapers recently reported that the population of Oahu has been increased by approximately 50,000 persons during the past year, which is a growth of about 20 per cent of the previous total. Honolulu's official population as of July 1st was 200,158. Practically all of this increase has been caused by the influx of defense workers who are employed on the numerous defense projects. Naturally, such a boom-town growth has created many glaring changes in both the physical aspects and the former atmosphere of the island.

Changes are occurring so fast on Oahu that the "Kamaainas" (old timers) hardly recognize certain parts of the island. Honolulu itself, and to some extent the entire island, is undergoing a sudden growth and expansion which is probably far more extensive than similar activities near the larger training centers on the mainland. It must be remembered at the outset that Oahu is not much larger than an average sized county on the mainland. In fact, some of our military reservations alone, along with their leased land, are almost as large as Oahu. Also, there are no other accessible towns to absorb the overflow of business activities and payday jamboreeing created by this huge transient population.

Naturally, such a sudden increase in population has created many problems for this small island. Practically all public utilities are proving insufficient and must be expanded. For example, in order to prevent further abnormal rate of growth, the telephone rates have been increased to \$15.00 per month for an individual business phone. The traffic congestion and room on busses is very acute, particularly during the going-to-work and quitting hours. As an expedient for relief, the opening of schools is being changed from 7:30 AM to 8:30, in order to permit the children to ride the busses during a less congested period. Large appropriations have been made for needed highway improvements and construction. The crowded conditions in Honolulu make driving and parking anything but pleasant tasks; in fact, pleasure motoring spots on the island have ceased to exist. Even the scenic and winding Nuuanu Pali Road is usually solid with traffic.

The more urgent problems for future solution are water and food supply, bombproofing, hospital space, drug supplies, schools, rents and housing, wharfage space, and the usual social problems of prostitution, drunkenness, and arrest rates. The civilian preparedness organizations are planning and preparing solutions for



all eventualities which these problems will present in case of a crisis. Six civilian organizations are working in close liaison with Army and Navy officials on all problems of civilian preparedness. Much is being done along this line and the results from this close cooperation have been splendid.

At the present writing the subject of rent "gougers" is consuming a good deal of limelight in the newspapers. It is a natural problem arising from the conditions of rapid expansion—the age-old economic principle of supply and demand. The construction of new houses just can't keep up with the demand, building materials are becoming difficult to obtain, and the cost of both materials and labor is steadily increasing. The services have been hit hard by this condition. A civilian committee has made a thorough investigation and has promised relief. However, there will be some immediate relief as soon as the numerous Federal Housing Projects are ready for occupancy. In fact, the huge project near the entrance to Hickam Field and Pearl Harbor is already partially occupied. Many officers are now on commutation and needless to say, with the present rent rates and increasing cost of living, the lieutenants aren't having any easy time

of it. Incidentally, milk is 28 cents per quart and eggs 72 cents a dozen. At Schofield Barracks a huge tent camp has been erected for bachelors in order to vacate quarters for married officers. Of course, now that dependents are no longer authorized to accompany an officer ordered to the Department, the shortage of quarters should gradually ease up to the point where everyone is comfortably located on a post. Eventually there should be quarters to spare.

The water and food supply has come in for much public comment lately. An editorial recently commented that there never would be an actual shortage of water on Oahu, regardless of the demand. However, it went on to state that present facilities for preserving and distributing the natural sources of both the mountain supply and the subterranean reservoirs were not adequate for the present increasing demand. Appropriations have been made and surveys have been commenced on plans for increasing the present water supply system by twice its present capacity. Articles have appeared in the papers recently urging that this work be commenced at an early date, since the present artesian wells along the plains are getting dangerously close to the salt water



*A formation of bombing planes over Waikiki Beach, with the extinct crater of Diamond Hill in the background. All photographs by 18th Air Base Photo Laboratory, A. C., Wheeler Field, T. H.*

level. The island is blessed by the fact that almost constantly clouds are resting on either the Koolau or Waianae Mountains and by the fact that Mt. Kaala is a natural funnel to the large subterranean lakes. Of course the irrigation of cane and pineapple fields could always be cut off in case the water supply should become acute.

The growing and storage of local foodstuffs is being given a lot of thought and study. The public statement that "Oahu needs to fear starvation more than invasion" made a deep impression and jolted loose some long-needed action. At present, surveys are being made on all the islands for raising the necessary foodstuffs to make the islands self-sufficient in case of a drastic curtailment of ships from the mainland. The growing of potatoes, rice, and a large variety of garden vegetables is past the experimental stage, and there is no question about the feasibility of raising practically any kind of fruit or vegetable right here. Of course the lands that are now planted in cane and pineapple could readily be converted into quick-producing stock farms on a large scale, in case the emergency warranted. At present there seems to be a general prejudice among the housewives toward local grown vegetables; they

apparently believe that local products lack vitamins or something, which they attribute to some lack in the soil. Of course such objections would soon be overcome if conditions ever came to a point where it was a choice of eating local stuffs "or else." Right now there actually exists a shortage of dairy products, and local poultry doesn't begin to meet the demand. Many commercial establishments are already using powdered milk and eggs wherever they can. There is a large supply of cattle on the other islands, but in some instances the local slaughtering and shipping facilities do not meet government standards of inspection. Of course this situation could also be remedied in case conditions demanded urgent action.

Refrigeration and cold storage installations have been greatly augmented of late. Old plants have been renovated, enlarged, and improved, while several new establishments have either opened for business or are under construction. Most of the more expensive homes are being provided with quick-freezing units and cold storage rooms. Considerable publicity has been issued concerning a contract for a huge underground bombproof cold storage unit for the Army. Also there has

been considerable talk concerning a similar commercial project that would cost about \$500,000. At least there is a move on foot to provide refrigeration space for a year's supply of essential frozen foods. Such a realization would be a boon to the peace of mind of many a housewife, as well as a most practical solution for averting the possibilities of shortage in case the worst possible eventuality became an actuality.

Naturally, business is booming and the stores are jammed. Everyone in Honolulu, except salaried persons, is making money. The head of a large wholesale firm remarked that business was expanding so fast that he couldn't begin to take care of all the orders, and at the same time complained about his physical set-up and experienced help being inadequate to take care of the increased volume. He further stated that due to the priority of defense shipments and crowded wharfage conditions, it was practically impossible to get needed merchandise from the

mainland on any dependable schedule. Evidently we all have our problems, even when making money so fast that we don't know what to do with it. At least that's one thing that service personnel don't have to worry about.

Another problem which is being studied, and will soon be remedied, is hospitalization and an actual shortage of doctors and nurses. At this writing plans are complete for the building of a large hospital. Other hospitals are being contemplated, including a huge bombproof structure which will act as a shelter as well as being equipped as a hospital. Medical supplies are receiving priority consideration, and reports indicate that ample reserves are being received.

Of course the usual social problems of prostitution, drunkenness, and the other accompanying vices, which naturally mushroom in such a fertile environment, are being handled well and efficiently by all the law enforcing agencies. It is no secret that our F. B. I. as well as Army and Navy Intelligence services are doubly alert



*The central plateau of Oahu is covered with pineapple fields, through which run a network of red clay roads which are easily traversed in dry weather but a bit slippery after a rain. The plateau is cut by numerous deep canyons (called gulches) which constitute serious military obstacles. The rows of trees seen in the background are mostly eucalyptus or ironwoods. Obviously, the regular patterns of the fields present special problems in camouflage and concealment.*

these days. It is comforting to know that there isn't much that transpires on the part of individuals or groups that isn't completely catalogued in a most comprehensive file. Incidentally, the venereal rate amongst the soldiers here is less than that on the mainland, while the arrest rate is generally higher; this is due mainly to an experienced and efficient Military Police organization.

The Mayor's Committee on Morale and Entertainment is especially deserving of commendation for their efforts to provide the maximum of clean fun and wholesome activities for the men of the service. Much has been done along this line and there is never a dull moment for those who have ambition enough to get off their bunks and take advantage of the recreational functions which are readily available. Of course, Schofield Barracks has always been noted for its splendid facilities to take care of practically every whim and desire that might strike a soldier's fancy. The athletic program, augmented by the entertainment provided by the Morale Section, is always a feature in Oahu. But it's the same old story—no matter how much recreation is made accessible there will still be a small per cent of drunks, venereals, and no-accounts.

As has been previously mentioned, the Civilian Preparedness Committees are spending a lot of time and effort in solving all the above mentioned problems. With the cooperation of this splendid body of civic- and service-minded individuals, there is no doubt but that the services will have little trouble in handling any emergency in time of need. The so-called M-Day legislation, which has just been passed, centralizes powers and provides ways and means for taking care of every possible contingency that might confront the Islands as the emergency becomes more emergent. Blackouts, evacuation, bombproof shelters, fire fighting, anti-sabotage, first aid, and a multitude of other plans will be ready for prompt and efficient execution if the occasion demands.

So much for the general picture. Let us turn now to the local side of the story from a service point of view. Oahu is still the "Paradise of the Pacific." In spite of all the influx of transients it is still peaceful and beautiful. There has been no change as far as climate, diversion, recreation, and pleasant service is concerned. While training and maneuvers here may not be as spectacular as the grand-scale war games on the mainland, still we are very much on an emergency training status.

The past defensive and stabilized attitude toward training is being transformed to an offensive, aggressive state. The conditions of terrain, restricted training areas, and limited maneuvering territory, which have previously been conducive to strictly defensive missions, are being adjusted to the tactics of attack. The present policy toward training is not primarily one of defending the island, but rather a quick offense to defeat any possible invader before a beach-head or foothold can be established in force. The stagnation and softening of barrack-soldiering is being remedied by overnight maneuvers by individual

units and prolonged field training by the several combat teams, in addition to numerous alerts and the usual Division and Department maneuvers. Every precaution is being taken to prevent a "Maginot Line" complex, which was so disastrous to the French Army. "Toujours l'attaque" seems to be the present slogan for guiding training and missions.

In spite of precautions taken to prevent loose talk and to preserve secrecy, and contrary to instructions, one still gets wind of many and various rumors. The wildest of these tabooed whisperings usually concern evacuation of dependents, sabotage, spies, air raids, blackouts, alerts, freezing personnel for the duration, food shortage measures, etc. All of these afford juicy bits for quick tips by those supposedly in on the "know"—none ever materialize. Of course the normal topics of pay, promotions, the pass-over list, football, and maids come in for the usual share of authorized conversation. There is still some conjecturing on the whereabouts of the Navy and the possibility of a peaceful Pacific. Navy wives have been educated. They become very evasive at the least mention of anything official.

The battle of the Atlantic seems a long way off and is casually brought up, mainly with respect to the scarcity of shipping bottoms and its possible effect on the fleet. On the other hand, the Battle of the Pacific hits home, and is cause for considerable serious comment. The consensus of newspaper opinion and expressions from radio experts seems to be that Hawaii is outside the present picture as far as Japanese expansion is concerned. However, they all seem to agree that if Japan is permitted to carry out its possible aims of expansion in Thailand, Malaya, Burma, Singapore, the Straits Settlements, and East Indies, with hopes of eventual complete domination of the Pacific, Hawaii might be included.

Much is being done here to prevent such an eventuality; in fact, what is being evolved in the way of defense works should discourage the most belligerent foe. An article recently published in a Honolulu paper quotes a part of a public address by Delegate Sam King as follows: "Pearl Harbor is one of the greatest, if not the greatest, naval bases in the world. Its docks and piers, its repair shops and stores, its ammunition depots and fuel supplies, will keep a fleet ready for action at all times to intercept any attack on our Pacific coast." We all know that Oahu is the key to our Pacific defense, but we should also visualize the detecting screen of our smaller bases in the Pacific. These are: Midway, 1,200 miles to the northwest; Johnston Islands, about 700 miles southwest; Palmyra Islands, about 1,000 miles due south; and American Samoa, also south about 2,300 miles.

There is no question about this network being a formidable obstacle for any combination of enemies. For the present it looks impregnable. At least an attack would seem to be far too costly in materiel and personnel to offset the gain. It is common knowledge that the

Navy would have to be out of the picture and air supremacy gained before an attempt would be made to actually invade Oahu. It is conceded that such an attack would be conducted simultaneously by sea, air, and land, with possible fifth column and saboteur activities constituting the initial phase. Prior to this concerted effort, nearby bases—both naval and air—would have to be established. The most logical places for such bases would be on the neighboring islands of the Hawaiian group. Even though the prime mission is the defense of Oahu and Pearl Harbor, the protection of these nearby islands against landing forces is receiving due consideration. Numerous

reserves to send to critical areas. Due to recent developments in the technique of air invasion, much thought is being given to defense against infiltration from both land and air, and airfield defense.

The physical set-up of Schofield Barracks remains generally the same, with the branches and units keeping their respective areas and barracks. Outside of a new quadrangle in the artillery area, which is nearing completion, and two new barracks being constructed near the Stockade for special troops, there hasn't been much change in the areas. Of course the three Federal Housing Projects, one in the Masonic Temple area, another on the



*The northern and eastern coast of Oahu has a narrow beach backed by lofty cliffs and towering mountains which would present a formidable barrier to an invading force.*

air fields are available and protection is being afforded those particular spots.

An invasion of the Hawaiian Islands, even from our nearest outlying possessions in the Pacific, would have only remote possibilities of succeeding. However, Norway and Crete were considered impossible, so we can't count on any eventuality as not being within the realm of possible effort. The sensible thing to do these days is to be prepared for the worst.

This is exactly what the defense plans call for. In brief, all-around defense against landing parties with ample

southwest corner of the artillery area, and the third over by the Horse Show Ring and the old 19th parade ground, have changed the appearance of the post considerably. Also, the old National Guard area, just beyond Benson Field, toward Kole Kole, is solid with buildings. At present a large cantonment is being constructed just west of the Division Review Field. Plans are also being made for cantonment construction in the artillery area to take care of the increased strength according to the new Tables of Organization.

Construction at Hickam Field, Wheeler Field and

Pearl Harbor has been continuous and the expansion promises to keep up as long as the emergency lasts. Of course these spots are still recognizable but the changes have been too numerous to mention. The Coast Artillery posts haven't changed much except for additional tents and some small construction. Shafter is pretty much the same except for the construction of a new Officers' Club and minor changes of routine B&Q nature.

Such sudden growth challenges one's imagination to the point of looking to the future and endeavoring to surmise just how the possibilities for defense of Oahu might be developed. Now that we have described Oahu today, let's take a peek at Oahu of tomorrow—a veritable Gibraltar, Malta, Dardanelles, and Hampton Roads, all moulded into one giant fortress. The honeycombing of certain areas with passageways for hangars, personnel shelters, storage facilities, repair shops, CP's, OP's, depots, gun and motor shelters, and all the necessary appurtenances for bomb-proofing all military installations

is, perhaps, the ultimate possibility of imaginable accomplishment. Such utilization of this terrain would give perfect defense of all shore lines, interior of the island, and key installations, and afford complete protection against air and naval attacks, as well as perfect concealment of all materiel and personnel during the preparation bombing and strafing prior to an attack. During a talk on the Crete campaign. Lord Mountbatten stressed the points that personnel of a gun which were placed during the aerial preparation and prior to the landing phase were lost, and that bombproofing and concealment of positions were essential to an island defense against air superiority. Planning will continue and defenses will be improved to meet the constant changes in attack which are being revolutionized at a terrific rate. Oahu will be prepared for the most unexpected—The Rock will stand forever and guard the key to peace or victory in war, as far as the Pacific is concerned.

---

#### BRITAIN'S "REILLY" IN THE NEAR EAST

During the advance on Damascus, a young officer, Captain Philip Pope, was acting O.C. of a 25-pounder battery supporting an Indian Infantry Brigade. In the afternoon of 20th June the brigade was confronted by a strongly fortified village whose garrison had tanks, anti-tank guns and machine guns. Vichy troops suddenly appeared in the hills on either flank, and another enemy column was approaching in the rear.

The infantry were fully engaged in coping with the encircling forces, but it was essential to the conduct of the operation that the village be captured before nightfall. The Brigadier asked: "Can you gunners do anything about it?"

"We can charge, sir!" replied Captain Pope. Thus began this extraordinary spectacle—not a charge *for* the guns but a charge *by* the guns. A couple of two-pounders were co-opted to deal with the tanks. Captain Pope led the charge in a truck.

One troop gave covering fire in rear while the remaining guns were "galloped" to points of vantage. Then the rear troop limbered up and leap frogged through with a supporting bombardment from the other guns.

The troops bounded forward in this manner, Captain Pope directing their manoeuvres by flags. The battery officers travelled on the running boards of their trucks and jumped clear when they saw the signal to halt. The din of the bombardment afforded no scope for voice-control.

All guns halted within 400 yards of the village and for a short time there was a deadly cannonade, both sides using open sights. Then a white flag was hoisted above the smoking ruins of a cottage.

Captain Pope's battery had some casualties from the mixed garrison, but these were small compared with the havoc wrought within the village, whose surrender was a decisive factor in the capture of Damascus.

Captain Pope's citation referred to his "energetic leadership, complete disregard for personal safety and . . . fine example to his battery, which behaved in exemplary fashion." Few tributes can have been better deserved.

—*The Gunner*, London.

# SEA ARTILLERY

By Captain E. S. Bechtold, FA

Amphibious warfare has been employed by the Japanese on practically every one of their attacks to date, and, because of the terrain, will probably continue to be used for some time to come.

In order to regain what the United Nations have lost and to decisively defeat our Axis adversaries, we also must focus our attention on it. Up to the present moment, it has been considered a specialized type of attack, one suitable only for the Marines and a few specially trained Army units; but to defeat the Axis, units many times larger than the entire Marine Corps and all Army units already amphibiously trained, must be used. This brings the problem of amphibious operation to the doorstep of every field artilleryman.

Most of the problems facing us in this type of operation have been satisfactorily solved, as they have to do with the close support of the assaulting infantry during the period when the artillery *is ashore and in position* able to fire. Close adherence to the principles laid down in FM 31-5 will solve them satisfactorily. These principles are merely the adaptation of ordinary land warfare principles of support to amphibious operations. However, the time, that most critical time, from just before landing until the artillery is ashore, in position, and able to fire, has never been satisfactorily dealt with in any actual combat in the world. During this delicate phase of the operation, no field artillery is able to support the assault infantry. How is the infantry supported? According to regulations, it is supported by naval gunfire. How effectively has this been done? Witness Gallipoli and the Libyan Campaign. To date, with one exception, no new ideas have been produced on the subject in the last twenty-five years.

First of all, let us concede that the fire from ships' guns of all calibers at shore targets can be approximately classified as similar to any other artillery fire. Secondly, let us consider methods by which we can control such gunfire so as to supply the missing link in time during the critical phase of a landing operation.

Viewing naval guns as artillery, we must first weigh their characteristics, advantages and disadvantages, and the methods of overcoming those disadvantages.

Due to the characteristics of the weapon, the naval 5"-25 caliber or the 5"-38 caliber gun batteries of cruisers are the most suitable for landing support. These batteries have excellent indirect fire control equipment, a relatively low muzzle velocity (although higher than field artillery pieces of comparable caliber), dispersion

comparing very favorably with field artillery of like caliber, an effective type HE projectile, and a much higher rate of fire than field artillery (up to 10 rounds per gun per minute).

Among the advantages, the guns are always in position ready to fire; they may change their position at will, either to deliver enfilade fire or to increase range (to increase angle of fall with resultant decrease of deadspace); the ammunition supply is capable of functioning up to the limit of the amount carried aboard ship; they have a tremendously increased volume of fire due to the characteristic of rapidity of fire; and the effective radius of burst of their HE projectile is extremely effective neutralization against light ground installations and personnel.

On the other hand, the amount of fire to be delivered is definitely limited to the supply on the ship since no restocking is possible; the fire is limited by the effective range of the weapons (greater than light field artillery), by the state of training of gun crews, and by the fact that naval gunfire *must* be *observed* fire, by the fact that the safety limit is four hundred yards from friendly front lines, and by the fact that high muzzle velocity increases deadspace.

The limitation on re-supply of ammunition can be remedied by two expedients—by judicious use of the means at hand, and by a substitution of supporting ships.

The effective range of the weapon is considerable (at least 10,000 yards) and is normally sufficient to render adequate support until field artillery is able to take over the direct support mission.

The state of training of the gun crews and gunnery personnel can be kept satisfactory by constant practice. Also, adherence as far as possible to normal navy methods minimizes changes in methods. Observation of fire is difficult, but can be accomplished by three means: direct observation from the ship, observation by naval spotting aircraft, and ground observation. Unobserved fires *cannot* be effectively conducted, so support during periods of poor or no visibility may not be effective. There seems to be no solution to this problem without undue waste of ammunition.

The safety limit seems excessive until it is considered that the fragmentation of 5" AA HE sometimes extends to almost four hundred yards from the point of burst. Normal fragmentation for computing neutralization possibilities (50 yards radius) is taken as the minimum. The high deadspace factor may be considerably decreased



by changing the position of the battery so that an increased range will allow a more favorable maximum ordinate and angle of fall.

Naval gunfire *can* be used as artillery because its characteristics are similar, and most of its disadvantages can be reduced satisfactorily.

Having decided that naval gunfire *can* be used, *how* can it be used?

Modern fighting ships, as has been mentioned, have modern indirect fire control systems. Without going into restricted details, these systems allow the ship to lay its guns on a given point, or on a given moving target, and by a complex mechanism to keep the guns trained in elevation and deflection at all times on that point. Corrections in range and deflections can be applied to this mechanism and the corresponding changes fed automatically into the battery. Using this fire control equipment, the equivalent of map data corrected fire can be delivered on any point specified by an observer.

Our own air-ground liaison (or forward observer) methods of conduct of fire are predicated on exactly the same principles with more or less accuracy. Naval spotting planes use the same system of spotting naval gunfire that our Army planes use in sensing our own fire, with only the radio procedure changed. Why not then, apply the principles of field artillery forward observation to naval gunfire support of the assault infantry?

The differences in conduct-of-fire may be mastered by any field artilleryman in about an hour, and, except for the fact that he will always receive a converged sheaf, to him the result will be the same. The target is designated by code coordinates and the fire is adjusted by a ground observer using modified forward observer methods. The normal support function of the field artilleryman is carried out, even though his own materiel is not available to do it. This mission is delayed only by the time it takes such an observer to get ashore and establish communications with his firing ship, thus materially aiding support of the assault infantry during the crucial phase of the operation.

In practice it should be normal for a cruiser to furnish close support for a battalion of assault infantry. Each supported battalion has assigned to it an artillery officer and a communications detail. Communication is by radio, ship-to-shore, a marine-type radio being used. This detail is supplemented by the addition of a naval officer who is the *liaison* officer. His function is exactly the same as our corresponding liaison officers and he does not normally conduct the fire of the supporting ship, although able to do so if necessary.

Such support can neutralize an area one hundred yards in width by two hundred twenty-five yards in depth in less than ten minutes from the time the initial message is sent. Only one minute of fire for effect is necessary, during which time 40 or 50 shells are fired into the area—a tremendous amount of fire power when compared to a battery of seventy-fives.

This support can be successfully rendered during a period from about H plus 30 minutes (usually less time is taken to set up) until such time as the medium artillery of an assault division can land and be in firing positions. It can therefore be used to supplement the fires of the supporting artillery as well as to supply all support during part of the most crucial phase of the landing.

The remaining question to be answered is, why should not the navy furnish the personnel to do this job? This procedure has been attempted in the past and has failed, mainly because naval officers necessarily do not have the tactical training, the experience in reading map and aerial photographs, and the knowledge of the supported troops required to furnish the desired support. Such matters are beyond the scope of naval training and are not within the interests of the average naval officer. The navy officer acting as liaison to the infantry merely furnishes information as to the characteristics, capabilities, and possibilities of the gunfire, so that the battalion commander can formulate his plan of attack. Even for this job, special training must be given naval officers detailed to this duty.



