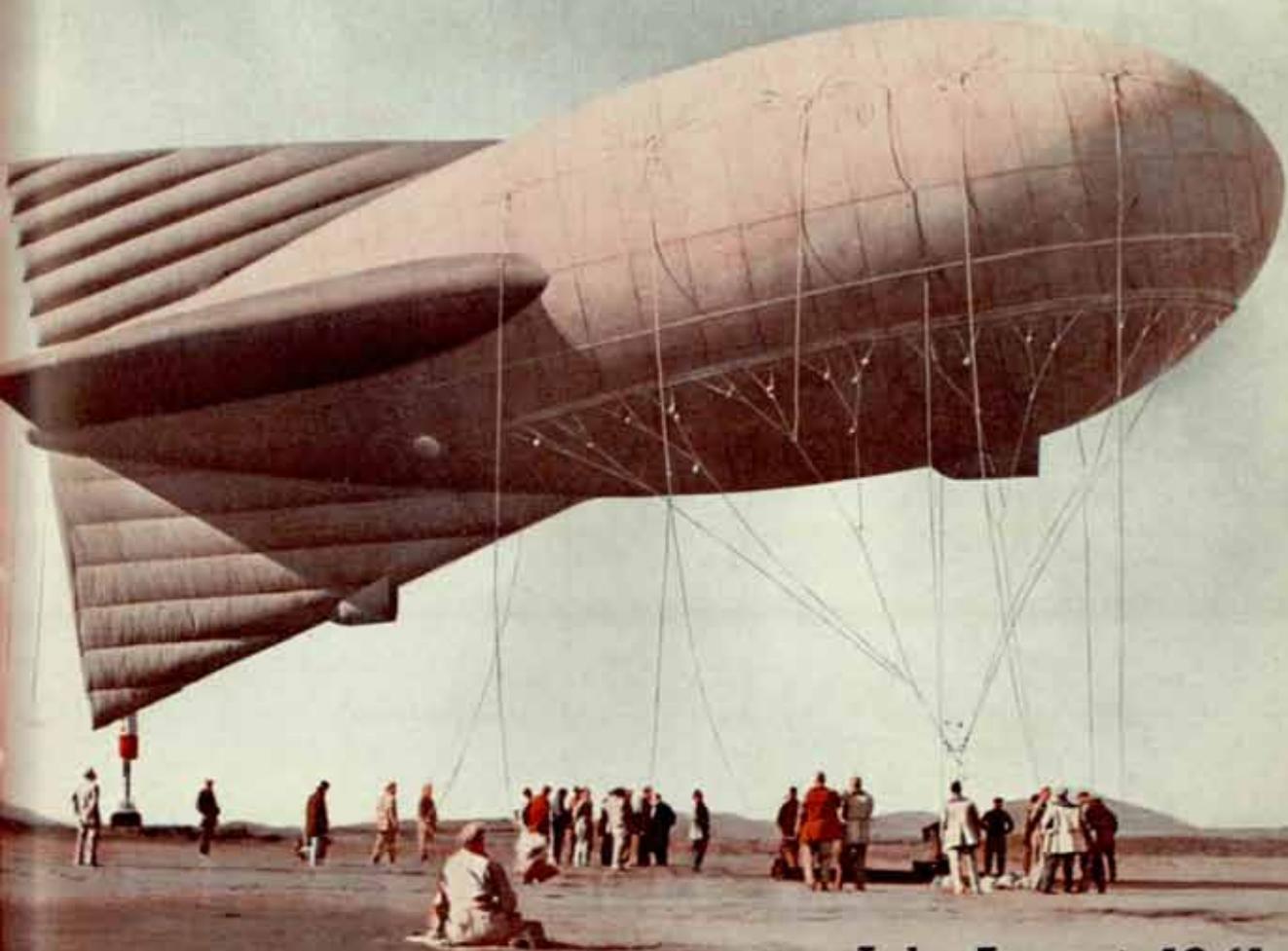


# COAST ARTILLERY JOURNAL



*July-August, 1941*

A New Edition Of The Text That Shows YOU "How To Do It"



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# COMPANY ADMINISTRATION

Including Supply and Mess Management

AND

## PERSONNEL RECORDS

*Including Personnel Office Organization and Procedure*

By MAJOR C. M. VIRTUE

The readoption by the Army of a personnel system similar to that in use from 1926 to 1933, thus freeing the unit commander and first sergeant from responsibility for practically all individual records and concentrating these personnel records in the unit personnel section, has required a considerable rearrangement of the matter in this text.

In addition to the rearrangement, new chapters have been added on the following subjects: "Company Supply and Supply Procedure," "Mess Management and Records," and "The Company Fund." A chapter on the new personnel system, including a discussion of the organization and operation of the personnel office in the regiment, also has been added. The new edition contains pay tables for enlisted personnel, including air mechanics' pay and flying pay. 396 pages.

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**THE COAST ARTILLERY JOURNAL**

1115 Seventeenth Street, N.W.

WASHINGTON, D. C.

# ENTER THE BARRAGE

In its early years, the Coast Artillery Corps was a singularly small family group. At the time of the entry of the United States in the first World War, it had but two offspring—the Fixed Harbor Defense Artillery and the Submarine Mine Service. Under the stimulus of war, though, it produced, in rapid succession, Tractor-drawn Artillery, Railway Artillery, and Antiaircraft Artillery, to become a family of notable size and diversified ability. On April 28, 1941, a new infant was born to this illustrious family. The newcomer was christened Barrage Balloon, and he made his first public appearance on June 26 and first played hookey<sup>1</sup> on June 28 to demonstrate the fact that he is indeed a lusty and rapidly-growing child.

The wit who, with slanderous implication, referred to him as having been sired by the Air Corps and "damned" by the Coast Artillery may have thought that he detected a lack of family