*"Take it away, sailor!"*

# THIS WAR DEPARTMENT REORGANIZATION

EDITOR'S NOTE: *On March 2, 1942, War Department Circular No. 59 announced the reorganization of the Department and of the Army, effective March 9th. Realizing that that document is not readily accessible to many of our readers, the changes are here outlined.*

Since the National Defense Act of 1920 crystallized the War Department organization, with its General Staff sections and Chiefs of Branch, each subdivision has taken unto itself more and more power and prerogatives. This trend was accelerated when the army began to expand. One staff section increased from nineteen to fifty-odd, yet was so encumbered by details that it (along with its fellows) had to set up a special planning branch within itself. Chiefs of branch exercised command and issued orders without statutory or other authority. Cross-currents were found everywhere. Duplication of effort multiplied to the point that no less than five service boards were testing some minor items. The Chief of Staff as the professional head of the Army had just too many people to deal with.

The reorganization of March 9th was therefore determined upon, at least as a trial. In the words of Circular 59, "It is anticipated that the experience of the first three months under the new organization will indicate the desirability of minor modifications within the principal subdivisions. Recommendations will be submitted accordingly."

The new organization provides "under the Secretary of War and the Chief of Staff a War Department General Staff, a Ground Force, an Air Force, and a Services of Supply, all with headquarters in Washington, D. C., and in addition thereto such number of overseas departments, task forces, base commands, defense commands, commands in theaters of operations, and other commands as may be necessary in the national security."

The functions, duties, and powers of the Commanding General, GHQ Air Force (Air Force Combat Command) and the Chief of the Air Corps have been transferred to the jurisdiction of the Commanding General, Army Air Forces. In fact, therefore, the air component has been affected but little by the reorganization.

The Commanding General, Army Ground Forces, has taken over the functions, powers, and duties of the Chiefs of Infantry, Cavalry, Field Artillery, and Coast Artillery, except that those of the latter pertaining to procurement, storage, and issue have been transferred to the Commanding General, Services of Supply.

Practically all other branch chiefs have been placed under the Commanding General, Services of Supply. In the case of the four branches above-named, however, the

Office of the Chief has been disbanded. It is emphasized, however, that there is NO intention of breaking down spirit, esprit, morale, nor of destroying or abandoning the achievements of the past twenty-four years. The offices of the chiefs were born of war, to accomplish the work then to be done. Times change, and time flies; a faster tempo is found now than then. To speed up action and results, "opposite numbers" from the branch offices have been grouped together in the Headquarters, Army Ground Forces. For example, the personnel officers, enlisted, men, and records from the former Infantry, Cavalry, Field Artillery, and Coast Artillery offices are now generally found in the Personnel Section of that Headquarters. And so with the others.

The former Training Sections (now forming the Replacement and School Command) have somewhat different problems, so their solution is to leave Washington and get out closer to the troops-in-training where they will not hamper or be hampered by the operational aspects. They have moved to Birmingham, Alabama.

The general pattern is well illustrated by the reassignments of the last officers on duty in the Chief's office. Col. R. W. Beasley, former Executive, and Lt. Col. R. E. Chandler, of the Material Section, are taking the course at Sill; Colonel Beasley will become Artillery Commander of the 81st Division, and Lt. Col. Chandler is expected to receive a command in one of the new divisions.

From the old Personnel Section, Lt. Cols. E. C. Norman and J. F. Uncles have moved to G-1, AGF. Lt. Col. Mark McClure of the War Plans Section is with them, but they have lost Capt. R. M. Ewing to the Replacement and School Command.

Lt. Col. W. S. Nye, Maj. J. E. Coleman, and Lt. A. V. Rutledge remain with the JOURNAL, but are now under the Requirements Division instead of the former Intelligence Section. From that Section Lt. Col. S. L. Cowles has gone to the Replacement and School Command, and Capt. R. J. Riddell to Air Intelligence.

The Chief's Training Section is also scattered somewhat. Col. G. O. Kurtz and Lt. Col. J. V. Phelps are with the Replacement and School Command; Lt. Col. D. O. Hickey has gone to the Armored Force; Lt. Col. L. H. Hanley has moved to the Personnel Division, SOS; and Lt. Col. T. North is now with the WDGS.

Cols. J. A. Stewart and A. L. Campbell of the Material Section and Col. D. S. Rumbough of War Plans are now assigned to the Requirements Division, AGF.

As far as the JOURNAL is concerned, no operational

changes are indicated. For the first time we appear in an official T/O, as a section of the Requirements Division, AGF, but at the same time we very definitely remain the organ of the Association. As stated by Major General Moore, Chief of the Requirements Division, we are now (as never before) the prime medium for disseminating timely material for the benefit of the field and for fostering cohesiveness and uniformity of training within the Arm. We will continue to publish the latest in trends

and developments affecting Field Artillery, and welcome original articles of interest to the service.

The reorganization does not mean the end of the world, the end of the war, nor the end of the Army. It does signify the end of an era, the recognition that changing conditions must be met by changed forms, and that by streamlining the high command as well as the fighting divisions, the end of the war may be brought nearer.

---

## WAR EXPERIENCES OF A DETAIL MAN

BY CORPORAL CRANE

In training we sometimes discuss hypothetical problems with little thought of ever meeting them under war conditions. Here is one often talked about but seldom experienced.

In the spring of 1918 we were in position along the Meuse Canal near Ft. Tryon. The positions were well selected, and the battalion OP was excellently located near the town of La Croix to command the entire field of fire of the three batteries. The sector was one classed as "dead" by both the French and the Germans. We experienced little action other than potting at machine-gun nests and one-pounders.

We were using a 1/5000 French map; our field of fire extended from the center to the left edge of the map. To the left of our positions and off our map was a French outfit supported by their own artillery. At the extreme edge of our sector was a small wood that cut the field of vision and screened their field of fire from our observation.

One night the French were relieved by new American troops whose artillery was still in training and we received orders next morning to expand our field of fire to the left to take in one half of the sector occupied by these troops, the other half to be defended by artillery on their left.

The Old Man sent me forward to hunt out an observation post that would command this new sector. I worked to the left through our trenches into the trenches of the new troops, in the hope of finding a point that might become an OP for the entire sector, and, failing in this, one that might be used as an auxiliary forward observation station working in conjunction with the old battalion OP.

I had worked to about the middle of the new sector when the enemy started throwing over "flying pigs" and potting at strong points with one-pounders. It was evident to me that the Germans knew of the change in troops and that the new troops were without experience. There was little danger from the German fire, but it was unnerving to men who had never been in action. We of the detail had had drummed into us the necessity of foot troops having confidence in their artillery support, so something rather drastic on my part seemed indicated.

I asked a rather excited young infantry captain if he could get me through on his wire to my battalion. After much confusion and about six minutes' delay I heard the Old Man on the other end of the line. I explained quickly what was happening and asked for a couple of ranging shots so that I could tie myself in on the line of fire. These came over very promptly and not far off the line of my position. A couple of shifts and I had him on the line. He then gave me a shot ten mils left and one ten mils right of the line, giving me the range of these so that I could check the value of a ten-mil shift of the gun from my observation point and determine the mil value of any shift I might have to make to gain my targets.

The only target more exposed than a one-pounder is a trench mortar. It was duck soup to throw a few shells around them and quiet them down. I had no illusions about having hit any of the targets, for I more than expected that they had picked up my conversation with the major and were already on the move by the time our shells began to fall around them. But it was a very impressive demonstration to the infantrymen, who were quite sure I had wiped out half the strong points in the German line. That impression was the main object of our bit of shooting.

# OUR SOUTHERN COUNTERPART

By Lieutenant Edward A. Raymond, FA

Argentina ratified her constitution some sixty years after we adopted ours. It is as our own nation, sixty years younger, that Argentina can best be understood. Understanding our southern counterpart is well worthwhile in times like these, when solidarity among democratic nations is so vitally important.

Without dwelling too much upon the past, it is interesting to note the close parallel between Argentine and United States history. The first permanent settlement, at Buenos Aires, shared the fate of Jamestown. Spain took the same unpopular steps in ruling her viceroyalties as George III took with his colonies. In 1806, Buenos Aires was captured by the British General Beresford, but in less than two months local volunteers under a French officer, Jacques de Liniers, retook the city. In 1807 a British force of 8,000 men under General Whitelock not only failed to recapture Buenos Aires, but was forced to surrender lock, stock, and barrel to the Argentines. In 1824 the Argentine Provinces were finally liberated from Spain. Argentina first set up a sort of Continental Congress, and then had the same difficulty in securing adoption of a strong federal constitution that we had experienced. The document finally ratified in 1853 shows study of our own constitution.

Closer and more important than the historical parallel are the economic and social similarities of Argentina to the United States.

## ECONOMIC ASPECTS

Her territory lies in about the same latitudes south as we occupy north. It has flat pampas with rich soil. Like our Middle West, it is a formidable producer of agricultural products; in peacetime the Argentine Republic supplies two-thirds of the world market for



beef, two-thirds of the veal, and is the leading exporter of corn and linseed. It is second in export of wheat, mutton, and wool. Argentina is not favored with usable waterpower, nor with coal or iron. She has petroleum deposits in the Comodoro Rivadavia region on the southeast coast, but these are not of major importance. She is not well endowed for becoming industrialized, and is in the position we held for several decades after the Civil War—the position of what economists call an "immature economy." She must import both capital and consumer goods to maintain a high standard of living for her people. Argentina has found international trade a sea studded with reefs, beset by calms, and harried by typhoons. From her buffetings there has grown up a spirit of economic nationalism. Patriotic

funds are invested in her own industry, so that more than half the utilities and factories are now in Argentine hands.

We are amazed when supposedly well-informed Europeans expect to find cowboys on our western plains shooting buffalo and fighting Indians, yet our popular conception of Argentine gauchos is of wild-riding horsemen roaming the pampas, running down ostrich-like rheas, and packing lively pistols. As a matter of fact, some 40% of the Argentines are cattlemen and sheep handlers, but they operate as in the United States, with fenced pastures, feed crops, and scientific breeding. The Indians were killed off even more completely in Argentina than in the United States.

Wheat raising is carried out on the same extensive scale that is practiced in the United States, but there are few small holdings. Two thousand families receive much the greatest part of wheat and cattle revenue. This

wealthy aristocracy is the hub about which all Argentina turns. It makes Buenos Aires a proud and cosmopolitan city, and is also found among the "provinciales." Argentina is sixty years younger than we are, as a constitutional republic; did we not have our economic barons, our Morgans, Harrimans, Goulds, Vanderbilts, and Hills in the 1880's? Did that generation not speak with ambition, with pride, and with no little arrogance? Did it not talk of Manifest Destiny, and did it doubt that the United States was top dog in the New World? So today, there are influential classes in Argentina that feel their country is endowed with natural leadership; that is normal in a vigorous, growing nation.

#### ARGENTINA AND THE UNITED NATIONS

If Hitler and his satellites are victorious in Europe, Asia, and Africa, there will remain some unfinished business in this hemisphere. Reasoning that the Germans use the line of least resistance, invasion of South America might well precede an attack upon the Continental United States. With Brazil overrun and Argentina and Chile won over by diplomacy or force, Hitler would be able to cross the Andes by a choice of passes, so making an end run around our line of Caribbean bases. He would open up Pacific communications and menace us from two sides instead of one. Meanwhile, possession of South American food resources would be of great value. For such reasons, superimposed on all others of more permanent nature, the close friendship and military alliance of all South American countries for hemisphere defense has been officially announced as a major concern of our Administration.

Argentina is not our closest friend nor our actual military ally. This was demonstrated by her independent course of action at the Conference of Foreign Ministers at Rio de Janeiro early this year. To some, the manners of our salesmen in the Argentine and the social customs displayed in our films have appeared uncouth. The Argentines have balked at the establishment of cooperative land, air, or naval bases on their soil for hemisphere defense.

Britain has much the same relation to Argentina now that she had with us in the last century. She has a big stake there. She built the railways and supplied the capital for the first industrial development. She provides the markets so necessary for an agricultural, exporting nation. The British took pains not to damage their relations with the Argentine by the Ottawa Agreement of 1932, the so-called Empire Free Trade Agreement. In effect Argentina was given "most-favored-nation" treatment, and purchases of meat and grains were sustained by guarantees. British trade has been solid; British engineering and British manufactures have been of high quality. Business methods have never smacked of high-pressure salesmanship, and British enterprise is represented by men who have spent their lives in the Argentine and mastered Latin-American manners. British trade with Argentina has dwindled since the war

began, but the Argentine and Great Britain are in firm accord.

#### ARGENTINA AND THE AXIS

Spanish is spoken with an Italian accent in Argentina. Italian immigration has totaled over 2,600,000. Alberdi, author of the constitution, had an Italian name. Pellegrini was a great president of the Republic. Four members of the present cabinet are of Italian descent. In the industrial and cultural life of the nation Italians have been leaders. The important city of Rosario is typically Italian. As in the United States, however, citizens of Italian blood may retain Italian accents, ways, and traditions, but they acquire loyalty to their new land.

There are less than 10,000 Japanese in Argentina. Few are influential.

Hyphenated Argentines of German descent number over a quarter of a million, and there are some 60,000 of German birth.

The war interrupted a German trade drive of familiar barter pattern.

Germans in Argentina are organized in movements on a large scale. The largest of these is the Beneficent and Cultural Society described by Hubert Herring (*Good Neighbors*, Yale, 1941) as "an innocent creation which took the place of the Nazi Party outlawed in 1939," and is housed in the same building as the German Embassy in Buenos Aires. Attempted German pressure upon national leaders varies from flattery, decorations, and awards to threats of what might happen to an unfriendly Argentina if Germany won the war.

No one admires success more than the Latins.

#### THE ARGENTINE FORCES

Although the present military and naval missions are American, they were German until recently. Indeed, the military mission of General Niedenfuhr was not replaced until Germany had been at war for some months. Argentine troops show their training in a German cadre, a training received steadily since 1915.

War anxiety has come to Argentina and nearly half a billion is being spent to modernize arms and equipment. No large-scale mobilization has taken place, but an ambitious program of training "five thousand pilots" is under way. Argentina, however, does not have planes for anything like that number at this time. Those it does have are assigned, as in the United States, to the army and navy rather than to a separate Air Force.

In pre-war days, the Argentine Republic had about half the regular military establishment that we did. It was divided into six infantry divisions, two divisions and one brigade of cavalry, and two mountain detachments. Military service has long been compulsory, and all males between twenty and forty-five are classed in the First Line for ten years, National Guard for five years, the Territorial Guard for five years, and then the Territorial Reserve.

In THE FIELD ARTILLERY JOURNAL for February, 1941, appeared the following discussion of Argentine artillery:

"The artillery of an infantry division is composed of a field artillery regiment containing two groups, or five batteries. Each of the five cavalry brigades has one group of horse artillery composed of two batteries, and each mountain detachment has a regiment containing two mountain groups, or five batteries.

"Among other materiel, the Argentine artillery has at its disposal a modern 10.2-cm. gun, drawn by a 90-HP tractor-truck. The artillery ammunition columns are partly motorized.

"The 7.5 L/60 (length, 60 calibers) Bofors is used as a heavy gun, and the 2-cm. Madsen automatic is said to be used as a light AA gun.

"Efforts have been made to develop the domestic manufacture of armaments, particularly of small arms, ammunition, and explosives. Factories are in operation at Villa Maria, Rio Tercero. The industries of Argentina can supply the army's ammunition requirements."

The Argentine navy is exceeded in size by the fleets of Great Britain, the United States, Japan, Italy, and France. Its ships are smartly maintained; the appearance and discipline of crews are outstanding. Hours spent by the author aboard an Argentine training ship have left an impression of Teutonic thoroughness combined with Latin dash.

#### THE ARGENTINE THEATER

Argentina is backed up against the Andes, and consists largely of level plains. Towering, cold cordilleras and subtropical forests and swamps—the extremes of altitude and temperature—are found in the north. Open pampas, fertile in the east, semi-arid in the west, form the center of the country. Patagonia, dry, hilly and cold, runs south to the Straits of Magellan. Below the Straits lies Tierra Del Fuego, Land of Fire, which is like Patagonia but more so.

The Argentine Chaco has been described ingeniously by Julian Duguid (*Green Hell*, Macmillan, 1930) as the feet of a sprawling giant: "It is a truly colossal block of forest, so vast that the mind refuses to grasp the full immensity of its range. Shaped like a human body, it stands foursquare on the top of Argentina. Its trunk is Brazil and Paraguay and Eastern Bolivia, its far-flung shoulders dip into two oceans at Ecuador and Pernambuco, and its scraggy neck twists at Panama into the Republics of Central America. At its widest it stretches without break the distance between Labrador and Liverpool, or Southampton and Suez. It has the Amazon, the Orinoco, and the Paraguay for its main arteries. . ."

The Argentine Andes are very little different from those of Chile, which will be described in a succeeding article.

The Argentine pampa has often been compared with the Mississippi Valley, and the Parana and Uruguay to the

Missouri and Mississippi Rivers. The pampas, however, run straight to the sea, with the Parana merely skirting their northern edge.

Between the Parana and the Uruguay lies the rich province of Entre Rios, the Argentine Mesopotamia. The two rivers merge to form the enormous Rio de la Plata, 138 miles wide at the mouth, 57 miles wide at Montevideo, and 25 miles wide where the Paraguay and Uruguay join.

Like our own largest city, Buenos Aires is primarily a port, and those who live there are called "porteños," portdwellers. Dredging and the building of breakwaters was necessary before the great system of docks could be constructed. The port of La Plata, nearby, is connected with the river by a canal. Bahía Blanca is an important agricultural port, and the undeveloped, ill-favored harbor of Puerto Gallegos deserves mention as being the Argentine port nearest the Straits of Magellan. Were the Panama Canal put out of operation, Puerto Gallegos would become significant.

Only six countries in the entire world have more railroad mileage than Argentina, and the whole system is gathered at Buenos Aires into a thickly tangled skein. This extensive rail net is a valuable defense factor, as it could be utilized by the defender and only yielded to an attacker in a ruined condition, stripped of rolling stock. An invader from Brazil could enter Argentina with the aid of lines through Paraguay and Uruguay. Forces moving from Argentina for the purpose of conquering the west coast of South America would have the choice of crossing over directly to Santiago de Chile by the Trans-Andean Railway or of going to Peru by way of Bolivia.

Besides a rail connection with Chile there is a Trans-Andean Highway running from Mendoza in western Argentina. Argentina has taken highway development seriously only for the last ten years, and most of her 250,000 miles of road are unsurfaced.

Argentina has many developed airfields with repair facilities, lights and radio equipment. It also contains some of the best natural flying country in the world—flat plains with sparse vegetation.

The Argentine theater thus resembles that of the United States, with good dock facilities, good communications, and, in the eastern and central portions of the nation, terrain well suited to the maneuver of mechanized forces. As in the United States, the invasion job could not be finished, access to the Pacific could not be won, without arduous mountain fighting.

An Argentine campaign may never be fought. If the United Nations can regain the initiative in Europe and in Asia it will not be started. Anglo-Saxon command of the seas would obviate it. But if the tide of war sweeps to the New World, Argentina could become the most powerful of our southern allies.

# TEACHING OLD DOGS NEW TRICKS

By Major George M. Dean, FA

Yes, Mr. Field Officer, one of the first things you will learn during the Field Officers' Course at the Field Artillery School is that the old saying, "You can't teach an old dog new tricks" is absolutely false and without any basis of fact. However, at the end of about the fourth week of this course you may be somewhat inclined to believe the old saying has some merit after all.

The reason for this mental condition is readily apparent after taking a good look at the pile of text books they gleefully hand you on registration day, and take it from one who knows, you will be required to study most of these books from cover to cover.

Did I hear you say, Mr. Battalion Commander, that you already knew what is in those field manuals and that you have a fine battalion which you secretly (if you are modest) think is the best battalion in the army? After you complete the Field Officers' Course you will honestly admit (to yourself) that there were a lot of important things you had forgotten about!

At the first session of the course the commandant will inform you that he considers the Field Officers' Course the most important one given by the School. Your reaction to this is a slight inflation of the chest and a feeling of superiority. During the next eight weeks, however, the able faculty will completely deflate you. For after all, it would take a "superman" to retain even a shred of dignity after eight weeks of climbing in and out of the back end of trucks and carrying a big white bag (you will learn its name the first day) filled with more gear than you carry on your CP truck.

The course covers the tactics and technique of the field artillery battalion and regiment, laying special emphasis on command and staff functions. A brief summary of the course and the approximate number of hours allotted to each subject follow:

<i>Subjects</i>	<i>Number of Hours</i>
<i>Tactics:</i>	
S-2 Subcourse .....	39
S-3 Subcourse .....	15
S-4 Subcourse .....	12
Communications .....	15
Tactics General .....	36
Practical Exercises .....	90
Miscellaneous .....	4
Sub-total .....	211
<i>Gunnery:</i>	
Observed Fires .....	13
Unobserved Fires .....	48
Fire Direction .....	32
Sub-total .....	93
Field Exercises Combining Tactics and Gunnery	56

and Firing .....	4
Materiel .....	12
Motor Transport .....	5
Methods of Instruction and Training .....	381
Total .....	381

Looks like a good course doesn't it? Well, it is good. It is taught by as fine a group of instructors as could be assembled and is as well rounded and thoroughly practical a course as could possibly be given in the short period of eight weeks.

The two classrooms located in the Old Post area are comfortable, well lighted and equipped; adjoining are the offices of the instructors. The living quarters assigned students are adequate and comfortable.

This course will be of great value to all regimental and battalion commanders and do much to increase the effectiveness of training throughout the Field Artillery. No longer will the battalion commander accept, without question, an estimate of time for a battalion survey submitted by a survey officer who thinks he is "hot" with a transit, for now the "old man" is hot himself on survey, having carried a transit over half the Fort Sill reservation and up all the steep hills. Here at the School, Point "A" is always located on top of a convenient high hill. The field officer receives twice as many hours' instruction on survey plans as the battery officer. Likewise after completion of the course the student will have performed the duties of every member of the fire-direction team, with the result that from actual experience he knew how every operation of the FDC should be performed.

Do you have an S-2 in your battalion or do you call him the "RO" and consider him as a "spare part" to be used for special duty, Summary Court Officer, Trial Judge Advocate, etc.? You will soon learn that this officer is an S-2 and not an RO and that S-2 has a big job and should not be used as a "catch all." So it goes for the entire staff. After completing the course you may wonder who in the H— you are going to assign the "odd jobs," but I'll wager you won't use S-2.

During field exercises students take over the duties of entire regimental and battalion staffs and use the troops and material of the 18th FA.

In answering the prospective student's question, "What should I bring to Sill?" the answer is brief. Lots of field clothes and an open mind and a determination to put all your punch into the course with the objective of getting out of it the maximum of profit.

So, Mr. Field Officer, I suggest that you invite your regimental or division artillery commander to dinner and quietly break the news that while you hate to leave the outfit, you like to get a real break and receive a detail to the Field Officers' Course. If he sends you, thank your

lucky stars for you will have an opportunity to attend a course that will make itself felt throughout our arm by improving artillery leadership and thereby making more certain our success in battle.

One last idea, shortly after your arrival at the School you will soon learn that many Battery Officer Course

instructors are recent graduates of the BO course. You can profitably use that idea in your own outfit by using your BO graduates to teach your officer and troop schools.

P.S. Don't bring your golf clubs. You will be busy studying, on Sunday mornings.

TIRES: INFLATION THEIR LIFE LINE

This tire story is completely devoid of fantasy, glamour, fun and trick endings. It's straight dope on various angles of tire maintenance.

Here goes: A properly inflated tire mounted on a wheel but not resting on the ground is perfectly round and has a definite diameter—called the overall diameter, Figure 1.

Figure 1 shows the same tire on the road and carrying its rated load. It's flat on the bottom, and so naturally the overall radius has changed. Let's call the new radius the loaded radius. Obviously this loaded radius is going to change as the load is increased or decreased and as the inflation pressures rise and drop. Charts I and II show these variations in loaded radius, and also give the variations in the revolutions per mile per tire.

WHEEL BEARINGS AND AXLES

Here's something else: Wheel bearings are built to carry a certain load. Let's say that the outer bearings on a set of dual wheels carries 40% and the inner bearings 60%. If the inner tire goes flat or is considerably underinflated, as it frequently is, then the outer tire carries most of the load. It's tough on the tire, sure, but think of the outer bearing: It's staggering along carrying a load *four* times greater than its rated capacity.

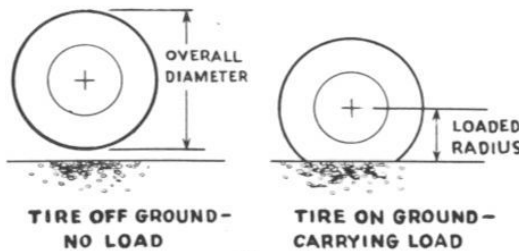


Figure 1

If the outer tire is flat or underinflated, then the inner tire takes a beating and the inner bearing carries about three times more than it's supposed to. But that's not all. The axle is supposed to be supported by *two* tires, and when only one is doing the work, the axle starts bending. If it stays bent long enough and is subjected to shock loads, it'll have a permanent set in it — and then things do start going wrong.

In army 6x6's, the two rear axles are connected by the propeller shafts through the transfer case. Each pair of rear wheels should rotate at the same speed, which means the loaded radius of the tires must be the same all around.

TANDEM DRIVE

Take the example of a truck with 7.50-20 tires and a 6.6 axle ratio. If the wheels on the rear, rear axle make 582 revolutions per mile, then the pinion shaft will make  $6.6 \times 582$ , or 3841.2 revolutions per mile. But if the tires on the forward rear axle haven't the same loaded radius as the rear ones, they'll make, say, 577 rpm instead of 582. So the pinion shaft will make  $6.6 \times 577$  or 3808.2 rpm. Take a gander at Charts I and II and see what a small difference in the tire loaded radius will give this condition.

CHART I

Pounds Load	Pounds Inflation	Loaded Radius	Rev. Per Mile
1750	55	17.31	577
2250	55	17.16	582
2750	55	16.96	589
3250	55	16.80	594

Showing effect of varying loads with constant inflation—7.50/20-8 tire.

CHART II

Pounds Load	Pounds Inflation	Loaded Radius	Rev. Per Mile
2250	40	16.93	590
2250	45	17.02	586
2250	55	17.16	582
2250	65	17.26	579

Showing effect of varying inflation pressures with constant load—7.50/20-8 tire.

The two pinion shafts are connected, so there's no difference in their rotative speeds. What happens when inflation isn't equal? Just this:

The rear axle tries to over-run the forward axle and the forward axle tries to slow up the rear. The result is one grand "wheel fight."

The flexible tire tread squirms and slips on the road, the prop shaft tries to wind up, the gear teeth are loaded to extremely high pressures, bearings are overloaded—and boy, grief is waiting just around the corner.

The high gear teeth pressure tends to squeeze the lube out, and the steel-to-steel contact gouges the gear teeth until they look like a half eaten steak. What happens to the tire tread is a sin.

—Army Motors.



# COMMUNICATION PROBLEMS

By Lieutenant W. A. Scoville, FA

When the situation reaches a point where centralization takes place, the battalion communication officer regains direct control of the communication system. With this system the battalion is welded into a single unit of fire power. The battalion commander becomes, in effect, commander of a battery of twelve guns, which is capable, however, of splitting into three independent units when the situation so demands. On the efficiency of the communication system depends the effectiveness with which the battalion commander can employ the fire power of his battalion.

When an action has progressed to a point where centralized control is necessary, the three gun batteries are virtually useless to the battalion commander until communication is established. He is in somewhat the same position as a gun battery commander who has lost contact with his battery. Since increased emphasis is thus placed on speed in establishing communication, greater dependence is placed on the use of radio.

Under the present Table of Basic Allowances the three gun batteries are each allotted three SCR-194 radios, and the battalion headquarters battery, seven. The method of

sets at the same time on the same frequency. Note that the receiver transmits the signal and that the word "usually" is used. This signal does not interfere with two-station operation because the SCR-194 is a trans-receiver; i.e., the parts used for transmitting are also used for receiving. It is converted from a receiver to a transmitter when the push button on the microphone is depressed. This operates a relay, changing the electrical circuit. It is either a receiver or a transmitter, never both.

In the three-station net, shown in Figure 1, this energy radiated by the receiver of A will block reception by B of transmissions from C if B is within range of the receiver signal. In like manner, the signal radiated by the receiver of B will block reception by A of transmissions from C. Range of the signal varies with atmospheric conditions and terrain, but is generally effective for about fifteen hundred yards. The set at the guns and the set at the fire-direction center will normally be well within this range. The set at the forward observation post will normally be out of range of the high-frequency receiver signal of the other two sets.

If the set at the fire-direction center (A) and the set at the guns (B) are operating as receivers at the same time, neither will be able to hear the forward observation post (C). The receiver signals of A and B block reception of the transmissions from the forward observation post for each other.

However, because the receiver signal of the forward observation post set is out of range of the other sets, A and B can communicate with each other. Therefore, under normal conditions either the set at the fire-direction center or the set at the guns must be shut down if communication is to be established and maintained by one of them with the forward observation post. Which set should be shut down? No hard and fast solution to fit every conceivable case can be offered, but below is described a method which will apply in many instances.

Situation: The battery is operating independently. The forward observer is in direct radio contact with his battery. No communication has been established with fire-direction center. Centralized fire control may be achieved in the following manner (refer to Figure 1):

The set at fire-direction center contacts the set at the guns. The set at the fire-direction center and the set at the guns, though now unable to communicate with the forward observation post, for the reasons outlined above, can nevertheless communicate with each other. Fire-direction center can now control the fire of the battery, given the means of observation. When wire communication is established between fire-direction and the guns, the set at the guns shuts down. Communication between

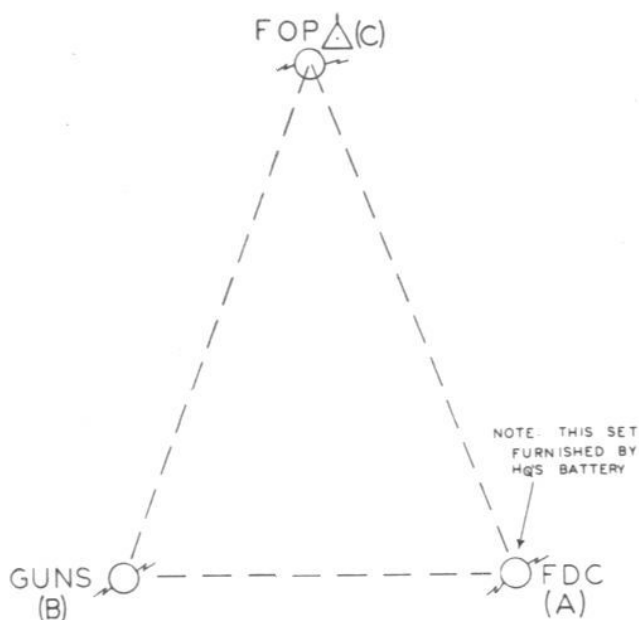


Figure 1

their employment "depends on the situation," but the basic radio net will be according to Figure 1. When operating as a receiver, the SCR-194 transmits a high-frequency signal. For this reason, it is usually impossible to operate three

the forward observer and fire-direction center is then established. When wire communication is broken, the gun set begins operation immediately.

To illustrate the application of this method, assume the following common situation:

The battalion has been ordered to displace forward. Battery A is to move first, accompanied by the necessary personnel and equipment from headquarters battery. As soon as it is in position and ready to fire, Batteries B and C will follow.

Battery A moves forward and into position. Radio communication is immediately established with the forward observer, if it has not been maintained during the march. The forward observer can now fire the battery. Wire communication is established between fire-direction center and the gun position. The gun radio set shuts down. The set at fire-direction center establishes contact with the forward observer. The forward observer and the liaison officer can now fire the battery, though this is a secondary mission of the liaison officer. The radio net is now shown in Figure 2.

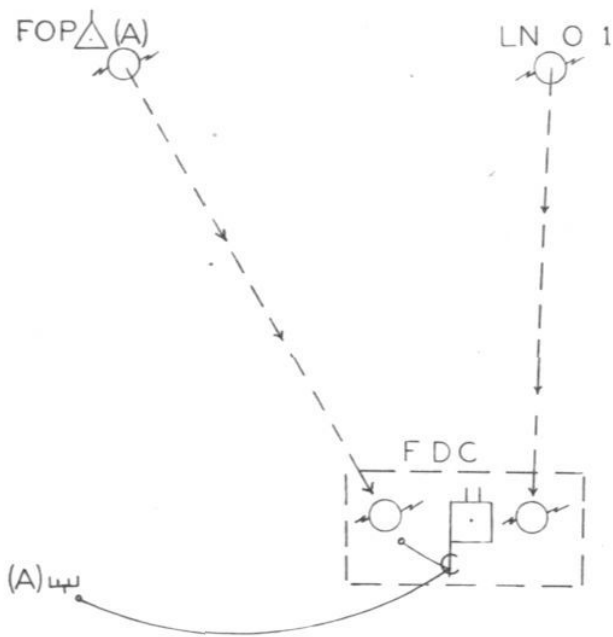


Figure II

B and C Batteries with the remainder of headquarters move into position. Radio communication is immediately established with the fire-direction center. Fire of the entire battalion can now be directed by the forward observer of A Battery or the two liaison officers. The radio net is now as shown in Figure 3.

When wire communication is established with B and C Batteries, the sets at their respective gun positions shut down. Radio communication with B and C Battery forward observers is then established by the fire-direction center. The SCR-194 radio net is complete as shown in Figure 4.

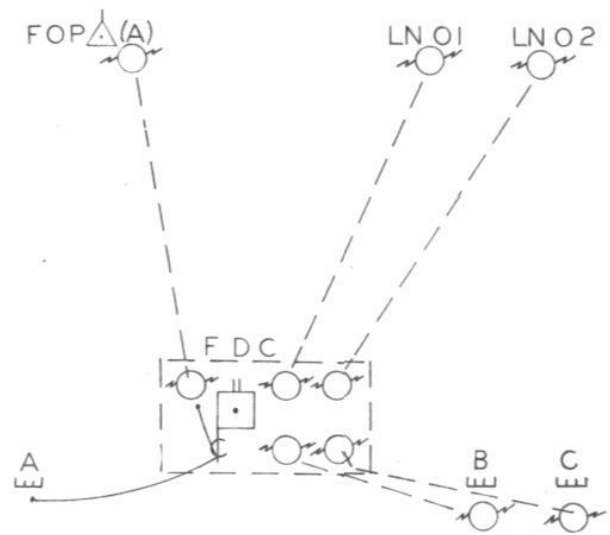


Figure III

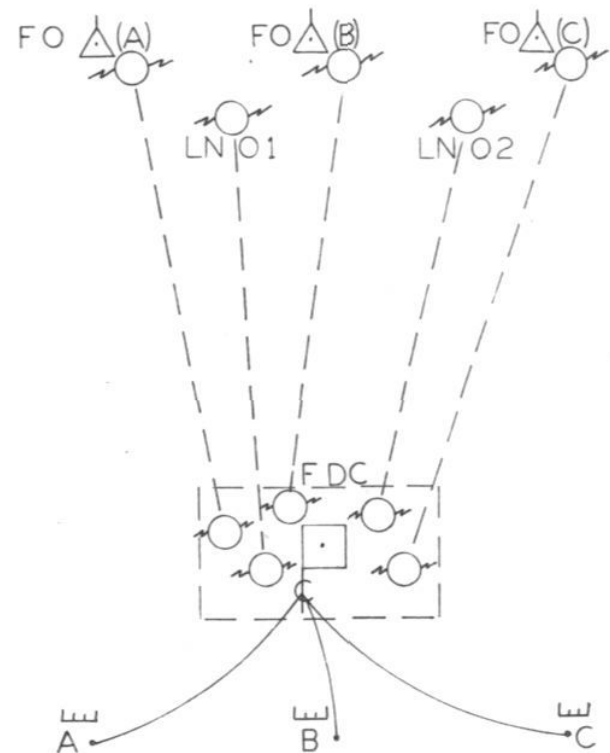


Figure IV

In case the battalion commander desires a forward observer to fire his battery at targets of opportunity, or for any other reason to decentralize control, the set at the guns is instructed to begin operation. In this case the set at the fire-direction center, after informing the forward observation post, shuts down. The forward observer can then fire his battery directly.

Obviously, radio operators must be dependable and thoroughly trained to make this net function. It will be found advantageous to have the operators of each net

habitually work together to achieve the maximum co-ordination.

However, as a complication to the problem, three sets can sometimes be operated simultaneously on the same frequency. If there is a large enough hill or tree mask between the fire-direction center and the guns, if the distance is greater than fifteen hundred or two thousand yards, or if atmospheric conditions are particularly favorable, the high frequency signals transmitted by the receivers at the gun position and the fire-direction center will not block reception of the forward observation post transmissions. Operators must be trained to recognize and take advantage of this situation.

Not only must the operators be well trained, but also the officers. The SCR-194 set has certain very definite operating limitations. If the officer using the set is not thoroughly familiar with these limitations, poor communication, or none at all, will result, as the enlisted operator may, in deference to rank, permit the set to be operated under unsuitable conditions. In addition, the officers should be capable of operating the set in case the regular operator becomes a casualty.

No mention has been made of the third SCR-194 in each battery. Since five frequencies are the normal allotment of a light battalion, and these are used by the three battery nets and the two liaison nets, no separate net can be set up, but many uses will be found for the third set: to act as a relay station, to provide leap frog observation posts, to provide communication between the battery commander and executive, and to serve as a replacement for the other sets.

When the wire net in the situation previously discussed

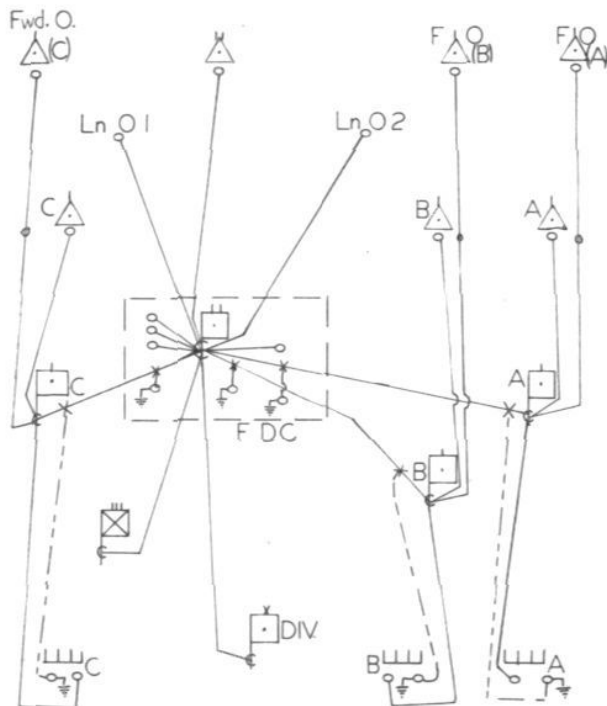


Figure V

is complete, it is as shown in Figure 5. This net must be regarded as ideal under ideal circumstances, but under less favorable conditions it is often unattainable and sometimes not desirable. The system which should be installed for any given situation is the one which will best meet the requirements of that situation. Any number of variations from this basic wire net can be adopted to conform to the situation, and thus speed installation and meet requirements.

For example, assume that radio silence has been imposed and rapid centralization of fire control is desired. The wire net shown in Figure 6 can be installed rapidly and will fulfill all requirements. Lines from the battalion

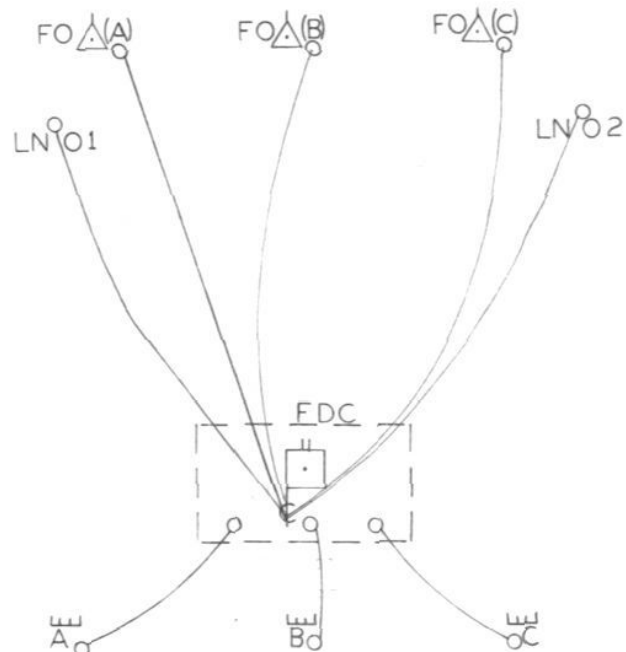


Figure VI

switchboard to the forward observers and from the fire-direction center to the gun positions are laid by the respective batteries, while the wire trucks of the battalion are employed in laying lines to the liaison sections. Installation is further speeded by eliminating all but the battalion switchboard. This net has the further advantage of providing quick and easy coordination between observation posts, as only one switchboard is involved in calls between them, whereas with the conventional net a call between observation posts must be routed through three switchboards. Mutual identification of targets permits their accurate location by the observers, and thus the battalion commander is aided in achieving the maximum degree of surprise with the fire power of his battalion.

This system has the disadvantage of preventing ready decentralization of fire control functions. However, this too could be accomplished by lifting the radio silence. In any case, the wire net should be improved as rapidly as time permits.

Speed in establishing wire communication can often be increased by making use of gun battery wire, equipment, and personnel, as shown in the last example. Battery wire sections should be considered as a pool upon which the communication officer can draw whenever it is advantageous to the communications of the battalion as a whole.

As a further illustration, when the three gun batteries take positions in a line with the battalion command post on one flank, if the gun batteries are required to lay lateral lines communication can be established with all by laying one line from the battalion command post to the nearest gun battery. With the line simplex between headquarters battery switchboard and that of Battery A, and with radio communication between the fire-direction center and C guns, the entire battalion may be fired by A and B Battery observers. Of course, this system is also improved as time permits. See Figure 7.

Location of the battalion command post with respect to the batteries determines the length of the lines that must be laid, and consequently the time required to lay them. Habitually placing the artillery command post near that of the infantry places an undue strain on the wire sections. It is much easier, and faster, to lay three short lines to the batteries and one long line to the infantry command post than to lay three long lines to the batteries and one short line to the infantry. If the location of the command post is chosen with these factors in mind, time and wire will often be saved. Wire should be hoarded and conserved. It is almost as valuable to the battalion commander as ammunition, and like ammunition, there is rarely enough and never too much.

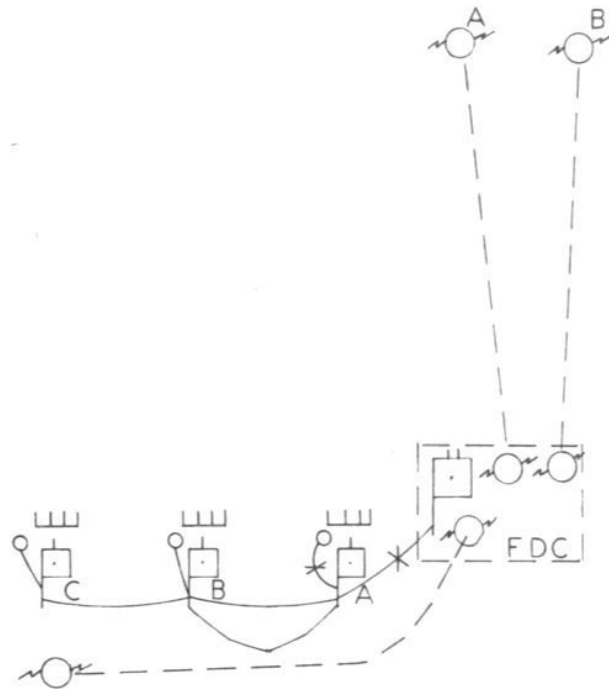


Figure VII

Reports from the present European war indicate that radio communication, because of interference, has frequently failed completely. Too great dependence should not be placed on radio and we should be prepared to function at any time without it, though obviously its absence would be a severe handicap. Radio should be considered as a secondary means of communication, highly useful and important when it can be used.

#### CHECK UP BEFORE FAST CHARGING

Whatever else fast chargers are, they're not foolproof. You're playing with a lot of current and if you don't follow instructions exactly, you'll ruin the battery.

The recommended procedure must be followed accurately. It includes careful hydrometer and thermometer readings with electrolyte at proper level. (A half inch above the top of the plates.)

Poor hydrometers have caused some trouble in setting chargers for the proper charge. The average battery hydrometer reads only as low as 1140. When the hydrometer fails to float, the only thing that you know is the specific gravity of the battery is below 1140. Since some batteries have a specific gravity considerably below that, and since the charging time is based on specific gravity, it is impossible to determine the setting. Hydrometers for fast chargers must read as low as 1060 to be any good.

If the time on charge, which is based on specific gravity, is not correctly set, one of two things will happen. If the fast charger is set for too short a time the battery will not get as much of a charge as it should. The result is exactly the same as if it were taken off a slow charger too soon. If the charger is set for too long a time the battery will get the fast charge for too long a period, which will result in excessive gassing.

Excessive gassing itself is an indication that much of the current you are putting into the battery is being wasted. Instead of being stored it is being used to separate the electrolyte chemically and turn it into a gas. When this happens, it is possible to waste as much as 90 per cent of the current going into a battery. So you see, accurate hydrometer readings are necessary if the fast chargers are to do their job.—*Army Motors*.



*The Mark IV has heavy fire power.*

## THE UNEXPECTED ALWAYS HAPPENS

By Lieutenant Colonel David Larr, GSC

There are a myriad wise, near-wise, and not-so-wise sayings anent wars and the men who fight them. The one probably repeated most often and with most conviction is, "There ain't no justice." — True beyond a shadow of a doubt—ask any soldier man. But a little soul searching at times might raise an accusing twinge of conscience—"Perhaps, if I had had my head up, I wouldn't have been caught with my pants down." You always meet the breaks at the most inconvenient moments. For instance:

It was cold as the young commander of a 25-pounder troop\* rolled out of his "flea bag" in the darkness preceding the desert dawn. It was foggy on top of the escarpment east of Halfaya ("Hellfire") Pass, and he could hardly see his hand before his face. The mist deadened all sound, and he knotted his muffler more securely around his neck as he picked his way over the limestone slabs to the tiny officers' mess, and put down the inevitable fried bully and mug of scalding tea. As the fog began to assume a grayish tinge he found his driver, who had stowed flea bag and other kit in the back of the 15-cwt. truck and was waiting. He glanced inside to check presence of the radio operator before starting out to man the forward OP for the day. That worthy individual was seen hunched in his

\*The 4-gun unit of British Divisional artillery.

AUTHOR'S NOTE: The incident described in this article does not in any way reflect upon the general state of training or combat efficiency of the troops involved. Such occurrences take place in all armies in all parts of the world and will probably continue to do so as long as men retain human frailties. The operation in which this incident occurred resulted in ejection of the German reconnaissance force from the area of the British covering force without material damage to British installations or gain for the Germans.

blankets by his set—somnolent—his only reaction apparently being a dreamily abused feeling at the prospect of bumping and lurching along the rocky track above the escarpment at such an ungodly hour. Inasmuch as there was a strict radio silence except for check-in, there did not seem to be any particular reason for bestirring himself until after they got to the OP. They never did open up until then, and only for a moment. If one checked in before, the blasted buzz box might be bumped out on the way.

Captain C. did not even bother to line-in his truck on the course to the OP some nine miles northwest. He or one of his lieutenants had been making this trip daily for almost two months. And in spite of the featureless character of this particular portion of the Libyan plateau, he could almost have driven the distance with his eyes shut.

He swung up to his usual perch on top the truck cover, with his feet on the back of the seat to the left of the driver, and glanced at his compass to check his bearing. It was a bit colder than usual and perhaps it would be well to get out an extra wrap for the ride up. The "column" would not be moving out for possibly half an hour yet, if they followed their usual schedule, for the sector had been quiet since the June battle and it did not seem much use for the guns to go into their daytime position before the OP was functioning.

Around him in the rapidly whitening mist, figures were beginning to stir. The dark shadows of vehicles were taking shape. Nose to tail, in columns about 20 yards apart, guns on the outside under the eyes of watchful sentries, they rested in the close "leaguer" used for mutual protection at night. Four sections of 25-pounders;

a company of motorized infantry; portee 2-pounder antitank; Bofors light antiaircraft; a platoon of engineers—it was called a "mobile column" and had all the elements of a small, closely-knit, hard-hitting task force. They were a good lot these, Captain C. reflected as he rummaged in his bag for the extra pullover he always carried. They had, many of them, been through Dunkirk, and now in this strange, terrible land they had mastered the local lore and were well able to take care of themselves in any situation. With this comforting thought he motioned to his driver and they bumped away toward the OP.

The three armored cars of the northernmost post of the screen above the escarpment always leaguered for the night along the track about two miles in rear of their daytime OP, which was designated on the map merely by its elevation of "200," and they occupied it jointly with the artillery throughout the day. From it the Boche traffic was clearly visible in and out of the top of Halfaya, some 15,000 yards to the northwest.

"Point 200" really was not much of a hill, but it gave a breathtaking panorama of the Bay of Sallum, and from its northern side the coastal plain stretched up past the bottom of Halfaya to Sallum village at the foot of the cliff just west of the bay. It also possessed a beautifully even slope for about 3,000 yards to the northwest and west, with no folds into which guns might be dropped by night to make things unpleasant in the morning. Now and then the Boche would shell the place with 105's or 88's from the Halfaya defenses, or bring out Mark IV's and shoot it up from the valley near Battuma. But usually they were content to watch from their own OP on Suweiat, just short of Halfaya, and only became rude when they wanted to divert attention. They did not even mine the place at night, which was something of a wonder although that was a game at which more than one could play.

As the driver picked his way up the track so laboriously marked by the Italians during their brief hour of glory in the fall of '40, Captain C. realized he was getting a bit behind schedule. The fog was becoming quite thin in spots and the glow of the fast-coming dawn heralded a sun which would shortly dissipate it altogether. He noted familiar landmarks as he passed—a smashed CR-52; derelict bits of Mussolini's motorized army from the great retreat of the year before; a crashed Hurricane and a burned-out 25-pounder from the June show: the amazing battlements of "Halfway House," patiently piled stone upon stone during Graziani's advance in the vain hope of protecting the pass down the escarpment: the day-position of the "column," with the rear end of the wire line he would use during the day; and even gazelles in certain patches of camel hump, whom he almost imagined were saying "Good Morning." He had seen them all so often during the two months since his battery landed in this godforsaken spot after its long voyage from England.

In many instances fog deadens sound to a surprising degree. As he reached the night leaguer of the armored cars he noted the smoldering embers of their fires. His driver suddenly stopped with the cryptic remark, "Guns!" The rattling and creaking of the truck, as it bumped and wallowed over the stones, interdicted practically every outside sound. So Captain C. listened for a moment, shrugged his shoulders, and motioned the driver to go on. It was doubtless just the armored cars clearing their guns as was the universal practice of all units in the desert. After the day's dust and the night's dew, all automatics were cleaned and a burst or two fired into the air to make sure they were functioning properly. (This salute to the morning had become so normal that units returning to Cairo for refit used it in lieu of a bugle for reveille.)

The sun had broken over the horizon a few minutes before and the fog was clearing rapidly. Captain C. motioned his driver to get along faster as another burst of machine-gun fire echoed through the thinning mist. It was muffled and of indeterminate direction, but to his alarm it was followed by a heavy bump as if someone had suddenly dropped a giant packing case on a warehouse floor. They careened and crashed along as the driver disregarded all comfort and strove simply to preserve springs and tires from utter destruction. The radio operator in the back awoke with a strangled protest and hung on for dear life.

In a few minutes they were breasting the rise of the rear slope of Point 200. The fog had cleared away, and Captain C noted that the top of the hill was somewhat like a very shallow crater; a *chôt* or camel hump area in a saucerlike depression was surrounded by a low ridge. As he came over the rear crest, he saw, with a sinking sensation, that there were no armored cars hull-down behind the ridge in front. At this moment he also heard above the clatter and bang of the truck an unmistakable heavy roar of motors not far away, and a quick glance skyward revealed no planes. Careening through the camel hump, now with two wheels on the ground, now with only one, the driver risked broken springs, bent axles, flat tires, and all as they practically flew toward the northern crest. Captain C. checked him as they eased up behind the ridge. He unslung field glasses to look toward the northwest. The look was hardly necessary. The roar of motors had increased so that the air fairly shook, and one glance put his heart into his throat. From the escarpment on the right for possibly a mile and a half along the shallow valley toward the southwest were row on row of tanks—German tanks—and they were about 100 yards apart and coming toward him flat out. Through the dust which they threw up even from the dew-laden ground, tiny specks behind the leaders extended as far as he could see. The closest were not more than 2,500 yards away. In about four minutes they would be RIGHT WHERE HE WAS!

His strained shout to the radio operator was not

needed. He heard the generator whine even as he thought, and the man fairly poured his soul into the microphone as he chanted the incantations of his trade. Captain C. stood almost spellbound as he watched the line of low black monsters roll up the hill. The voice of the operator was becoming almost tearful. "Hullo Como, Kupa One calling, Hullo Como, Kupa One calling, Hullo Como, Hullo Como, Kupa One calling, Over, Over!" Then the snap of the switch; the strained silence for interminable seconds; the whine of the generator—"Hullo Como, Kupa One calling, Hullo Como, Hullo Como, Kupa One calling, Kupa One calling, Over, Over!" The roar grew louder. A bright lemon-colored flash stabbed out from one of the black dots in the second or third wave, followed in the twinkling of an eye by three more from others. "Hullo Como, Hullo Como, Hullo Como, Kupa One calling, Kupa One calling, Kupa One calling, for the love of God, OVER,—Over, Over!" A rising scream of shells—a quick series of smashes like huge boards dropping from a height—as 75's from Mark IV's landed just over in the camel hump behind. The leading tanks were well up the hill now and a staccato series of tiny winks of light came from two or three, serving notice that he had been seen and they were coming in for the kill. In the uproar the crack of the bullets was more sensed than heard. The 75's were landing behind in two's and three's, searching across with Teutonic thoroughness toward the rear crest. "Hullo Como — Hullo Como . . ." the radio's call was a prayer and a sob. "Kupa One calling—Tanks—Tanks—Over! Over!" The driver touched Captain C.'s foot—"Hadn't we better go, sir?" Captain C. hurled himself into the seat beside the driver, who needed no command. The truck leaped as a live thing as it turned in almost its own length back toward the rear crest. With no regard for any obstacle, charging straight ahead, the driver hung on the wheel for dear life, foot to the floor. Their lives and those of their comrades depended on warning the unsuspecting column which now must be very close to its daytime position area, six miles back. No time now to hook the telephone onto the wire which had been lying about 200 yards to the left of the place they had stopped; no time now to wish they had checked the radio before they started; no time now to wish they had been there sooner. Over the tail gate went bedding rolls, spare rations, spare tires, tools, cushions, extra clothing, everything movable or removable, except water, to lighten the burden on the truck and speed their flight. As they leaped the rear crest of the hill, the ground around suddenly boiled tiny patches of dust and glowing orange streaks shot by as the leading tanks reached out for their quarry from the ridge behind. Then respite for a moment as they plunged down the rear of the hill toward the track which led to safety so far away.

Even as they clung to anything reachable and the truck leaped insanely from stones and hummocks, the roar from behind grew louder and louder. No more shooting now—it was a grim race with death the stakeholder. Captain C.

suddenly found himself resolving never to ride to hounds again, should he miraculously escape the rôle of fox in his present predicament.

Some six miles back with the 25-pounders, the column was leisurely approaching its day position behind the long slopes of an ill-defined rise of ground called "Alam Mad'an." There were about 70 vehicles, all told, and they moved in the usual desert formation: a rough block, with extreme deployment. The G.P.O. (Executive) in his truck had gone on ahead, and his radio operator was tuning his set preparatory to checking in with the OP. It was about an hour and a quarter after Captain C. had left the night's leaguer at the first sign of dawn.

The fog had completely disappeared in the slanting rays of the morning sun. Here and there men were peeling off overcoats. The day breeze from the Mediterranean, 20 miles north, had risen and incipient dust clouds began to float downwind from vehicles as dampness from the dew rapidly vanished. Movements were slow, but with the smoothness of daily occupation of the same holes. As the tractors drew up to the gunpits, outposts from the motor infantry began to fan out towards the flanks of the crest about 1,500 yards to the northwest and west. Cannoneers unhooked guns and rolled ammunition trailers down ramps into the pits. Camouflage nets were shaken out. At each vehicle the cook for the day began to rattle his gear, nurse his stove (if he had one), and assemble what passed for breakfast.

The G.P.O. was faintly uneasy as he became conscious of an ill-defined vibration filling the air. It sounded much like heavy bombers, low on the horizon somewhere. Someone pointed, and he looked up to the reassuring sight of two Hurricanes on the morning "Tac-R"\* headed westward high above him. He told himself that probably Matruh would catch it in an early daylight bombing raid, and attempted to shake off a sense of foreboding. As a matter of fact, he mused, it *was* a bit late to be going in. He walked around his truck to check the radio contact with the OP. The telephone operator's head appeared in the doorway of his dugout to say that he could raise nothing on the wire. The radio man seemed to be having trouble also, and he leaned on the tail-gate to watch.

A shout from some cannoneers brought him from his reverie and he looked to see fingers and faces pointed toward the slope to the northwest. Leaping up on top the dugout, he saw a tiny dot which in his glasses he recognized as a light truck. It was tearing over the ridge in a cloud of dust, lurching and swerving, truck cover flying in the wind, wheels hardly touching the ground. And as he looked, he realized the roar which had disturbed him a few moments ago now filled the heavens. On the western horizon a low dust cloud stretched from right to left almost as far as he could see. Just then black dots on a mile-wide front broke over the ridge behind the fleeing truck.

\*Tactical reconnaissance.



*British 25-pounder gun section complete.*

Major N., the column commander, rode by on his way out to meet Captain C. The G.P.O. knew full well his guns would hardly be in action in time to meet the oncoming menace. Even if they were, it would be an heroic but futile gesture. To shoot it out with so many adversaries would be impossible. Looking desperately back toward the disappearing gun tractors, he saw with mighty relief they were returning as fast as gasoline would carry them. Gun crews without command were running ammunition trailers and guns up the ramps from the pits preparatory to hooking on. Throughout the leaguer, equipment and utensils were being flung any old way as weapons and ammunition were broken out. Individual vehicles of the supply and maintenance staffs were roaring off to the rear from all parts of the area.

As Captain C. and the column commander arrived back at the position area, gun crews were desperately getting the guns ready to roll. Only the Bofors antiaircraft and the antitank remained in purposeful silence, prepared to sacrifice themselves in their mission of delaying the enemy to permit the escape of the remainder of the unit.

Major N. thought quickly. From the size of the deluge about to descend upon him, it was apparent that his four puny antitank guns, even strengthened by the antiaircraft, would be swallowed up without even making the tank drivers ease up on their throttles. The nearest help lay 11 miles down the escarpment to the southeast, at the forward organized area of the main body of the covering force. There were many guns, ample supporting weapons, all the lethal gadgets of modern defense in positions prepared to meet all-round assault. Best of all, there was a small but well-laid mine field. Major N. could not perform his mission to "harass and delay" by sacrificing part or all of his unit in a futile attempt to stem the German advance. So, with a sweep of his signal flag, he gave the word for his combat elements to follow the service detachments which were already streaming toward safety.

Shells from the Mark IV's were falling amongst the vehicles by this time. The roaring rush of the tanks had carried them almost to good machine-gun range. It took no second signal, and everyone except the four antitank guns plunged away at the best speed they could coax from their engines. They all knew where to go! As it had been with Captain C., equipment, cooking utensils, bedding, spare parts, everything except water and ammunition went overboard to lend wings to the flying vehicles. The commander of the antitank troop stood his ground only long enough to see the 25-pounders clear the opposite side of the camel hump area in which their positions lay, and to fire a couple of rounds at the leading Mark III's. They were so close he could see the glint of the sun on their sullen, gray turrets. Black crosses in their outline of white gleamed wickedly as they came, each tank the apex of its towering "V" of yellow dust. The 2-pounders being mounted on light trucks, there was no problem of getting out of action, and they took off after their flying comrades.

The ensuing scene was one of unrestrained pandemonium. Guns bounding and bouncing in the air, switching from side to side, objects of all kinds erupting from the back of vehicles as they leaped from rock to rock. No attempt to go around obstacles, just keep the wheels straight and the throttle to the floor, hang on to anything that looked substantial.

The German mediums gradually reduced the distance separating them from the heavier elements of the column. The 25-pounders in particular could not keep up the pace, and around each there shortly began to fly the orange streaks of machine-gun tracers, bounding and ricocheting from the stony ground at grotesque angles—for all the world like Roman candles—or stopping dead to spin and sputter, then wink out with a quick wisp of gray smoke. Now and then some reckless tank gunner



would let fly with his 50-mm. in hope of making a killing hit, although this was generally frowned upon in the Panzer Division. spurts of dust sprang from the ground or sparks suddenly shot from stones around the guns desperately striving to keep ahead of their pursuers—more tracers, with now and then a hit on gun or caisson. First one gun and then another changed from a leaping, straining thing to a deadweight as tires went flat. No time now to wish for run-flat tires or puncture-proof tubes. No time now to change or even cut loose the dragging burden behind. On they went, flat tires or no flat tires, until even the steel wheels came off two of the guns. Cannoneers leaped to cut loose the burdens, abandoning guns and caissons to the enemy.

After four or five miles of this free-for-all in which tanks, guns, trucks, and even dismounted men were indescribably mingled, the tanks gradually roared off towards the south flank. The harried vehicles continued, shepherded by no more than three or four armored cars. They streamed into the position behind the mine field,

breathless and dishevelled, thankful for the comforting sight of guns, heavy, medium, and light—all pointed toward the enemy. The armored cars fired a few rounds and disappeared to the south, pursued by crashing salvos from the 25-pounders of the defended area.

Major N. and Captain C. sat in the CP dugout of the commander of the position. As they dragged on their cigarettes through trembling lips, each had a prophetic vision of the division commander, grim-faced, hard-eyed, his voice grave and unimpassioned, reading in measured tones from standing orders for the covering force. "Forward observing officers will man Observation Posts at first light." "Wire and radio communication will be checked prior to first light." "Mobile columns will be prepared at any time to harass and delay enemy movement within the area covered by this command." "Every unit, however small, is responsible for its own local security. Three hundred and sixty degrees around, twenty-four hours a day, it must never be surprised."

Their thoughts were not comforting.

---

#### AGE OF GENERALS

Next comes the vexed question of age. One of the ancient Roman poets has pointed out the scandal of old men at war and old men in love. But at exactly what age a general ceases to be dangerous to the enemy and a Don Juan to the other sex is not easy to determine. Hannibal, Alexander, Napoleon, Wellington, Wolfe, and others may be quoted as proof that the highest prizes of war are for the young men. On the other hand, Julius Caesar and Cromwell began their serious soldiering when well over the age of 40; Marlborough was 61 at the time of his most admired manoeuvre, when he forced the Ne Plus Ultra lines; Turenne's last campaign at the age of 63 is said to have been his boldest and best. Moltke, the most competent of the moderns, made his name at the age of 66 and confirmed his reputation at 70. Roberts was 67 when he went out to South Africa after our first disastrous defeats, and restored the situation by surrounding the Boer Army at Paardeburg and capturing Bloemfontein and Pretoria. Foch at 67 still possessed energy and vitality and great originality. We must remember, in making comparisons with the past, that men develop later nowadays; for instance, Wellington, Wolfe, Moore, Craufurd were all commissioned at about the age of 15, and some of them saw service soon after joining. It is impossible really to give exact values to the fire and boldness of youth as against the judgment and experience of riper years; if the mature mind still has the capacity to conceive and to absorb new ideas, to withstand unexpected shocks, and to put into execution bold and unorthodox designs, its superior knowledge and judgment will give the advantage over youth. At the same time there is no doubt that a good young general will usually beat a good old one.

—GENERAL SIR ARCHIBALD WAVELL

# THE COMPASS, M2

	PARAGRAPH
GENERAL .....	1
COMPASS, PROPER .....	2
DECLINATING THE COMPASS .....	3
USE OF THE DECLINATION CONSTANT .....	4
MEASURING AN AZIMUTH .....	5
MEASURING A VERTICAL ANGLE .....	6
USE AS A CLINOMETER AND FOR RUNNING LEVELS .....	7
CARE .....	8

1. GENERAL.—The *compass, M2*, is for use in measuring *azimuths*, either *Y* or *magnetic*, for which purpose it employs a magnetic needle. It is also equipped with a *clinometer*, by means of which *vertical angles* in mils (angles of site) may be measured; for this purpose it employs a *vial level*. It is provided with a carrying case.

2. COMPASS, PROPER (FIG. 1).—The compass is

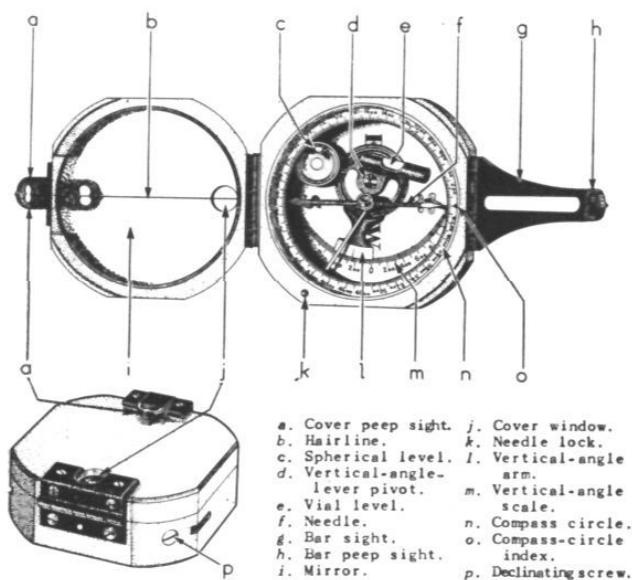


Figure 1. The compass, M2.

housed in an aluminum case which is generally square with rounded corners. The case has a hinged cover of the same shape and metal. The major parts of the compass, their locations, and purposes are:

- a. The *cover peep sight*, hinged to the cover on the side opposite the cover hinge.
- b. The *hairline*, across the center of the mirror perpendicular to the cover hinge, for sighting purposes.
- c. The *spherical level*, mounted on the vertical-angle arm and turning with it, levels the instrument for azimuth measurements.
- d. The *vertical-angle-lever pivot* supports the vertical-angle arm. The *vertical-angle lever* (not shown in the

figure) turns the vertical-angle index and is operated from outside the case.

e. The *vial level*, mounted on the vertical-angle arm and turning with it, used in measuring *vertical angles*.

f. The *needle*, turning on a jewel pivot and locked by closing the cover, for measuring *horizontal angles*.

g. The *bar sight*, hinged to the case on the side opposite the cover hinge, folds inside the cover when the cover is closed.

h. The *bar peep sight*, hinged to the bar sight proper, may be turned to form a right angle with it.

i. The *mirror*, mounted inside the cover, for indirect readings of levels and scales.

j. The *cover window*, an oval window through the cover and cover hinge, for certain sighting operations.

k. The *needle lock*, in the top of the case, operated by the cover when closed.

l. The *vertical-angle arm* turns on its *pivot screw* in the bottom of the case; by means of the *vertical-angle index* on this arm, readings are taken from the vertical-angle scale.

m. The *vertical-angle scale*, etched in the bottom of the case. The scale extends from 0 (horizontal) to 1200 mils on either side and is marked at 20-mil intervals.

n. The *compass circle* may be revolved in the case by the *declining screw*. The compass circle is divided into 320 equal parts, each representing 20 mils.

o. The *compass-circle index*, a needle point mounted in the case, directly opposite the center of the cover hinge and immediately above the compass circle, for determining the exact position of the compass circle in the case.

p. The *declining screw*, mounted in the side of the case, for setting off the declination constant, or for setting the compass-circle index to zero.

3. DECLINATING THE COMPASS.—Select a point from which a point of known *Y*-azimuth can be seen. Set the zero of the compass circle exactly under the compass-circle index. Using one of the methods described in paragraph 5 (preferably 5c), measure the azimuth to the distant point. For accurate results, repeat this operation three times. Subtract the average compass reading to the point from the known *Y*-azimuth to that point (adding 6400 mils to the known *Y*-azimuth, if necessary). The difference so obtained is the declination constant of the instrument. If more than one point of known *Y*-azimuth can be seen, similar readings are made for each, and the mean of the differences taken as the declination constant. Record the value on the instrument (with a china pencil on the mirror or with a pen on the edge of the case near the hinge). Check the constant

at frequent intervals; repeat the declination for any new locality. This constant may be used in future work in one of two ways, as indicated in the following paragraph.

4. USE OF THE DECLINATION CONSTANT.—*a.* The instrument may be used with the compass circle set as for declinating the instrument (zero under index). If used in this manner, a reading from the compass circle will be magnetic azimuth and the declination constant must be added to the reading to convert it to *Y*-azimuth.

*b.* A second method is to set the numerical value of the declination constant on the compass circle under the compass-circle index with the declinating screw. *Y*-azimuths then can be read from the instrument directly. In this case also, it is advisable to record the declination constant so that magnetic azimuths, if needed, can be computed and to permit resetting the compass circle if it is moved.

5. MEASURING AN AZIMUTH.—In this paragraph all readings taken from the instrument are referred to simply as "azimuths." This will be magnetic or *Y*-azimuth, depending upon which method of the preceding paragraph is being used for measuring.

*a.* For use at eye level, as in tall grass or brush:

- (1) Incline the cover inward to an angle of about 800 mils with the case.
- (2) Set the bar sight approximately perpendicular to the case.
- (3) Stand in the position shown in Figure 2, with the bar sight *toward* the body.



Figure 2. For use at eye level, in poor light.

(4) Turn the cover peep sight up until the point or opening comes into view through the bar peep sight.

(5) Aline the compass by sighting at the object across the points of, or through the openings in, the bar- and cover-peep sights.

(6) Center the spherical level bubble and read the compass circle at the *black* end of the needle by reflection in the mirror. This method can be used when light is poor. It has the disadvantages of a short-sight base line, detracting from accuracy; leveling and orienting must be

carried on simultaneously; the level of the eye must be moved from the sighting to the reading position—difficult to accomplish without disturbing the instrument position; and the reading of azimuths through a wide range of vertical angles is difficult.

*b.* (Fig. 3). For same use as in *a.*



Figure 3. For use at eye level, long sight base.

- (1) Incline the cover inward as in *a.*
- (2) Set the bar sight to a position in prolongation with the case.
- (3) Set the bar peep sight perpendicular to the bar sight.

(4) With the spherical level bubble centered, as indicated by the reflection in the mirror, and the bar sight pointed toward the eye, sight on the object through the bar peep sight and the *cover window*.

(5) Read in the mirror the compass circle at the *black* end of the needle. This method has the disadvantage that sighting in poor light is difficult. It has the advantages of a long sight base; sighting and reading can be done with the eye in one position; azimuths of objects at various elevations can be read by minor shifts in position of the instrument, or by varying the position of the bar sight, or by both.

*c.* For accurate work when a stable stand is available (Fig. 4):



Figure 4. For use on stand.

- (1) Set the instrument on a stable stand.
  - (2) Open both cover and bar sight to the maximum, with both peep sights vertical, and the bar sight pointed toward the eye.
  - (3) Center the spherical level bubble (using shims as necessary).
  - (4) Sight on object *through* or *over* both peep sights, varying the position of one or both to accord with the height of the object sighted upon.
  - (5) Without disturbing the position of the instrument, read the compass circle at the *black* end of the needle. This method gives the maximum sighting base, allows the needle to come to rest, and permits very accurate work.
- d. When the object sighted is more than 260 mils below the operator (Fig. 5):



Figure 5. Object sighted is more than 260 mils below operator.

- (1) The compass is held in the hands to place the bar sight toward the body.
  - (2) The bar sight is inclined inward so that its reflection is seen in the mirror.
  - (3) The object is sighted upon through the cover window.
  - (4) The object and the reflection of the slot in the bar sight must be bisected by the hairline and the spherical level bubble centered when the reading is taken. The compass circle must be read at the *black* end of the needle.
- e. When the object sighted is between 800 mils above and 260 mils below operator, he may use the following alternate method.

- (1) Stands in the position shown in Figure 6, with the instrument *cover opened toward* the body, in such a position that the object can be seen in the mirror when the compass is level.
- (2) Sets the bar sight approximately perpendicular to the case.



Figure 6. Object sighted is between 800 mils above and 260 mils below operator.

- (3) Is certain that the compass is over the point, that the arms are pressed firmly against the sides, and that the feet are well placed.
- (4) Levels the instrument with the spherical level.
- (5) Turns the body at the hips until the object can be seen in the mirror through the slot in the bar sight. The reflections of the object and of the slot in the bar sight both must be bisected by the hairline.
- (6) Reads the compass circle at the *white* end of the needle. This reading is the desired azimuth. At the time the reading is taken, the object and slot must remain bisected by the hairline and the spherical level bubble must be centered. With practice, it will be possible to read the center of the needle swing rather than wait for the needle to stop.

This method has the following disadvantages: It is the only one in which the white end of the needle is read, and thus may introduce confusion and identification of object by means of its mirror image is difficult in poor light or on a distant object. Azimuths can be measured by the other methods given.

6. MEASURING A VERTICAL ANGLE (ANGLE OF SITE), (FIG. 7).—The procedure is as follows:

- a. *Supported in the hand for rapid, approximate work:*
- (1) Incline the cover inward to an angle of about 800 mils with the case.
  - (2) Set the bar sight in prolongation of the case with the bar peep sight set at a right angle with the bar sight proper.
  - (3) Grasp the case with the thumb and forefinger of the right hand, cover toward the left with the bar sight pointed toward the eye. The middle finger of the right



Figure 7. For measuring site.

hand must touch the vertical-angle lever and be in a position to move it. The instrument is steadied by the left hand on the cover.

(4) The line of sighting is through the opening in the bar peep sight, and through the cover window. The object sighted must be bisected by the hairline and the bar peep sight. Care must be taken to hold the case in a vertical plane.

(5) In this position, the vertical-angle lever is moved with the middle finger until the vial-level bubble is centered.

(6) The instrument is then taken down and the reading of the vertical-angle index on the vertical-angle scale is taken. This is the desired vertical angle. It is minus when the index falls between zero and the cover hinge. It is well for new operators to take the average of several readings.

*b. Instrument resting on stable support;* the accuracy can be increased:

(1) By using the method of *a*, preceding, and resting the hand or instrument on a stable support.

- (2) By using the method described below.
  - (a) Set the sights as in Figure 6.
  - (b) Rest the instrument on a stable support, in a vertical plane, and sight through or over both peep sights.
  - (c) Have an assistant level the vial level.
  - (d) Read the angle as in *a*, preceding.

This latter method will provide a high degree of accuracy, but is slow.

*c. For determining the possibility of clearing a mask.* The required maximum site can be set off on the vertical angle scale; by sighting and leveling the bubble, the operator can then determine whether the required site clears the mask.

7. USE AS A CLINOMETER AND FOR RUNNING LEVELS.—Set the sights as in Figure 6. With the *bar* sight pointing toward the body, set the instrument in a *vertical* plane with the open face to the left. The machined surfaces on the lower edges of the case and the cover now form a plane approximately parallel to the vial bubble when the vertical-angle-arm index is set at zero.

*a. Use as a clinometer.*—Set the machined surfaces on any incline (gun tube, gun axle, or taut measuring tape), center the vial-level bubble and read the angle opposite the vertical-angle-arm index. With the vertical-angle-arm index set at 1600 mils, the instrument may be used for plumbing purposes.

*b. Use as a level, or for running levels.*—Set the vertical-arm-index at zero. The instrument now may be used for establishing levels, as when placed on a taut measuring tape, or for running levels by sighting through, or over, the peep sights.

8. CARE.—The compass, M2, is easily damaged by shocks and mistreatment. It should be kept in the case when not in use and given the same care as any other delicate instrument. If it is allowed to get wet, it should be wiped dry as soon as possible, particularly at points where water could get into the case.

## LANGUAGE AND INTERNATIONAL UNDERSTANDING

If America is to cooperate intelligently with the sixty-odd nations that comprise the neighborhood of the world, far more attention must be paid to the question of language. Particularly as our thoughts and interests turn toward the East we must be able to interpret ideas, traditions and customs through the medium of tongues other than English. America has never developed a school for the study of Oriental languages and cultures, although such schools have been maintained in Europe over many years. Chief among them have been the School of Oriental and African Studies of the University of London, the Ecole Nationale des Langues Orientales Vivantes in Paris and the Enukidze Institute of Oriental Languages in Leningrad. Similar schools have existed in Prague, Warsaw, Rome, Leyden and other cities. These institutions combined the practical teaching of Oriental languages to diplomats, businessmen and scholars with the development of the highest type specialized study of the cultures themselves.

A similar development in this country has long been hoped for, and for ten years the American Council of Learned Societies has been stimulating courses in Chinese, Japanese and Russian languages and culture in a number of institutions. The program began with a sequence of summer institutes at Harvard, Columbia, California and Cornell. Today twelve institutions have their special courses involving the use of one or more of these three languages.

The outbreak of the war, however, has greatly increased the significance of this development. Officials of the State Department, the Federal Bureau of Investigation, and the Federal Communications Commission, as well as Army and Navy personnel, face the necessity of becoming familiar with Oriental languages, and the demand for educational facilities has grown almost over night.

—Rockefeller Foundation Review

# ROAD TO DUNKIRK

EDITOR'S NOTE: *In the first chapter, Marquis de la Falaise described how, when the German invasion broke over the Low Countries, he joined a squadron of British mechanized troops to which he had been assigned as liaison officer from the French. The unit saw some hot action against the advance units of the German armored divisions in Flanders. The author acquainted us with Major Elliot S., commanding the squadron, Major John Erne, second-in-command, and the troop commanders, Peter Arkwright, Phil S., Andrew Roddick, and Tim B. The instalment ended with the action just west of Tirlemont on May 13. This instalment opens at Lovenjoel, southeast of Louvain.*

TUESDAY, MAY 14TH, 1:00 HRS.

Elliot arrives, so do Peter and Phil. The nine armored cars and their crews line up under the thick trees. The colonel drives up after a while and we join him in an empty barn. He issues his orders by candle-light, and shows us the positions on his map. News from the south is not good. The enemy is pushing forward and the French D.L.M., having taken severe punishment, is slowly falling back to the main position on the Dyle and Meuse rivers. The high command wants us to retard the enemy today as much as we can, before we retire behind the infantry, which is busy fortifying Louvain.

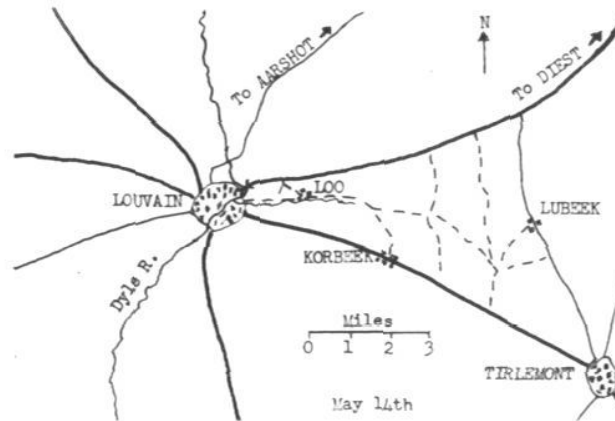
"After that, you can have a rest," adds the colonel.

After the colonel's departure, Elliot tells us that we are to remain here until Andrew Roddick arrives, then we are to move to our new position where we will meet the 13/18th Hussars. Their light tanks are to help us in our task: holding the enemy as long as we can. Elliot advises each of us to try to rest. Phil and Peter get into their armored cars and John and I seek shelter in an empty house. The front door has been battered in, and the rooms are in a dreadful state of disorder, apparently looters have visited it. The steady drone of enemy bombers fills the air;

By Henri de la Falaise

Leaves from my diary in Flanders

## Chapter II



bombs crash and explode on the road only a few hundred yards short of us. John suggests the cellar, so we proceed there. It would not give us much protection if the house was hit, but it is better than nothing.

We walk down the slimy steps in total darkness. Sitting on the damp floor, with our backs to the stone wall, we soon fall into a deep slumber. After a while I wake up, feeling very chilly, and go outside on the road. All is quiet. Thousands of stars are shining brightly in the cold night air. Elliot is sleeping in the staff car.

Soon I hear a rumbling in the distance, coming from the east. After a while the guns of the Belgian 18th Light Artillery pass by. The commanding officer stops his car when he recognizes me, and tells me that he has only lost one gun. He asks me to thank Elliot for the help which Roddick's troop has given him in his difficult task. Five minutes after he has disappeared in the direction of Louvain, Roddick's cars drive up. I wake Elliot, and young Roddick makes his report. The gunner of his forward car has been killed. Elliot orders John Erne's gunner to take his place, and I am to take the place of John's gunner in the rear link car.

3:30 hrs. We are off again for Loo, on the ridge which rises between the Louvain-Diest and the Louvain-Tirlemont roads. I am in John's armored car, standing between the Bren and the Boys guns. We reach Loo at 4:00 hrs. Phil's and Peter's troops stay on the advanced position, near Lubeek. The 15/18th are also established on the ridge. Paul Rosiere, who is the "Liaison" of that squadron, comes and chats with me. Machin finds an empty estaminet and makes tea and eggs. I try to force Roddick to eat a little, but the poor boy is so exhausted that his head falls on the table and he goes to sleep with his face in the eggs. I lie down on the narrow bench and sleep too. Machin, lying on the brick floor under my bench, does the same.

I wake up at 5:30, feeling much better. Roddick is still sleeping in the same position, his face smeared with

egg-yolk. I wash my face under the pump and shave. Squadron after squadron of German light bombers pass over us and drop their explosive on Louvain, which is covered with smoke. We establish two Bren guns on wooden posts and spray them as they go by. Our cars are well camouflaged—covered with straw to make them look like hay-stacks. I find some thread and a needle in the estaminet and consolidate a few of my loose buttons.

Elliot asks me to go with him immediately on a reconnaissance toward Lubeek, as he is not satisfied with the position of Phil's and Peter's troops. Tim B., who has relieved Roddick and is commanding his troop, is also believed to be in the wrong place. Fred, our driver, is much more concerned with the enemy aircraft than with his driving, so Elliot decides to drive himself and we put Fred in the rear of the car.

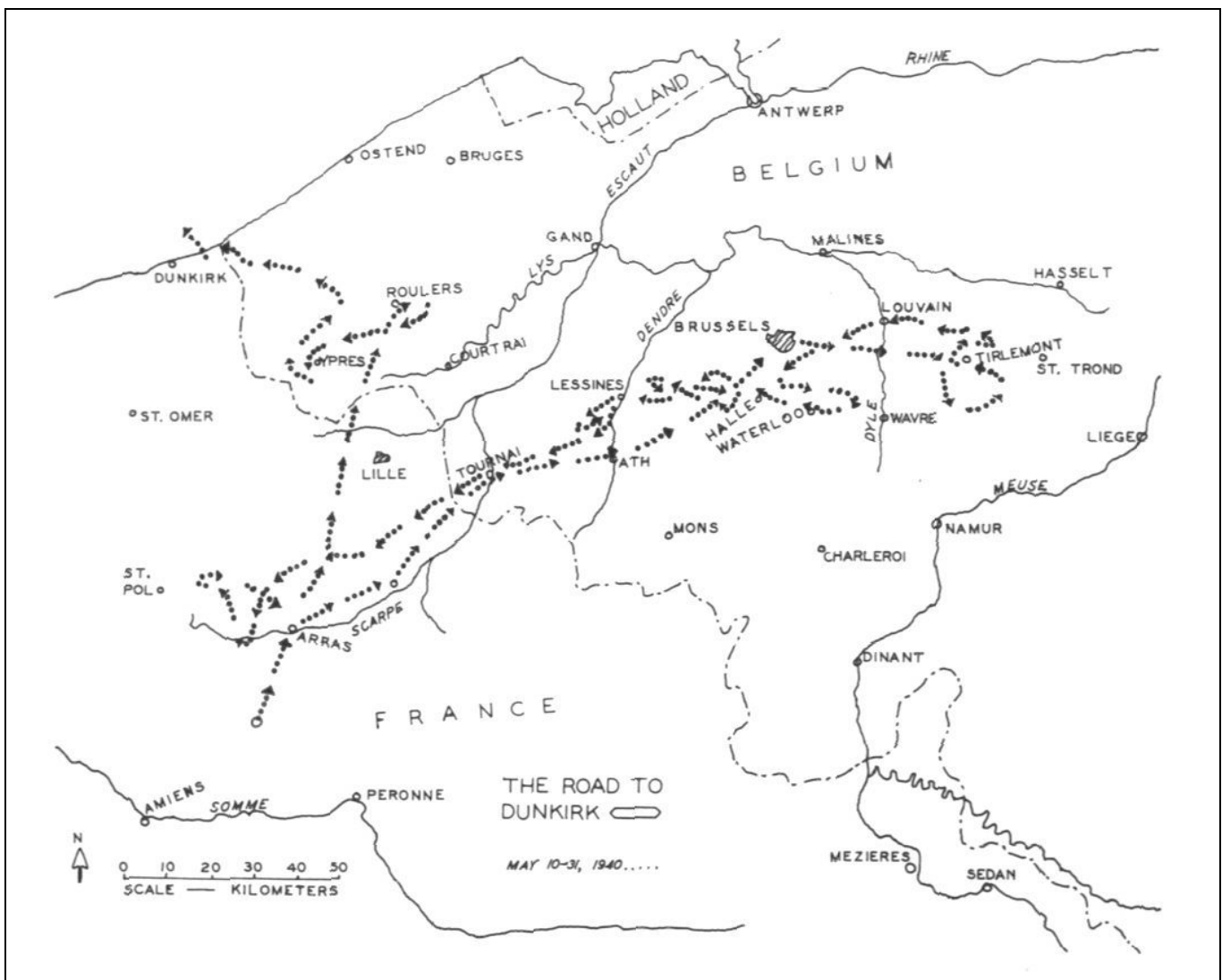
The winding dirt track on which we are driving and which follows the Loo to Lubeek ridge is very dry. Clouds of dust kicked up by our car make us very conspicuous to the planes flying above. Every few hundred yards we pass

light tanks of the 13/18th, hidden behind hedges and stacks of wheat. Elliot drives on, unmindful of the threatening Heinkels, some of which are so low that we can see the short flames of their machine guns as they dive on us.

I am so nervous that I have my hand on the door handle, ready to jump out. As for poor Fred, he is absolutely green in the face. But Elliot just grins and drives on, with that mad look in his eyes that I know so well and don't like much.

We reach Lubeek and see no sign of the armored cars. Turning left, we drive to the Diest road. Finding no sign of life there we return to Lubeek. Following a cart track we climb a steep hill crowned by a clump of pine trees. There we can clearly see fresh tracks of several armored cars in the soft dust, and in the distance enemy tanks or armored cars advancing toward Lubeek from Attenrode.

We hastily get back in our car, and as we cross the main square in Lubeek we nearly bump into Tim's armored car. He gives us Phil's and Peter's positions and also that of his own troop. They have all moved to





*British "heavies" during the retreat*

good, high positions, from which they can see the enemy's advance. Tim believes that they will be engaged within a half hour. We return to Loo, and reach it by 8:30.

10:00 hrs. Tim reports on the wireless that he is being attacked and is holding out all right; all his cars are firing. The German column has stopped and appears to be trying to turn around to reach shelter or to await reinforcements. Tim has seen no tanks yet. One of his men is wounded.

Thirty minutes later we get bad news from our right. The 15/19th report that they are being driven in. They have sustained very severe losses. Their colonel orders withdrawal. Elliot is indignant. He calls up our colonel and afterward goes to the HQ of the 13/18th, which he finds in the midst of preparations for a hasty retreat like their colleagues of the 15/19th Hussars. He cannot persuade them to stay and stomps out of their HQ, telling them that the 12th Lancers will show these damned Hussars that they are not afraid of the German army. One by one the light tanks pass us on their way to Louvain and safety. Lieut. Mera, of the French mission, jumps out of a carrier to shake hands with me. Paul de Rosiere does the same a few minutes later.

By mid-day Squadron A, 12th Lancers, is alone on the Louvain ridge. Phil is retreating toward us. Peter, who has been surrounded, is also coming back and Tim has moved to a position from where he can see a great number of German tanks entering Lovenjoel (where we were only a few hours ago). Our colonel reports that Squadron B, which was on our left in a position similar to ours on the ridge between the Louvain-Diest and the Louvain-Aarshot roads, is retreating toward Louvain. He tells Elliot to use

his own judgment, but to keep in mind that we might be cut off from the only bridge to Louvain if we remain here too long. Elliot decides to remain, but orders the advanced troops to start falling back toward Loo. John Erne says nothing, just looks at me. Machin suggests that we might have sauerkraut for dinner.

Tim reports later that the Germans have passed through Korbeek and are now less than three miles from Louvain. Phil's wireless has been put out of action by a bomb, so he sends one of his D.R.'s to report it. Elliot orders them all to return to us at once.

We are all gathered in Loo. Elliot sends Peter and his troop toward the Louvain bridge on the Diest road, with orders to report if the road is clear. Peter soon reports from the Diest road that he has seen some motorcyclists and has fired on them. Elliot directs him to proceed to the bridge at once and to warn the infantry there not to blow it until we have passed.

14:00 hrs. Phil and his troop leave, then Tim, and finally Elliot and the other armored car, followed by the staff car. John's armored car closes the march. I am still his gunner and I swing the turret around to face the rear. We reach the Diest road and lying at the crossroads find the bodies of the enemy motorcyclists killed by Peter. German bombers are diving and zooming up again over the bridge we have to cross, in an attempt to destroy it and cut us off.

The whole squadron crosses the bridge, which is defended by the Welsh Guards. It is good to see our infantry at last. Elliot orders John and me to stay near the bridge until it is blown, and then to proceed to Oppen, near Brussels. All houses beside the Dyle are covered with sandbags, and are bristling with heavy and light machine guns. Two well-camouflaged and heavily armored anti-tank guns are on the right and left sides of the street.

A young subaltern of the Welsh Guards brings us bottles of beer and lemonade—very welcome; our throats are parched and we have had nothing to eat since five this morning. Now and again, when a bomb drops too near, we have to dive inside our car. We are told that more than sixty men have been killed by the bombers since this morning. The same questions are on everybody's



lips—where are our planes? what are they doing? why are they not sent to protect us?

Lord Freddy Cambridge, a nephew of Queen Mary and a major in this Welsh Guards battalion, sends John and me a bottle of old brandy, with a funny little note explaining why he can't help us drink it now. We scribble a few words of thanks and best wishes and are about to sign it when we heard the loud rattle of the two heavy machine guns going into action near us. At the same moment the bridge is blown up, right under the nose of a platoon of German motorcyclists who are thus sent flying skyward. The explosion is so loud and shattering that it knocks me down to the bottom of the car, and John's pipe falls from his mouth. Pulling Freddie's messenger up on the car, we speed off to a safer spot around the next corner, with bricks, stones, and pieces of iron falling all around us.

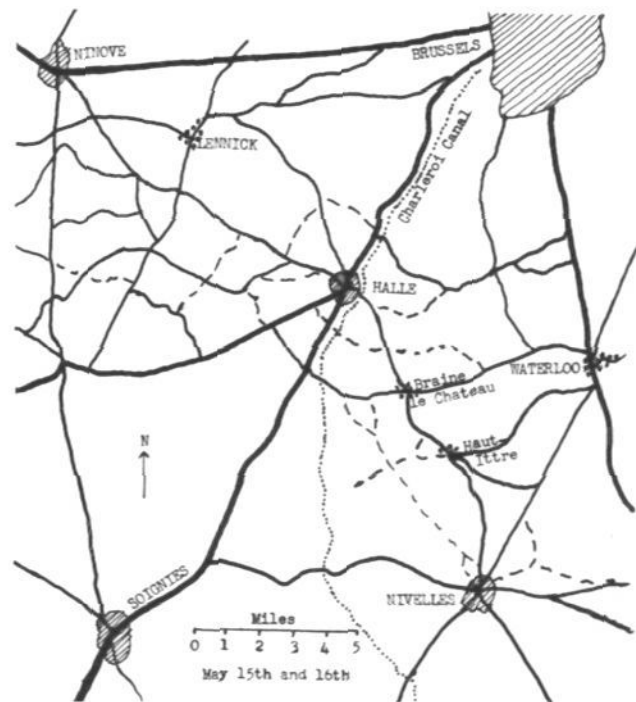
By 16:00 hrs our job is finished. Thankfully we leave Louvain. It's up to the infantry now; the 12th Lancers is heading for food, sleep, and maybe a bath!

All the squadron cars are hidden at Oppen, under the thick foliage in the park of Comte de Grune's chateau. It is very much like Sunningdale near Windsor park; wealthy "Bruxellois" go there for weekends. I am so tired that I just manage to climb the stairs to a tiny room on the second floor where Stevens has prepared a bed for me on a narrow couch. The last time I saw him was a week ago, when I left the squadron to go to Paris on leave! An old and experienced soldier-servant, he helps me to undress and to pull off the heavy boots which have been on my swollen feet and tired legs ever since last Saturday morning. Noiselessly he unpacks my light kit, while I fall into a deep and much needed sleep.

I wake up at 20:00 hours, and join the others in the dining room. We are all in pyjamas and still so tired that we just sit and munch our food without saying a word. But it is cozy to sit at a table and eat some warm soup, roast meat, and vegetables. Best of all, none of us are missing. After coffee, we return to our bedrooms for more sleep.

#### *Wednesday, May 15th*

The loud roar of what sounds like at least fifty airplanes wakes me at 4:30 hours. A sharp staccato of machine-gunning follows immediately, right under my pillow. As I rush to find out what is going on, I can see tracer bullets speeding skyward. Wave after wave, in perfect formation, great black bombers are flying over the park, apparently headed for Brussels. Dawn is breaking. They are so low that their black crosses, outlined in white, are plainly visible. Other Bren guns join in the fun, their bullets drawing sharp lines of fire streaking the grey morning sky and flying straight at the passing Junkers. One of the planes breaks off from the others. It makes a left turn followed by a steady stream of bullets from all our guns. Smoke is pouring out of it. One, two, three of its crew bail out, their parachutes widening into big white mushrooms, while the abandoned plane crashes on top of



a hill about a mile away and bursts into flames. Looking down I see Elliot, in his pyjamas, order a sergeant and two men to hop in the fighting lorry and speed after the parachutists.

Three loud cheers rise from the park under my window. The boys are celebrating their victory. Squadron A has shot down its first enemy aircraft.

Stevens wakes me at 7 to tell me that the men did not bring back the German flyers after all. The Jerries were dead before they landed, riddled with bullets from a machine gun. The crew probably mistook them for parachutists of another kind. Orders are to move at eight. Stevens packs my kit and I run downstairs, where I find Peter and Phil eating a hurried breakfast. Elliot asks me to leave at once with John Erne in the staff car and go to Lennick, to prepare the billeting. On the way, John tells me that Squadron A has had the honor to be chosen by General Lord Gort as his special guard, probably on account of our good showing on the Gette and at Loo. This means that for the next twenty-four hours or so we are to provide for the safety of the Commander-in-Chief's advanced GHQ.

Lennick is a large village, lying between the Ninove-Brussels and the Halle-Brussels roads, about ten miles southwest of the Belgian capital. No one there is aware that the British C-in-C has established his headquarters in the small chateau which lies only a few hundred yards from the main square.

It takes me at least three hours to find sheds and barns in which to hide all the squadron's armored cars and the trucks and lorries of the transport troop. Then I

have to find suitable billets for the men and the officers. Elliot and the whole squadron draw up in the village square just as I have about finished my task and am exhausted by the heat and the constant running around. I have to start all over again, showing the troops the different positions I have found for them. As usual, they are all dissatisfied, and to finish it all, Elliot tells me that I have to find a house where all the officers can lodge as he has orders that we must all be together and on constant alert. Little does he know that I have been trying all morning to find just such a house, and that I have been assured that it is impossible. Nevertheless I start off again, after a few words of kindly encouragement from Phil and Peter.

The civilians are not particularly helpful. This rich little town near Brussels has not yet realized that there is a war and that the enemy is hammering at the line of the Dyle, which is only about 15 miles away. The news they have had so far on the wireless is rather optimistic and mentions victories! They seem bewildered by our appearance, our faces grey with dust and drawn with fatigue, our uniforms dirty, our armored cars caked with clay and showing the marks of the enemy bullets. It does not seem possible to them that they are actually seeing men who have fought the Germans, who have been shot at, who have watched death reap its bloody harvest. They look upon us with curiosity mingled with suspicion. All the shops and estaminets are closed by order of the local authorities, but I succeed in getting into a grocery through the back door. We buy some food and give it to the starving officers. The grocer's wife, a buxom and pink-cheeked female, takes pity on me and tells me that there is a small house on the main square which has been abandoned by its proprietor (an old lady) this morning. I rush there immediately, only to find it locked. A neighbor tells me that the keys have been taken by the old lady's nephew, who lives in a village seven miles away. I leave in the staff car and return an hour later, with the keys. We move in. The house is very small and there is only one bedroom on the first floor, with a double bed and a mattress. This room I allocate to all officers except Basil H. and myself, who will sleep on the floor of what was the dining room. There is a small kitchen and another room, also devoid of furniture, which will be our dining room. A lovely orchard in the back of the house and a very charming flower garden provide privacy and an agreeable resting place.

16:00 hrs. Elliot returns from a visit to the colonel. He pats me on the back and seems delighted with the arrangements. One troop is ordered to take up position in a sheltered locality on the main square, and all the other troops are to take turns through the coming night. Peter takes the first watch. The others strip and bathe under the garden pump. The water is cold and refreshing. A large wooden bucket makes a very good tub. We all splash

about without any clothes on, while German planes fly to and fro above us.

Machin and I go out to do some shopping for dinner. All we find are some cauliflowers, canned peas, and potatoes. But my grocer lady, kind-hearted soul, lets we have a few slices of a delicious ham, which she is not supposed to sell and which is her private property. She also invites me in her living room to listen to the news on the wireless. But I am not allowed to listen as she talks all the time, telling me that her husband has been mobilized and that she hopes the war will soon be over, as she is already beginning to feel lonesome.

Our colonel drops in for a drink before dinner. He tells us that the high command is very well satisfied with the 12th Lancers and gives us news of what the other squadrons have done since the 11th. Squadron B has destroyed some German tanks and the commander has made a wonderful record, extricating himself and his troop from what appeared to be a hopeless position. They have had less casualties than we. He adds that German aircraft have been pounding the Dyle position all through the day and that the Guards have suffered severe losses at Louvain. Our friend Lord Freddy Cambridge has been killed! We eat an early dinner and lie down on the wooden floor in the next room.

I have been asleep for about two hours, when I am awakened by a loud crash and have the feeling that the house is about to fall down on top of me. Peter, who is lying not far from me, sits up with a start, and so do the others. The door swings open and the windows are shattered by a new and more violent explosion. Several machine guns are firing. We run out into the square. There is a bright moon, and no clouds. Bombers are diving and zooming up again over the small town. The Brens of the three armored cars on watch are spitting fire at them.

One bomb falls on the railroad crossing, three hundred yards away. Others are scattered right and left. We are helpless and can only watch and hope for the best. However, no bombs are dropped in the direction of the chateau. A few minutes later all is quiet again, and we go back to our hard beds to try to sleep. Peter and Phil take a swig from their flasks. I share a bottle of beer with Tim. After a while I again lay my head on my coat, rolled up like a pillow, and it is not long before I fall asleep.

*Thursday, May 16th*

The German dawn patrol is already over us in huge waves. I count more than sixty Heinkels and Junkers. Orders arrive at six. We are to be ready to move on one hour's notice. Stevens packs my kit and fills my haversack with cans of food from my reserve. I walk out into the streets with Machin. We are lucky enough to find a baker who has just baked some savory loaves of bread. We buy six which I distribute to the officers. I also go to a wine store and buy some bottles of claret.

Walking to our lodging, I meet John Erne, who is talking to H.R.H. the Duke of Gloucester. Prince Henry is in the best of moods. He had his first real taste of war last night, his house having been bombed. He lost nearly all his kit, and had to move to another billet. He is a real soldier, a cavalryman. He looks it, too. He is very much liked and esteemed by all the British cavalry.

8:00 hrs. A dispatch rider arrives from GHQ, asking that the French Liaison Officer report there at once. I dust my boots, put on my helmet and chin strap, and go to the small chateau where I am received immediately and ushered into a long room filled with tables on which huge maps are spread out. General Lord Gort is standing in a corner, speaking to the Duke of Gloucester and a colonel of his staff. I click my heels, salute, and wait at attention. After a few minutes, a young major asks my name, and if I am the Liaison Officer of Squadron A, 12th Lancers. He then goes to the Commander-in-Chief and introduces me. After giving me a pleasant nod, Lord Gort picks up several maps and walks out to his car with the colonel of his staff. Prince Henry leaves also, but in another car. After they have gone, I am told what is expected of me. I attend to it at once, and when I leave GHQ an hour later every one seems happy with the very simple job I have accomplished. It all boiled down to this: the owner of the chateau disliked having a staff of British officers in his house, so he proceeded, or rather Madame did, to use a blockade of a special kind on the British guests. She withdrew all the pots and pans from the kitchen and locked up the door leading to the coal cellar. The natural consequence was that the general's highly skilled French chef was totally unable to cook any sort of meal! Hence the hurried call for my services, Lord Gort having had no breakfast!

It would have been much easier to settle the whole matter had it been possible to tell the unwilling host and hostess that their guest was none other than Viscount Gort, Commander-in-Chief of the B.E.F.—but that was entirely out of the question. Anyway, when I left the chateau the coal cellar was wide open; all the pots and pans were back in the kitchen, each on its own hook; the French chef was beaming; Madame was smiling happily once again; and, most important of all, GHQ was to have some lunch.

11:00 hrs. The colonel has just left the squadron. He has brought bad news. The French Army on our right has fallen back. The Germans have succeeded in crossing the Meuse River. Namur has fallen to the enemy. A battle is in progress at Gembloux and the German armored division has broken through the French defense there also. If this advance is not checked, the enemy should reach the Brussels-Charleroi road this evening. We are to wait for further orders but may be asked to march at any minute. Our probable line of battle will be southeast of Waterloo.

Orders arrive to march at once to Rode St. Genese, at a point situated east of Halle and about three kilometers west of the Brussels-Charleroi road, north of Waterloo. Elliot tells me that we are supposed to help a French division and that we shall probably fight all night.

We cross the Senette river and the Brussels-Charleroi Canal. The heavy rumble of artillery on the front ahead of us has died down. The sky is dotted with German aircraft. Light bombers, heavy bombers, fighter Messerschmidts, circle over the entire countryside, like vultures seeking their prey. Undisturbed they fly low, their engines idling. Where is the R.A.F.? is on everyone's lips.

We reach Rode St. Genese. Heavy tanks are thundering down the narrow street, coming in our direction. Their names are painted white on the black background: "Gamelin," "Garbo," "Gorgonzola" are some of them. The tank corps men are standing in the turrets and wave at us as they pass by. I am standing up in John's armored car and keep watching the sky above us.

Five Stukas, which have been flying over on our right, suddenly make a steep left glide. Swooping down on us like hawks, they drop a string of bombs which scream through the air. I pull John into the cockpit as the first high explosive bursts up the street. The car shakes, explosions wreck the houses in a straight line all the way down the left side of the street. Without stopping, the tanks roll on amid the crashing timber and falling bricks. As I look up, I can see the last of their long line disappear around the bend of the road in the direction of Halle. No harm to any of us. We turn off to the right and take a dirt road leading away from the burning village.

18:00 hrs. The squadron is well hidden under the trees of a small oval-shaped wood. It stands in the middle of a large field, two hundred yards away from a small road and opposite a large private estate (which appears to be a convent) enclosed in a high stone wall. Our armored cars are sheltered all along the edge under the thick branches of tall and leafy oak trees. We are quite invisible from the air, but the deep tracks that our heavy cars have dug through the field can be seen from above. Two Bren guns are set up as anti-aircraft protection at both ends of the wood. Elliot orders the crews to rest and make tea.

The colonel arrives. He leads us to the sunny side of the wood, away from the men. We sit under the trees with our maps stretched out on the grass while he gives us the latest information. The I and II Corps of the B.E.F. are retiring behind Brussels. The French, on our right, are retreating. The Germans have reached Nivelles and are pushing forward in the northwesterly direction in order to encircle Brussels. Just now there seem to be no organized infantry units between the advancing enemy and us, except some elements of a French division which have been heavily bombed and are very tired.

The squadron is to proceed, at 20:00 hrs., to take up a line on a small road which runs between Mont St.

Jean, south of Waterloo, and Clabeck, four miles south of Halle. A narrow river runs alongside it, and a railway track borders it to the south. Bridges at Braine le Chateau, Wauthier, and Sart le Moulin, villages lying on this road, are to be blown up if possible, and held by our armored cars.

Calmly, as simply as if he were explaining some peacetime maneuver, the colonel shows each of us in turn, on his map, the positions. Three Messerschmidt fighters bring our peaceful palaver to a sudden end by diving on our little wood. Picking up the maps, we rush into the underbrush and scramble to the other side. Machine-gun bullets are whizzing through the branches, nicking splinters of bark from the trees. Our men have grabbed Bren guns, and are returning the fire shot for shot. I am lying on my stomach behind a thick tree, and wish I were a mole.

Three large bombers are over us now, and the howling of bombs, followed by deafening explosions, sends the whole squadron sprawling flat on the ground. A few inches away from my face a fat tea kettle is boiling unconcernedly on a petrol cooker, and as peacefully as if it were sitting on a picnic fire somewhere in England.

The German planes have gone toward Halle. Only five bombs were dropped in our immediate neighborhood. They fell on the other side of our wood, a hundred yards away from where we are lying and around the spot where we were sitting with the colonel a few minutes ago.

Tea. The men are singing, accompanied by a mouth organ. Before leaving, the colonel watches them for a little while. He is silent. But the intense and sad way in which his loving gaze embraces them all, speaks for itself and says: "Tomorrow how many of you will be lying cold and mangled?" As he walks slowly back to his car, talking to Elliot, the men stop their singing and, standing at attention, salute.

20:00 hrs. My orders are to go forward with Phil's troop with Sergt. Ditton's car. I am to stay at the Braine le Chateau bridge, as this is the point where the French troops might be. Peter's troop will be on our left; Tim's on our right; Roddick's on the heights of Sart le Moulin, back of Peter. HQ troop with Elliot and John will be at the crossroads to Lembeek, on the heights back of where Phil and Tim are.

We move immediately. I am in the first car, leading the entire squadron. At Sart le Moulin, I turn right. The river on my left is steeply embanked and rows of field guns are lined on the other side. Some are firing. We soon reach Braine, I jump out of the armored car and walk to the bridge, which is about two hundred yards up the road to the left. This road leads to Haut-Ittre. It is paved and so is the bridge. The engineers who are accompanying me, after looking it over, say that it will take them at least two hours' work to prepare the bridge if they are to blow it up properly. They run to the small, light lorry to fetch tools and explosives.

Hundreds of French soldiers go over the bridge and pass me, going toward the rear. They belong to the North Algerian Division, Colonial Infantry. Tired and rather demoralized, without officers, they ask me the way to Lembeek. Some are wounded. Some are in a state of panic. I can't get much information out of them. They say they have been separated from their regiments, that their officers are dead or prisoners, that the Germans are following close behind them, that a great battle has been lost, et cetera. They are mostly Algerians or Tunisians and speak very bad French.

It is getting darker. The engineers are digging up the bridge. Elliot arrives in the staff car. He has seen the French soldiers retreating on the road and is worried. I give him my information. He tells me to stay where I am, but to have the bridge blown up as soon as things get too hot. He then leaves toward Sart le Comte to visit Peter's troop.

22:00 hrs. Sergt. Smith of the R.E.'s tells me that he will be ready to blow the bridge in about an hour. The Nivelles road is empty now. The last stragglers from the retreating French brigade passed over twenty minutes ago. Night has fallen. Phil sends an armored cart to protect us. It stops fifty yards away, turns around, and halts under the trees with its guns trained on the bridge. Its dark greyish mass, its clumsy and familiar silhouette are a comforting sight. I can always run to it if things become rough.

A message comes from Phil. Orders are to challenge all loitering civilians and arrest them if they resist or act in a suspicious manner.

Soon a low, dark car is speeding straight toward us—no headlights. The engineers jump under the bridge. I leap behind a tree. Sergt. Ditton fires two warning shots. With a loud screeching of brakes, the car skids to a stop just short of the bridge, and a French officer jumps out of it. I run toward him, and recognize Lt. Lechatellier of the French Mission. He seems surprised to see me standing on this lonely spot, and hastens to tell me that the Germans are in Haut-Ittre, two miles from here. Two French artillery officers are in the car with him. I tell them my surprise at having seen hundreds of stragglers from the Division Coloniale pass over the bridge, heading for Lembeek, without any officers to command them.

They all remain silent for a moment, without answering; then a French captain, his pent-up emotions giving away at last, tells me of the terrible rout. His eyes are brimmed with tears, as he explains how the field guns have had to be abandoned through lack of ammunition.

"I went myself, three times today, to fetch shells for the guns at the appointed place," he says. "The dumps were empty, Monsieur. Three times I went there with trucks and they were empty!"

Lechatellier adds, "We have been beaten. All was disorganized. It is horrible. The North African troops are demoralized by the German dive-bombers and there is never an Allied plane in the air to oppose them."

He asks me what I am going to do here. I answer, pointing to the massive hulk of steel hidden under the trees. "The 12th Lancers will try their best to slow the Boche down for a while." This seems to cheer them somewhat.

"Good luck, Messieurs!" are the last words I hear, as the French staff car speeds off on the road to Halle.

A D.R. drives up. Two suspicious-looking civilians have been attested by some of Phil's men and he wants me to look them over and question them. Climbing up on the back of the D.R.'s motorbike, I go there at once. One man is all right. He lives in the village, and had gone out to fetch his cows from the nearby field. I tell him to forget about his cows for the present, and to go back to his house and stay there. The other man (Flemish) doesn't speak French. He is rude and sullen. Sticking my pistol into his ribs, I manage to get him off by pushing him toward the road to Halle and telling him, in German, to get out of the village at once or he will be a dead man. Flemish is very much like German, and he seems to understand my pantomime. He walks away grudgingly at first, but after a few minutes, his pace quickens. I see him pass the last houses of the village and disappear in the right direction. I climb on the motorbike and return to my vigil by the bridge.

A reddish glow lights up the entire horizon to the east and southeast. From Waterloo to Charleroi the Belgian countryside is ablaze once again; the very same villages which have been soaked with French, British, and German blood, twice in a little over a century, are aflame for the third time. The same nations are once more tearing at each other's throats and shedding the blood of their children on exactly the same battlefield.

Every now and then a distant explosion flares up into the cloudy skies, throwing a bright and vivid flash which illuminates the trees on the road ahead of me. Suddenly I hear the sound of motorcycles coming from Haut-Ittre. I

run to the armored car and ask Sergt. Ditton to give me a rifle and some ammunition. By the time I am back on the bridge the noise has become much louder and is increasing every second. The engineers have stopped working and are listening. I tell them to get under cover, and placing myself behind the end of the stone parapet I wait with my rifle ready for action. Judging by the sound, the motorcycles are now only a few hundred yards away. Our armored car opens fire, pouring a stream of bullets over my head into the dark road ahead.

A moment later I see short flashes spurt from the right and left side of the road, and several German bullets whiz over me. One nicks a stone on the parapet behind which I am crouching, while others splatter against the steel side of the armored car. I believe that there are only two motorcycles with side-cars, as only two tommy-guns are firing at us. Taking careful aim at the flashes, I fire four rounds at them, and the engineer sergeant's pistol cracks several times from behind the other parapet. All this action makes quite a lot of noise; and the enemy patrol, believing that the bridge is heavily guarded, turns tail and returns toward Haut-Ittre, after shooting up a flare. All this has lasted only a few minutes, but there is no hesitating now; the bridge must be destroyed before Jerry comes back with reinforcements.

23:30 hrs. Elliot arrives in the staff car. I report the happening and he agrees that no time should be lost in blowing up the bridge. The dynamite charge is exploded. Unfortunately, we soon discover that only half of the structure has been destroyed, and there is enough room left for infantry or even for motorcyclists to get across. But it is too late to do anything about it. After a word with Phil, Elliot decides to take me with him, as he thinks I may be more useful now at his HQ, which is a good mile away on the top of the hill between here and Halle.

*(To be continued)*



*The sheltered invaders await reinforcements. Acme photo.*

# Motor Maintenance in Connection with Radio Maintenance

By Lieutenant Colonel N. W. Jones, FA

Motor maintenance personnel are concerned, to some extent, with servicing of radio equipment because these sets use the vehicular storage battery as a primary source of power for both transmitter and receiver. You probably ask yourself, "Well, how does this affect me as a motor officer? The maintenance of the radio set is a job for the radio technician." True enough, but the latter starts his maintenance services at the junction box; the motor mechanic is responsible for the maintenance of the storage battery and other electrical circuits of the vehicle, including the radio shielding and filters for the ignition and generator circuits.

It is generally standing operating procedure that when a motor mechanic has done any work on an automotive electrical system which necessitates the removal of any shielding, the vehicle will be checked by the radio maintenance section or platoon before it is released for service. What does the radio technician check? Two things, *noise in the receiver* and *milliamperes on the transmitter*, or to put it simply, noise and power.

In general, you can count on noise in the receiver wherever you have an electrical spark or rapid change of high voltage. These electrical impulses cause noises two ways: (1) by being picked up by the receiver through the antenna, (2) by travelling through the electrical system to the receiver.

To eliminate the noise caused by high-tension current and sparks which set up electrical fields and electrical waves, the ignition and generator circuits are shielded. This shielding is effective provided all connections are tight. It is the mechanic's duty to see that they are tight.

To eliminate the undesirable high-frequency impulses from the generator and ignition circuits from surging back to the battery, a filter is placed in the ignition circuit between the battery and the ignition coil and in the general circuit between the battery and regulator. These filters consist of an induction coil and condenser. The condenser will by-pass the high-frequency current to the ground; the induction coil acts as a choke on any high-frequency currents that get by the condenser. These filters, supplied by the Ordnance, are a unit replacement. In addition to the above, the high-tension line, distributor points, and brushes on the generator must be kept in good condition. No pitting or arcing. No variation in your charging rate. This of course is a matter of good engine tune-up. When a radio set is noisy everyone knows it and steps are taken to correct the matter. Of course, it should never happen and when it does it is a reflection on the *motor maintenance*. Don't try to shift the blame to the radio people.

Now we will deal with a matter not generally understood as far as radio maintenance is concerned. The condition of the vehicular storage battery is by far the greatest single

factor in the proper functioning of a radio set, and extreme measures must be taken to insure that the battery is maintained in a fully charged condition at all times. All connections must be tight; battery cables must be in good condition; plates must be kept covered with condensed water or clean rain water. It is all very well as far as the engine is concerned if the battery will turn it over, so it will start; but this is not the case with the radio transmitter.

To prove this point to you in a conclusive manner and duly impress you with its importance, the Communication Department of the Armored Force School ran the following test:

## BATTERY PERFORMANCE EXPERIMENT

January 7, 1942.

*Purpose:* A test to determine the relative performance of a fully charged battery, and a partially charged battery, when used as the primary source of power for an BC 191-C transmitter, in vehicular operation.

*Batteries used:* 225-ampere-hour, 12 volt, standard equipment for Scout Car, M3A1. The installed vehicular battery was in a charged condition, having a specific gravity of 1.250. And, for the purpose of this test, a second battery was carried in the car. It was in a partially run-down condition, having a specific gravity of 1.193 (corrected).

*Procedure:* A base station was set up in the school area, equipped with a sensitive signal strength meter in the receiver, for the purpose of taking signal strength measurements on signals transmitted from a vehicular radio installation of the medium-power BC 191-C, on the move. The scout car containing the two batteries to be tested was driven toward Brandenburg, Kentucky, from Ft. Knox. The batteries were connected to opposite ends of a double-pole-double-throw knife switch, and the knives were connected in turn to the power leads to the transmitter. Across the line a sensitive voltmeter was wired in such a manner that reading could be taken in the following ways:

- a. Good battery under load, car engine running and generator charging.
- b. Good battery under load, car engine not running and generator not charging.
- c. Poor battery under load, car engine not running and generator not charging.

Provision was made to take signal strength readings from transmission on each of the above described sources of power, together with voltmeter readings on the battery as the power was being drawn from it in every test, at two- to three-mile intervals. Throughout the test the transmitter of the vehicular installation was operated on C.W., and for the purpose of obtaining a good reading, the key was held down for ten seconds on each transmission.

The signal strength meter on the receiver was adjusted to give a full-scale maximum deflection reading on the transmission described in *a* above, at close range. This gave an index reading of 12½ when the vehicular station noise level of the static and background interference varied from 4 to 5 on the meter scale when no signal was impressed.

*Consolidated readings:*

Check Number	Volts	A Sig Strength	Volts	B Sig Strength	Volts	C Sig Strength	Distance (Miles)
1	11.75	12.25	11.60	12.25	8.25	8.25	3.3
2	11.50	10.25	11.25	10.25	7.90	5.00	5.6
3	12.12	9.50	11.75	9.50	8.25	5.00	8.2
4	12.10	8.25	11.75	8.25	8.20	4.50	11.4
5	12.10	9.00	11.75	8.75	8.25	4.75	13.0
6	12.10	8.00	11.80	7.75	8.25	4.00	15.2
7	12.75	7.75	11.90	7.70	8.25	unreadable	18.1
8	12.70	6.00	11.85	6.00	8.20	unreadable	20.2

At the conclusion of the test each battery showed a specific gravity as follows:

- Good battery ..... 1.250
- Poor battery ..... 1.193

The plate current drawn by the tubes of the transmitter, using the good battery, in tests *a* and *b*, ran about 220 milliamperes; while using the poor battery on test *c*, the tubes drew about 75 milliamperes total plate current.

**CONCLUSION:** When the battery used with a BC 191-C transmitter, part of SCR 193-C, is permitted to get as low as was experienced in this test, it will limit the set to *about one fourth of its normal range.*

If the noise level had been 8 instead of 4, no communication would have been possible. Further, the closer the frequency channels assigned, the higher the noise level will be.

The current used in operating a scout car and radio set is:

- To start the engine ..... 800 amps
- To crank the engine after starting ..... 300 amps
- Ignition primary ..... 5 amps
- Lights ..... 8-10 amps
- 193-C Transmitter ..... 60 amps
- 312 Receiver ..... 5 amps

It is a good thing some of above are only operated intermittently, or we would have a real problem on our hands. The current regulator limits the generator output to 50 amps to protect the generator, so we are running down

our battery at a 20 to 30 amp rate all the time we are transmitting. A test was run to see how long it would take to recharge the battery after starting at 70°; it took 20 minutes' constant running. Of course one must remember that about three-fourths of the charge was back in 5 minutes, which helps out some.

Let us now examine some of the practical ways to maintain our S/C and H.T. batteries in good condition. Every vehicle with a radio must have its battery tested at the start and finish of each day's operation. If the battery is down to 1.250 or lower in the morning, change it at once. If it is down at night, recharge it in the vehicle by the use of long leads from your charging set. Vehicles remaining in motor park or bivouac for over one week will have their battery tested each Friday. The engine will be operated for a short time.

The motor officer must supervise any cold weather starting. No driver will be allowed to continue cranking his motor. If it does not start at once it will be towed. However, if the engine does not start at once, it is due for a tune-up immediately after it returns from its present duty.

In order to keep the battery charged, it will be necessary to operate the engine for considerable periods of time, while the vehicle is stationary. This is bad for the engine, as it operates at a higher R.P.M. than idling speed without load, and worst of all there is no cooling draft under the oil pan. This probably could be corrected by an oil cooler, but until it is we must watch our oil temperature very carefully, and we have no way to watch it except a drop in oil pressure.

The driver, chief of section, and everyone else must be impressed with the fact that in washing the vehicle, no water will be allowed to contact any part of the radio set and further that the engine will not be washed with water, kerosene or other cleaning compounds, but will be cleaned by hand with waste. Extreme care will be taken to see that no oil or waste gets on any shielded wires, or they will short out practically at once.

When operating a radio set with engine running and vehicle stationary, it is well to raise the hood to help cool the engine and especially the coil.

Be sure all drivers keep your radio sets covered up while in park and on the march, unless an operator is present.

Do your part in communications, as well as marching. Commanders with communication troubles should first check their motor maintenance.



*Frozen radio wave.*

# INSTRUCTION IS TOUGH!

By Cadet Captain James L. Centner, FA, ROTC

No, "tough instruction" is not enough, if we begin by answering the title question of the article appearing in last month's JOURNAL by Lieut. Kilduff concerning the Reserve Officers' Training Corps, and the graduates thereof.

Lieut. Kilduff paints a pretty grim picture of the typical R.O.T.C. unit, pretty grim indeed. So much so, in fact, that we now attending the R.O.T.C. Advanced Course feel a bit chagrined at so one-sided a picture. The writer is a member of the Second Year Advanced Course, Field Artillery, Xaxier University, Cincinnati, Ohio. The following views are limited to observations made in the Fifth Corps Area, comprising many schools with Field Artillery units.

The first point to be considered is the matter of selection for the Advanced Course. It isn't just a question of handing in an application, properly signed, to the PMS&T, receiving in turn a letter of acceptance, and then appearing for drill "one hour a week." It goes a lot farther than that. In the first place, a competent staff of officers who comprise the Military Department look over each application thoroughly, examining not only grades, in terms of A's or B's, but also in terms of military bearing, leadership, general attitude, etc. It's no slipshod affair, consisting of guess-work, or of attempting to fill the quota allotted to a particular school. The PMS&T himself is selected because he is fitted for his job, because he knows how to judge men, with regard, especially, to military qualifications. His powers of observation are usually acute; in short, he's nobody's fool. He doesn't pass on men because they smile sweetly at him, or do him a slight favor once. On the contrary, he has a job to do and he does it. He knows his branch of the service backwards and forwards, together with a store of knowledge gathered over a period of years. He doesn't know everything; you could study artillery alone all your life and still not get the complete picture, as it is too extensive. But he has the ability to give his cadets the general picture, and an inkling as to the largeness of the field. So we think his judgment can be counted on in the matter of selection of Advanced Course students.

The Fifth Corps Area selects its military departments for the various R.O.T.C. units carefully. Many Reserve Officers have taken the place of Regular Army instructors. They are men who are experts in at least one field, and excellent in several. At Xavier University we have several officers who couldn't be "caught" on any question in their field, from gunnery to supply. One knows the "Bible" so well he almost recites it in his sleep; another can take a 4×4 apart blindfolded, and so

on. And each knows the general matter well enough so that he knows where to find it when it is needed. On top of everything else, these instructors are teachers.

As to last month's statement about an Advanced Course student being an almost sure thing for a commission, let us refute that a bit. The writer's class started with thirty men, the quota assigned to our school. At present, there are twenty-four, six having been dropped from the roles because of incompetency in one or more subjects. And the rest of us are not even sure yet that we will receive our commissions. One bad slip and we're out. Take a look at the requirements listed in AR 14010 for appointment in the Officers' Reserve Corps, and then look at the list of subjects that the present R.O.T.C. graduate has studied and familiarized himself with. Gunnery, from A to Z, including special methods, corrections, survey, tactics and technique, motors and motor transport, administration, supply, mess management, fire direction, training, leadership, the associated arms and services, in fact, everything that goes to make up Field Artillery. He's no genius, but his store of knowledge is plenty adequate. And it is no "fresh air" course either; it's hard, requires plenty of study and concentration. The curriculum in the writer's university calls for six hours a week: one hour of administration during which the Adjutant is apt to throw the morning mail at you and tell you to answer it; and four hours of instruction, lecture, or quiz, including one two-hour period. On top of all that there is another hour, the typical Corps Day formation for the purpose of practicing reviews and formations.

The examinations thrown are no slouches, and we defy anyone to say they are easy and that it is practically impossible to flunk them or to receive an unsatisfactory grade. Brother, we've sweated through examinations on metro messages, firing charts, organization, etc., and we mean sweat!

Turn a minute to the idea of the summer camp (which, incidentally, has been cut out for the duration). The writer attended camp last summer at Fort Knox. The R.O.T.C. artillery was organized into four batteries, consisting of cadets from Ohio State University, Purdue, Eastern Kentucky State Teachers' College, Culver Military Academy, and Xavier. These are not military schools, except Culver, which had only about twenty men present. At all of these schools, the candidate is not granted a commission unless his faculty both at camp and at school deem him a competent leader. Each cadet is given an efficiency report for the six weeks' period. It



was no "romp in the country" last summer, let us assure you. In plain words it was "hell," and the word isn't strong enough. We worked until we thought we would drop. We went out on the firing range at six in the morning, returned for noon mess, went back, and sometimes didn't return to the battery areas until four; then we cleaned the equipment, including both trucks and guns, and were out in line at five forty-five to stand a rigid inspection. After six o'clock mess we attended special classes in gunnery, which were optional, or took part in the various activities of the camp, such as boxing shows, stunt nights, newspaper editing, and the like. That was the schedule for three weeks, and those were the first three, since the Armored Force had jumped the gun on us and obtained the range when we really needed it. We didn't lead up to our firing at all; we fired, and that was all there was to it. And we were rated on every problem we fired; we can proudly say that there were few unsatisfactory ones.

After gunnery, we took up such back-breakers as tactics and over-night problems. We fought the First Armored Division, and with our four batteries of 75's we held off the Armored Division tank attack from dawn till noon, and then called the problem off because the artillery concentrations were too effective. One gun alone accounted for seventeen Red (Armored Force) tanks. We wallowed in mud, dug trucks out practically with our hands, and slept on the wettest ground you ever saw. We saw all sorts of demonstrations by the infantry and the engineers, and gave demonstrations of our own. We did survey work, pulled our share of KP and CQ duties, listened to lectures, sweated, swore, and sweated some more.

We did have fun, because we were all young men with a common purpose, but it was definitely no "romp in the country." Ask such men as Brigadier General Harold Bull, the R.O.T.C. camp commander last summer; as Lt. Colonel Clinton S. Berrien, one of the senior Field Artillery instructors; Lt. Colonel George E. Wrockloff, former assistant PMS&T and now CO of the 27th Armored FA; Lt. Colonel Arthur McKinley Harper, former PMS&T; or Lt. Colonel Alpha Brummage, a present PMS&T.

There are, naturally, evils connected with any rating system, whether it be the efficiency report or any other. We think, however, speaking for the Fifth Corps Area cadets, that the present system of selecting R.O.T.C. graduates for commissions is as good as any could be.

We know what we know, our instructors know what we know, and if we are not recommended for commissions it's our own damned fault, and no one else's. And I think that is the case with all R.O.T.C. units throughout the United States. There are bound to be some men who are not fitted for service with troops, not only Reserves but perhaps even some West Point graduates. That can only be determined after actual service. But on the whole, a careful consideration of the composite will reveal a more encouraging picture than Lieut. Kilduff threw our way last month. Corps Area Commanders aren't doing their jobs for nothing, and you can say the same thing all the way down the line, as to the DEML men who serve at R.O.T.C. units.

Modern young men are definitely not dolts nor dullards. They are keen and quick and willing to learn. The "cream of the crop" should be picked as officer candidates. And they are. Why else are quotas limited to thirty out of three hundred? One in ten is a good percentage. There are bound to be misfits; they don't slip by, either—they usually back-fire or crack under the strain. It is all very well to say that some new system of selection should be installed, without giving us a feasible plan. What system? How? Why? When?

In conclusion, let us state that the R.O.T.C. courses in our Corps Area are by no means regarded "beneath the dignity" of any student, Phi Beta Kappa or not. And the men in them are regarded with respect by their fellow students and the citizens alike. You should hear the cries of disappointment as some men are rejected for either mental or physical reasons. It is a privilege to be a member of the Advanced Course, and is regarded as such. Nowhere is "esprit" so high as in one single class of twenty cadets. Sure, we have our military balls, corps smokers, parades, luncheons—but we work! We respect our instructors because we know they are competent; they stake their reputations on us. And there is not one man in our class of twenty-four who is not itching to be ordered to active duty immediately, although we will all be in at least by June. And wherever we are sent, whether it be to Sill, Bragg, or directly to troops, not one of us is afraid to face a platoon of hard-boiled enlisted men with utter confidence. Sure, we'll be nervous; we bet General Marshall was plenty nervous when he gave his first commands. But that's only a momentary ailment. Just orient us, and then watch our smoke! We're not bragging; we know what we know.

---

#### "BLACK MARKET" STORY

In the lounge of a large hotel, much patronised by black market merchants, two doctors were comparing notes. One said to the other: "I've got a great many cases of hysteria."

A man leaned across and said: "I'll take the lot, mister."

# Diary of War Events

EDITOR'S NOTE: The following diary provides a ready reference file for those who do not save newspaper clippings. For those who are unable to obtain adequate news coverage of the war, it gives briefly the essential day-to-day events. It will be continued as long as it seems to perform a useful function.

## MARCH, 1942

- 1st Java Japs drive 40 miles inland from Subang (100 miles east of Batavia) and 16 miles from Rembang (90 miles west of Surabaya). Naval losses: Japs: 9 warships and 17 transports sunk or damaged; United Nations: two Dutch cruisers and two Dutch destroyers lost, another cruiser damaged.  
American-Filipino guerrillas active in northern Luzon.  
Six to nine merchantmen torpedoed out of Western Atlantic convoy.
- 2nd Wavell transferred back to India, from Southwestern Pacific.  
Japs continue Java gains.  
Australia drafts labor at army pay.  
Hard fighting near Leningrad, near Kharkov (Donets Basin), in Crimea, and around Staraya Russia where German Sixteenth Army is trapped.  
State Department recognized De Gaulle's authority in New Caledonia and other strategic Pacific islands.
- 3rd Java government moves inland to Bandung.  
West of Gilbert Islands, eighteen Jap planes attack U. S. Naval unit; sixteen are lost without U. S. damage.  
Japs land at Zamboanga (southern Philippines) and shell towns on Cebu and Negros Islands (of the same group).  
British bomb factories in suburban Paris for two hours.  
Submarine shells Mona Island, southwest of Puerto Rico. Another sinks destroyer *Jacob Jones* off Cape May, N. J., with all but eleven of crew.
- 4th Japs gain Java air superiority, advance on ground, bomb Port Darwin.  
Admiral Helfrich succeeded in naval command by Acting Rear Admiral van Staveren.  
British lose west bank of Sittang near its mouth; no more obstacles between Japs and Rangoon.  
MacArthur's P-40's bomb and sink three ships and two launches in Subic Bay, set supplies afire.  
Three light bombs do no damage near Honolulu.  
Several thousand more fully-equipped American soldiers land in Northern Ireland; several hundred from there arrive in London.
- 5th Jap columns within thirteen and forty miles of Batavia, thirty miles of Bandung.  
Japs round head of Gulf of Martaban and strike along flats toward Rangoon, seventy miles to southwest.  
Soviet recaptures Yuhkov, 125 miles east of Smolensk.
- 6th Java practically cut in two; Batavia abandoned; defenders withdraw to Bandung plateau.  
British tanks and planes counterattack Japs at rail town of Pegu, 55 miles northeast of Rangoon.  
Losses announced: four more merchantmen with probably 93 lives: one off Atlantic Coast, another off Aruba, the others "overdue and presumed lost."  
Navy announces that in past week U. S. submarines sank Jap heavy destroyer and large tanker, and put out of action an aircraft carrier and 3 cruisers.
- 7th Japs penetrate Bandung's outer defenses; land tanks at Calapan on Mindoro (Philippines), and shell east coast of the island.  
Free French invade southern Libya, capture garrisons of 3 Italian posts, then withdraw. Sand storms immobilize northern ground forces, but British bomb Tripoli and Bengazi.  
Brazilian *Aratuban* sunk off Newport News, probably by Italian submarine. Haiti reports *Carodia* sunk.
- 8th Japs land on New Guinea at Salamaua and Lae (430 miles from Australia).  
Rangoon-Mandalay railroad and Burma Road cut about 60 miles northeast of Rangoon. Japs push westward, north of Rangoon.  
29 Jap trucks of Bataan column of 90 are destroyed by artillery.  
MacArthur reports General Homma. Jap Philippine commander, committed suicide late last month.  
Russians clear all but 35 miles of Rzhev-Vyasma railroad.  
British again bomb factories near Paris and elsewhere in occupied France.
- 9th 10 Jap bombers attack Port Moresby, on New Guinea's south coast.  
Lt. Gen. Yamashito, Singapore's conqueror, made Philippine commander. Rangoon is evacuated.  
100 British bombers attack Ruhr industrial centers, especially Essen.
- 10th Japs make third New Guinea landing, at Finschhafen, northeast of Salamau where Australians bomb Jap supply fleet.  
Japs again bomb Port Moresby.  
Surabaya has fallen, but some fighting continues in central and eastern Java.  
Japs again shell Cebu, in Philippines.  
British again bomb Essen, and in Mediterranean set fire to Italian cruiser, destroyer, and merchantman.  
Berlin admits its 16th Army, surrounded near Staraya Russia, is in precarious position.  
1 of 2 Jap seaplanes shot down west of Midway Island.  
Sinking disclosures: American tanker and Brazilian passenger vessel near New York; another American tanker off Cuba.  
Australian and American bombers destroy 7 Jap ships and fire a flying boat on New Guinea's north coast.
- 11th Libyan Free French push north, take Italian post at Temissa.  
British torpedo planes chase super-dreadnought *Tirpitz* to Norwegian refuge, when it approaches convoy en route to Russia.
- 12th U. S. and Australian heavy bombers knock out 13 Jap transports headed toward Port Moresby (New Guinea), damage Salamaua airport.  
U. S. sub sinks 4 Jap merchant ships in Jap waters.  
Nazis admit lines breached northeast of Orel, and Donets Basin forces on defensive.  
4 more ships reported sub-sunk in Western Hemisphere.
- 13th Jap navy active in Solomon Islands.  
Japs pounded on New Guinea and New Britain: heavy U. S. bombers shoot down 5 fighters and wreck 2 airdromes, Australians a third.  
British and Chinese join in common line 80 miles above Rangoon on Mandalay railroad; Japs drive northward to wedge between them.  
Russians claim in 15 days to have killed 14,000 Germans, recaptured 84 towns and villages.  
British bombers constantly raid northern France and Germany, fire Kiel naval base, in daylight down 8 Nazi planes with loss of 5 fighters.
- 14th Java naval battle sank U. S. cruiser *Houston*, destroyer *Pope*, and 10 other United Nations warships; 8 Jap ships were sunk or put out of action.  
Japs again attack Port Moresby and raid islands between New Guinea and Australia.  
British set large Cologne fires, destroy 10 German planes in daylight Channel fighting.  
Free French penetrate southern Libya 250 miles, take another Italian outpost.  
Another U. S. freighter lost off Atlantic coast.
- 15th Japs claim 50,000 men, including some U. S. troops, were captured in East Indies.  
Japs' Burma advance hindered by bombing and strafing. Bombing of Jap air bases in New Britain continues.  
Large U. S. air reinforcements arriving in India.  
Seven German torpedo boats sunk in two days in English Channel.
- 16th Fourteen Jap planes bomb Darwin, on Australian north coast. Australians retaliate on Jap-held Timor, while U. S. planes bomb New Britain air field and shoot down three Jap fighters, losing one.  
Chinese troops with U. S. equipment occupy Toungoo sector of Burma front.  
Rangoon garrison escapes to central Burma after raid across Sittang River temporarily checked Jap advance.  
Navy Department announces recent sinking of Jap tanker in Philippines and sub-sinking of freighter near Japan.  
Germans admit breach in lines on central Russian front as new cold wave strikes.  
Chilean freighter sunk off New York, with all but one of crew of 28.
- 17th General MacArthur arrives in Australia by torpedo boat and plane, to take full command of Southwest Pacific, including Philippines. Maj. Gen. Wainwright, his Bataan successor, throws back first Jap attack in nine days.

- Chinese troops in Burma repulse Jap-led Thai forces.  
British state that United Nations naval forces destroyed off Java faced 91 Jap vessels.  
Germans close Norwegian ports.  
Three more American ships sunk in Atlantic, one Uruguayan.
- 18th Twenty-three Japs ship were sunk or damaged at New Guinea bases by U. S. and Australian air forces, including three cruisers, three destroyers, and five transports.  
Japs begin Central Burma attack south of Toungoo.  
Two more U. S. merchant ships sink off Atlantic coast.
- 19th Japs, led by German missionaries, move inland from northeast New Guinea coast.  
Lieut. Gen. Stilwell, chief of U. S. military mission to China, made commander of two Chinese armies in Burma. Japs pressing on roads from Rangoon to Toungoo and Prome.  
British withdraw from Tharrawaddy.  
Russians capture rail section near Leningrad.
- 20th Air attacks forcing Japs to seek new air bases in New Guinea. Their advance there opposed only by snipers and rough terrain.  
Japs reach Toungoo area, 150 miles north of Rangoon. Advance elements of drive against Prome, to the west, are 80 miles north of Rangoon.
- 21st Japs attack Bataan positions and shell Manila harbor forts. Are thrown back near Zamboanga in southwestern Mindanao.  
Burmese Japs expelled from Letdapan, rail junction 70 miles north of Rangoon, toward Prome.  
British report sub-sinking of two large Italian ships in Mediterranean. Italians claim a medium British warship, but admit losing a sub.  
Two more U. S. merchantmen sunk off our Atlantic coast.
- 22nd Japs toss some more "Bushido" in Bataan, demanding U. S. surrender.  
U. S. and Australian planes raid Jap air base at Lae, New Guinea, destroy 23 planes. Jap planes bomb Darwin and Katherine, 180 miles inland, with little effect.  
Japs attack southern Burma airfield with 80 bombers. Chinese counter-infiltration squads help British on central front.  
Libyan British raid Martuba airdrome and Timini outposts, take 150 prisoners.  
Three more merchant ships sank last week off our Atlantic coast.
- 23rd U. S. subs sink three, damage two enemy merchantmen in Jap waters.  
Jap planes raid Port Moresby (New Guinea) and Wyndham on Australian west coast.  
Japs launch mass air and ground attack on British and Chinese positions 35 miles south of Toungoo, Burma.  
British subs sink two Italian subs, two small ships, six schooners in Mediterranean.  
Three ships, one a passenger vessel, sunk off our Atlantic coast.
- 24th American fliers destroy 40 Jap planes on Thai airport. Chinese bear brunt of Jap attack below Toungoo, Burma.  
Fifty-four Jap bombers attack Corregidor and Bataan.  
Heavy air raid on Port Moresby.  
Two U. S. destroyers missing in Java waters.
- 25th British and Chinese cut off below Toungoo, Burma. Chinese guard Burma road, British the land approaches to India.  
U. S. naval and air forces raid Marcus Island, 990 miles from Tokyo, and Jap-held Wake Island.  
Japs occupy Andaman Islands in Bay of Bengal.  
British torpedo Italian battleship in Mediterranean.  
Two more ships sunk off our Atlantic coast.
- 26th Burmese Japs move in force toward Prome and oil fields beyond. Chinese, surrounded at Toungoo, withstand attacks.  
Japs attack Corregidor and Bataan with 54 planes, losing four.  
Three hundred British heavy bombers bomb Ruhr industries, French factories in day and night raids.  
Russians shoot down 13 planes attacking Murmansk, meet new German counterattacks on central front.
- 27th Reinforced Chinese in Burma recapture Toungoo airfield, fight on three sides of city.  
Australia strengthened by return of expeditionary force.  
Japs bomb Corregidor seven times; patrol activity on Bataan increases.  
British bomb Ruhr and German installations in Belgium, Netherlands and France, lose 13 planes.  
Russians land force behind German lines at Murmansk, demolish bridges and munitions dumps.
- 28th British land, sea, and parachute forces attack German sub and seaplane base at St. Nazaire, France. Explosives-loaded destroyer purposely blown up at gate of naval dock.  
Japs enter Toungoo.  
Jap bomber shot down by anti-aircraft fire over Corregidor. Darwin and Port Moresby lightly bombed.  
Germans bomb Malta for six hours, claim hit on cruiser and two destroyers. Two merchant ships sunk off our Atlantic coast.
- 29th Chinese troops withdraw from Toungoo, fight in eastern suburbs.  
Jap attack on Bataan front thrown back with heavy losses. Concentration of boats in Manila Bay broken up by artillery fire.  
British bomb Luebeck, German port for Sweden, Norway and Finland.
- 30th German naval and air units attack British convoy off Russian Arctic ports, claim cruiser and two transports. British sank destroyer and hit three subs. Two German transports sunk off Norway.  
Chinese abandon Toungoo positions, fight north toward Mandalay.  
Russians claim freeing of another area in Smolensk sector.  
United Nations establish air superiority in New Guinea. Japs there retire from central valley to north coast because of floods.  
AA gunners on Corregidor shoot down Jap bomber from height of five miles.
- 31st Burmese British defending Prome heavily attacked. Japs helped by Burmese natives and lack of British air reconnaissance.  
Japs bomb clearly marked base hospital on Bataan.  
Australians bomb Jap airfields on New Guinea and Timor, destroying planes on ground.

#### FIRE POWER

Often it is hard to define some familiar-sounding concept, and it is peculiarly irritating to grope for the proper words. We all knew what fire power was. Why, that was elementary—that was what artillery was all about. There probably was some perfectly pat definition in the book which we had all seen hundreds of times.

"Yes, but what the dickens was it?"

"Something about the number of artillery pieces you had. And it probably included machine guns—oh yes, and mortars."

"And rifles," someone added.

That gave the volume of fire which could be brought down all at once.

"But wouldn't a division with automatic rifles and quick-shooting guns be considered to have more fire power than a division with bolt-action rifles and slower-firing howitzers?"

"And how about the caliber of the rounds fired?"

"The rate and density of the fires must be included somehow or other."

"But if one division carried along more ammunition than another, and could sustain a high rate of fire for longer periods, would it have greater fire power?"

"Now you are jumping the tracks; ammunition has nothing to do with fire power—fire power is just the number of rounds per minute an organization can fire."

"Why per minute, and not per hour, or per day?"

"Shucks, we had better look it up."

But we did not find anything on fire power in the texts we had in the battery.—E. A. R.

# Modern Methods of Attack and Their Antidote

## *A Review*

There appeared in England, a few months ago, a book called *Blitzkrieg*,\* by F. O. Miksche, which has attracted wide interest through the United Kingdom and may be one of those rare works which influences official thought. Despite its "popular" and trite title, it is a detailed and profound military study. The author was an artillery officer in the former Czech Army, then during the Revolution fought in Spain, where he saw the Germans laboratory-test the means and methods which a scant year later they employed on a larger scale against Poland and western Europe.

After the Battle of Cambrai in 1918, general staffs and service schools both here and abroad argued whether the tank was a breakthrough weapon. The French decided that it was not. The British (General Fuller, anyway) decided that it *was*. Germany and the United States didn't know; they had no armies to speak of, and few tanks. But, whereas the United States drifted and made no decision, Germany determined in Spain, by actual test, that the tank could revolutionize warfare. The experiments were carried out on a small scale, and were often stopped so quickly that foreign observers concluded that "the tank has failed." In brief, the Germans learned in Spain that war had changed; the French decided that it had not; the English and Americans learned nothing. In our own case, the fault was not that of the military alone, for the neutrality policy prevented sending an adequate mission of observers to Spain; the U. S. Army had to be content with descriptions furnished by newsmen.

Miksche gives a good description of the two elements, *Schwerpunkt* and *Aufrollen*, of the modern German offensive, and shows in detail how they are applied. The role and relative importance of each of the various combat arms—air, tank, infantry, artillery, engineers—is set forth. The author is specific. He implements his arguments with recent examples which cannot be gainsaid; he supplies march graphs, tables of organization, charts of ammunition expenditures. But the kernel of his book is: "Military organization has two roots: correct tactical doctrine on one hand and tradition on the other. Armies that adopt the former will live; those that adopt, or slowly adapt, traditional forms will die."

A description of a meeting engagement between a Panzer division and an ordinary infantry division is worth repeating verbatim:

"Our (infantry) division is marching in the approach to an encounter battle. Suddenly ahead of it appears not enemy infantry but a strong unit of armored troops. They clash with the advance guard, or with troops on the flanks, literally within a few minutes of their presence being reported by the division's reconnaissance units. Almost without losses the enemy tanks, helped by planes, cut through the whole array of the infantry division and reach its rear. Here they attack command posts and smash the centralized command. They break up the lengthy artillery columns already demoralized by dive bombers; they demoralize the infantry by being everywhere at once; within a few hours only ragged vestiges of a division remain."

This tragedy has been reenacted many times during this war, and in diverse theaters. We should know the story by heart.

Miksche favors decentralization—the use of combat teams. Even the reader who disagrees with him must admit that so far the war has been fought as the author describes it. The artillery chapter is titled *Artillery Decentralized*. The author, himself an artilleryman, says that today's artillery officer must be permeated by the spirit of the infantry. One important point which he makes, and which the JOURNAL has often dwelt on, is that modern battery positions should not be chosen with too much regard for a "covering mask," "defilade," etc.—the attack may come from the rear.

The latter half of *Blitzkrieg* deals with a method of defense which is probably not entirely original with the author. However, he describes it well and makes out a good case for it. He advocates a "web" of islands of defense, whose main strength is in *cannon* (the infantry component is mostly for local security). Though he does not specifically say so, the author here applies the combat team idea to the defense, and he does it in a thoroughly logical manner.

An interesting point is that infantry divisions, because of their slowness and lack of power, should not constitute the general reserve to be used for the counteroffensive. The latter must be executed by armored forces, striking at the flank and rear of the hostile blitz but just beyond its immediate proximity so as not to operate where the enemy is strongest.

The book *Blitzkrieg* is cheaply manufactured, doubtless because of the scarcity of good paper in England. But this and its title should not give American readers a false idea of its value.

\**Blitzkrieg*, by F. O. Miksche. Faber & Faber, Ltd., London, 1941. 12s. 6d., or \$3.75.

# BOOK REVIEWS

*WESTWARD THE COURSE: THE NEW WORLD OF OCEANIA.* By Paul McGuire. William Morrow & Co., New York, 1942. \$3.75.

Maps and travelers' guide-books have lately enjoyed unprecedented popularity. Their study gives superficial geographical understanding of the places-in-the-news, but a real appreciation of current events requires greater integration of the past. Especially in the East do we encounter the marching and counter-marching of great figures and movements, many of which appear in our own history as well. Xavier, Albuquerque, Drake, Cavendish, Cook, and many others left their marks on our mainland, possessions, or immediate neighbors. Throughout the southwestern Pacific and the Indies appear time and again the influence and effects of the Moslems, the Hindus, Buddhists, and Christians. Raffles of Singapore fame was active in many places. And the great navigators immediately grasped the strategic importance of the very points now being strenuously attacked and defended.

*Westward the Course* tells of these things and many more. It relates the present to the past, and has some shrewd remarks about the future as well. Mr. McGuire has a good sense of strategy, too, although his book is not a military or naval one; he rightly views the Fijis as the natural hub of the south Pacific, having the same importance there as has Hawaii in the north. Being an Australian, he can not refrain from pointing out how much of England's empire was actually thrust upon her, in some cases over the grumbling heads of her ministers.

Considering the importance of Britain's past roles on the seas and their shores, this book is inevitably one of Empire. The political and material dominations are of course outlined, but Mr. McGuire as a traveled and educated

citizen of the world is more concerned with the Empire of the mind and spirit, with the expansion of Western man in the lands below Asia and beyond the Pacific.

No equal of his book has yet appeared, and none is needed for quite some time to come. It is a compact encyclopedia, informative and with delightful diversions. Mr. McGuire has a ready wit and an eye for such enlightening details as the Buicks (symbol of dignity) rotting away under native houses in Sumatra. *Westward the Course* is recommended for information, for entertaining reading, and for radio-side reference—a large order for any work, but one which this book can fill.

—J. E. C.

*AMERICA IN THE NEW PACIFIC.* By George E. Taylor. The Macmillan Company, New York, 1942. \$1.75.

Here is a volume that knifes straight through to the true significance of our position in the Pacific; to the play and interplay of the United States, Britain, China, Holland, Japan, and other forces; to the meaning and the method of the several expansionist and nationalist movements; and to the requirements for the ultimate winning of the peace. The author is head of the Far Eastern Department at the University of Washington, to which position he took a background of two years in China as special correspondent for the Manchester *Guardian* and the *New Statesman*. He has traveled widely in North China, Japan, Manchuria, and elsewhere in the East, and has taught in Chinese universities. At the present time he is on leave of absence in order to serve in New York with the American Council, Institute of Pacific Relations.

This personal experience combines with his historical studies to yield a straight-forward, straight-thinking

## DISCOUNT OFFER

The U. S. Field Artillery Association will obtain for its members, books (texts, biographies, histories, fiction) at the following discounts for cash with order or prompt payment of first billing:

On orders amounting to at least \$2.50, 10%

On orders amounting to \$10.00 or more, 15%

No discount possible on Government publications.

We pay postage.

## FIELD ARTILLERY BOOK 161

**Gunnery (the "Bible"), 1941 Edition**

**THE FIELD ARTILLERY SCHOOL**

**Price 60 cents**

(See discount offer on page 411)

This book has been rewritten primarily for instructional purposes. FM 6-40, Firing, now in process of revision, will cover in condensed form the subject matter of FAB 161, but its publication date is uncertain. The **ONLY** complete work on Gunnery is this complete, standard volume.

FAB 161 is for sale *only* to members of the military service or those who are entitled to receive documents ordinarily classified as *Restricted*.

Order through

**U. S. FIELD ARTILLERY ASSOCIATION**  
1218 Connecticut Ave., Washington, D. C.

## FIELD ARTILLERY BOOK 120

**Automotive Instruction, 1941 Edition**

**The Field Artillery School. Price 75 cents.**

(See discount offer on page 411)

Contains latest data on all parts of the automotive vehicle; fuel and lubricants; the military driver; and various forms.

Order through

**U. S. FIELD ARTILLERY ASSOCIATION**  
1218 Connecticut Ave., Washington, D. C.

analysis. Mr. Taylor comes directly to the point without wasteful verbiage or flowery rhetoric. He clearly shows that no compromise is possible in the war with Japan. That country is fighting for national monopoly with all its political, cultural, and economic ramifications, whereas our own objective is free and open commerce, now as in the past. We are not, however, fighting to defend the relics of nineteenth century empires and domination; we were actually opposed to them when our own Eastern penetration began. The Open Door was our goal then, and it was followed by benevolent efforts to effect the independence of national groups, whereas the British and Dutch colonial systems were founded on the suppression of industry abroad so that the colonies could supply the mother-country with the raw materials wherewith to manufacture the exports needed for prosperity at home.

Our own exports to the East were principally Christianity, civilization, and commerce, with the first two almost inseparable and indistinguishable, and with Christianity and commerce often working to mutual advantage. Our concept of power is economic and competitive, and in our relations with other people we consider ourselves as an investing and trading nation, an economic and cultural competitor. On the other hand, Japan envisions herself as top-dog, the master controlling his slaves, the all-powerful dictator regimenting the thoughts, habits, work, and very lives of the peoples of all the East.

Mr. Taylor sees too the mutual misappraisal of Japan and the United States. Accustomed as we are to an economy where "money talks," we would not believe that Japan would act against what we considered to be its best economic interest. To us, economic strength meant military strength, and we failed to visualize how strong might be the mobilized military strength of a poor country when pitted against the unmobilized military potential of a rich one. "Those who wish to avoid war because of its economic devastation are in a poor position to understand the diplomacy of those who consider economic dislocation small price to pay for power." Which strikes at the very heart of our miscalculations.

But as we know, Japan also misunderstood us. Because of ambition and the undemocratic processes of their own country, her leaders naturally tended to exaggerate those phases of America which best suited them—wishful thinking, as it were. The pacifism of American youth and the isolationism of our politics, the conflict between capital and labor, and the disunity of public opinion, were all deemed specially-provided for her to act directly against us. Japan misunderstood our psychology as much as she did that of China.

What of the future? "The liberation and modernization of Asia is essential to the continuation of democratic institutions in America," says Mr. Taylor, presenting excellent reasons for such a statement. He penetrates to the heart of past problems so sharply and cleanly that his analysis of the present and forecast of the

future must command respect. In short, despite its brevity, this is the most complete and valuable book on our Eastern relations that has appeared in a long while.

—J. E. C.

*REMEMBER PEARL HARBOR.* By Blake Clark. Modern Age Books, New York. \$1.25.

Blake Clark is an instructor in English at the University of Hawaii and shows his command of the language in his simple but vibrant description of the Islands during and after December 7.

Hawaii, magic land of song and gentle breezes, slept peacefully into its tragic drama. The airfields, Pearl Harbor, hospitals, native Hawaiians, civilian volunteers—all assemble to tell a tale of fact that brings lumps to your throats, sends blood pounding furiously through its course, and makes you know more certainly that "Pearl Harbor" will live long in the annals of history and the bitter memory of Americans.

His story is the best gathering of highlight feats of individual and collective heroism we have seen. He shows you clearly the U. S. sailor, soldier, marine, and airman as he did his best.

Two hours of enlightenment for the non-technical reader. Worthwhile.

—A. V. R.

*THE PANAMA CANAL IN PEACE AND WAR.* By Norman J. Padelford. The Macmillan Company. New York, 1942. \$3.00.

"Timely" is a much-overworked word, but it can well be applied to this comprehensive review of The Panama Canal and the Zone. As early as 1529, the possibilities of an artificial waterway across the continent were studied by Ceron, and through the years such a project received sporadic attention from the commercial point of view. Our own connections with the venture, however, sprang from war. The Mexican War and the annexation of Texas and California were followed by the Clayton-Bulwer Treaty of 1850; "manifest destiny" led directly to the Hay-Pauncefote Treaty (1901); and the first transit of the completed canal occurred on August 15, 1914, immediately after the outbreak of World War I.

Professor Padelford outlines our relations with the Central American states affecting canal routes. The peculiar status of the Zone—neither territory nor possession—is particularly well brought out, as is also that of the Panama Railroad, a New York corporation; this of course includes inevitably our peculiar rights, privileges, and duties. The commercial use of the Canal is analyzed, together with its strategic importance, the direct safeguards taken in peace and in war, and the related precautions taken in World War I. As the book was completed on November 18th, it does not specifically state the additional steps taken since our entry into the



## HOW TO PRODUCE AN EFFICIENT FIRING BATTERY

By Majors H. F. Handy and V. F. Burger

20c single copy

15c each in lots of 10 or more

Write for quotation on quantity orders

This 62-page booklet is chock-full of practical advice for the battery executive and all members of the firing battery.

### CONTENTS

General  
 Training of the Firing Battery  
 Suggestions for the Executive  
 Service Practice  
 Night Occupation  
 Recording  
 Certain Common Errors, Their Causes and Prevention  
 Useful Expedients  
 Safety Officer  
 Recapitulation

*Thousands of copies have been sold.*

*Order your copy today.*

**U. S. FIELD ARTILLERY ASSOCIATION**  
 1218 Connecticut Ave., Washington, D. C.

## HOW TO SAY IT IN SPANISH

75c

(See discount offer on page 411)

For the soldier who wants a *quick* introduction to Spanish, to make his needs understood.

**U. S. FIELD ARTILLERY ASSOCIATION**  
 1218 Connecticut Ave., Washington, D. C.



# ORDERS

**Published in 1942 by The Adjutant General's School—Price 50c**

(See discount offer on page 411)

ORDERS is a booklet which every adjutant and sergeant-major will find invaluable.

CONTENTS:

Discussion of Orders  
Specimen General Orders  
Special Special Orders for Officers  
Specimen Special Orders for Enlisted Men  
Miscellaneous

*Order through*

**U. S. FIELD ARTILLERY ASSOCIATION  
1218 Connecticut Ave., Washington, D. C.**

## THE SOLDIER'S HANDBOOK

### Field Artillery Edition

An exact reproduction of the official text of FM 21-100, BUT with 77 *additional* pages of Field Artillery information. The basic information needed by all officers and enlisted men is here, along with such matters of the arm as the history and development of its weapons, notes on modern field artillery (42 pages), signal communication, glossary of field artillery terms, etc.

**Price: 50c per copy**

**See discount offer on page 411; on 25 or more copies, 20% discount, F.O.B. Harrisburg, Penna.**

## THE SOLDIER AND THE LAW

By MAJOR J. A. McCOMSEY and  
CAPTAIN M. O. EDWARDS

**\$1.50**

(See discount offer on page 411)

This book includes complete examples of board and court records and forms of every kind. It is a handy guide for every enlisted man, non-com, and officer.

*Order through*

**U. S. FIELD ARTILLERY ASSOCIATION  
1218 Connecticut Ave., Washington, D. C.**

present war, but it does explain so well the situation existing twenty-five years ago that the current picture is clear.

The frontispiece is an excellent large map of the Zone with inserts showing the by-pass locks now under construction, and a Mercator map gives the distances from Colón on the major trade routes. As the book was prepared with the assistance of officials of the Department of State, the War and Navy Departments, and The Panama Canal, it can be considered as accurate and authoritative as it is well-written.

—J. E. C.

*ADJUTANT GENERAL'S SCHOOL BULLETIN.  
Published monthly at the A.G.S., Fort Washington, Md.*

This official publication of the Adjutant General's School is an aid to the administrative officer and an attempt to keep busy administrative personnel in the field abreast of changes in administrative techniques. Directed primarily at adjutants general and adjutants of large installations, it also prints a monthly digest and index of War Department circulars and a check list of new army regulations which should be helpful to lower echelons. The Bulletin acts as a liaison agent between developments in the Adjutant General's Office and troops in the field and publishes material designed to make administration simpler and more efficient.

—L. B. C.

*THE GEORGE WASHINGTON OF SOUTH AMERICA.*

Our schools have taught us history—ancient, medieval and modern European, American, and occasionally Oriental. Seldom, however, did we touch upon South American history other than perhaps by the bare mention that Pizarro invaded Peru. It is of course true that for several centuries Spain and Portugal held the continent as a group of colonies, but for the past one hundred and thirty-odd years our neighboring countries have had histories of their own. Brazil attained independence quite peacefully, but her sister States fought long and bloody wars for their freedom. Two men broke the Spanish grip; San Martín was the leader in the south, Bolívar in the north. Of the two, Simón Bolívar was perhaps the more liberal, and to him was given the title "The Liberator."

Born to wealth and ease, a full orphan at nine, and a spoiled child of privilege, Bolívar was influenced by two strong personalities and one experience to cast his lot not only against the crown but also for full freedom for Venezuela and her neighbors.

Rodriguez, a strong liberal, was his Venezuelan tutor during his formative years.



In 1804 Bolívar, despite his distinguished lineage, was expelled from Madrid by a royal decree which affected Spain's own colonists as well as foreigners.

In the Paris of that time Bolívar succumbed to the spell of Napoleon, then the apostle of freedom. The rise of liberty penetrated men's very bones. Napoleon's Empire was yet to come. Action for liberty was contagious. So Bolívar returned to Caracas to embark on the first of his three campaigns to free his native country. Although without military experience, he brought with him energy, resourcefulness, and a singleness of purpose. He threw into the struggle his entire life from twenty to forty-seven, and two family fortunes.

The result was his liberation of more than half of South America. Bolivia named itself for him. And Bolívar himself died penniless, in exile, when only forty-seven. His military achievements, however, undoubtedly had some bearing on the establishment of the Monroe Doctrine, and his vision foresaw the Pan American Union so clearly that the first meeting of the American nations was called by him.

The life story of such a man is an epic. It should be known to all. In studying such a man, too, one inevitably learns much of the geography and nature of the terrain of his exploits. Two recent biographies have received considerable notice, but the laurels still belong to a somewhat older work.

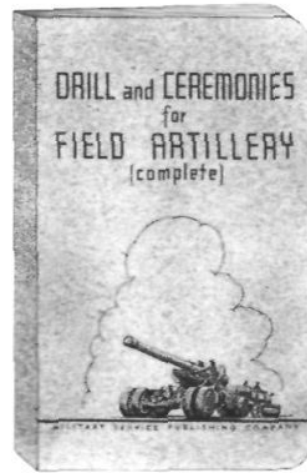
In November, Macmillan published Elizabeth Waugh's book.<sup>1</sup> It is perhaps adequate by some standards; at least it tells names, places, and dates from his birth to his death, and contains a rough sketch of the northern half of the continent with a few towns spotted. It is, however, written quite in the "dear children" style, which is often as irritating to the dear children themselves as to adults. Fortunately Miss Waugh does forget those mannerisms occasionally, and then becomes readable enough. Her book contains a bibliography of English writings, but unfortunately names none of the Spanish sources mentioned at its close.

Emil Ludwig's volume<sup>2</sup> appeared in January. His name should help sell many copies, but he is so obsessed by the psychological approach that there will probably be many disappointed readers. Of course, with such an interest he is not much concerned with what happened when or where, and therefore does not bother to include even a scrap of a map. Nor, perhaps with the thought that his is the last word, a bibliography for those who might wish to pursue the man Bolívar further; many would disagree with that conclusion.

It is curious to compare and contrast the different treatments a subject receives at different hands. Ludwig and Miss Waugh presumably examined substantially the same material, yet one says the evacuation of Caracas was horrible because of the heat and dust of the dry season,

<sup>1</sup>*Simon Bolívar: A Story of Courage*, \$2.50.

<sup>2</sup>*Bolívar: The Life of an Idealist*. Alliance Book Corporation. \$3.50.



**For All Field Artillerymen!**

**DRILL AND CEREMONIES FOR FIELD ARTILLERY**  
(Complete)

Many times have Field Artillerymen wished they had texts on subjects written especially for them, so that they would not have to argue over ambiguous or only slightly-applicable paragraphs in regulations written primarily by and for doughboys. *Drill and Ceremonies* fills the bill for FIELD ARTILLERY. It resolves your doubts, settles your bets.

**TABLE OF CONTENTS**

Dismounted Drill  
Service of the Piece  
Pistol  
The Motor Driver  
Equitation  
Driving and Draft  
Mounted Formations and Maneuvers  
Standards and Guidons  
Interior Guard Duty  
Ceremonies  
Individual Equipment and Tent Pitching  
Military Courtesy and Discipline  
Field Artillery Song  
Index

**PRICE \$1.00, POSTPAID**

(See discount offer on page 411)

**THE FIELD ARTILLERY JOURNAL**  
1218 Connecticut Ave., Washington, D. C.

Send a Year of the **FIELD ARTILLERY JOURNAL**

To Name .....  
(Please Print)

Address .....

City ..... State .....

**Remittance for \$3.00 inclosed.**

.....  
(Signed)  
.....

**PRAISED THROUGHOUT THE SERVICE**

**The  
Army Wife**

**What She Ought to Know About  
the Customs of the Service and  
Managing an Army Household**

**By NANCY SHEA**

**\$2.50**

**(See discount offer, page 411)**

An indispensable guide for the officer's helpmate. The Army bride and the woman new in the Service will find this book a comforting source of information.

**CONTENTS**

- Engagements The "Kaydet Girl" at West Point
- The Military Wedding
- Customs of the Service for the Bride
- Business of the Army Household
- The Army Bride is Entertained and Repays Her Obligations
- Army Children
- Change of Station
- Service in Washington
- Illness and Army Hospitalization
- Death and Military Funerals
- Transport Travel
- Foreign Service
- Etiquette for Civilians Visiting on the Army Post
- Camp Followers of the U. S. Army

*Order through*

**U. S. FIELD ARTILLERY ASSOCIATION  
1218 Connecticut Ave., Washington, D. C.**

while the other attributes the difficulties to the floods and mosquitoes of the rainy one! And whereas Miss Waugh ignores Bolivia and the source of its name, Ludwig overlooks Colonel Jimmy Rooke and the other Irish adventurers who contributed so much to the fight for freedom. In short, it is apparent that the Academia de Historia of Venezuela did not receive a full report from its contract writer.

Nearly ten years ago a student of Bolivar's life and times collaborated with a dramatic story-teller and playwright to produce a thoroughly readable tale.<sup>3</sup> It is a first-rate work, published during the sesqui-centennial celebration of the birth of the Liberator. Interestingly enough, it was recommended by *Child Study*, yet has a swing and cadence that hold the attention and interest of readers of all ages. The pen-and-ink sketches help give the "feel" of the period, although more adequate maps would be a distinct asset. This book is raised far above the more recent ones by the authors' familiarity with the time and the actual locale, and it is recommended as a good bet for anyone's pleasure and enlightenment. It gave both to this reviewer.

—J. E. C.

*FLIGHT IN WINTER. By John Clinton Adams. New Jersey, Princeton University Press, 1942; London, Humphrey Milford, Oxford University Press. 270 pages, index. \$3.00.*

If you wish to understand why Germany last fall was forced to station five divisions in conquered Yugoslavia, read *Flight in Winter*, a story of the Serbian retreat of 1915, to better understand the courage, optimism, and endurance of this small Balkan nation. This episode in their history ranks with the twenty-four-hundred-year-old exploit of Xenophon and the Ten Thousand and the retreat from Moscow by the Grand Army of Napoleon in 1812, yet it has received slight recognition in the society of historical events mainly because it occurred at the time the world's attention was focused on the Western Front.

Undoubtedly, this tale of agony, hunger, nakedness, cold, and toil suffered by this minor Slavic people of the obscure Balkans had to attain "academic standing" in the history of nations sooner or later. It is entirely appropriate that the author, one of the few scholars familiar with the rare language of the Slavs, now unburies this great story of human endurance. It gives us satisfying proof that men of the twentieth century are still able to do battle with the elements as well as man, and survive—a heart-warming feeling in this day of AEF's being sent to all corners of this earth—survive and still remain intact as a fighting force ready to become "the spearhead of victory for a triumphant return march."

—M. C.

<sup>3</sup>*The Dauntless Liberator: Simon Bolivar.* By Phyllis Marschall and John Crane. The Century Co., 1933. \$2.50.

**Paste this on back of postcard**

**CHANGE MY ADDRESS**

**From** .....

**To** .....

**APO No.** ....., .....

**NAME  
PRINTED** .....



Yes—and our day-room and our mess-hall, and our kitchen and our motor-shed and our stables and our . . . .

**NOT** a cure-all, **NOT** an infallible guide, but a fine, practical aid in getting the battery administrative details taken care of when, as, if, and how they should be.

## BATTERY DUTIES: A PRACTICAL LIST

covers those administrative duties which are "not in the book." It does **NOT** replace official material, but it does augment and clarify it. **YES**, field duties are included too, 'tho of course most administrative work is done in garrison (either post or cantonment). **AND** the official text references are given for the **TECHNICAL** duties of the individuals, wherever appropriate.

### TABLE OF CONTENTS

The Battery Commander and His Officers	Motor Sergeant
Athletic-and-Recreation Officer	Dispatcher; Truckmaster
First Sergeant	Motor Supply Corporal
Supply Sergeant	Gasoline Corporal
Battery Mechanics (Gun and General)	Automobile Mechanic
Mess Sergeant	Chauffeur
Cooks	Stable Sergeant
Dining Room Orderly	Stable Orderly
Kitchen Police	Horseshoer
Chiefs of Section	Saddler
Ammunition Clerk	Wagoner
Ammunition Sergeant	NCO in Charge of Quarters
Ammunition Corporal	Room Orderlies and Latrine Orderlies
Sergeant Major	Dayroom Orderly
Personnel Sergeant	Man in Charge of Heating Plant
Headquarters Clerk	Miscellaneous
Battery Clerk	

Prepared from the **FIELD ARTILLERY** point of view. Field manual size. Price: 25 cents per copy; see page 411 for discounts; for larger orders, write for quotation. Available **ONLY** from

## THE FIELD ARTILLERY ASSOCIATION

1218 CONNECTICUT AVENUE

WASHINGTON, D. C.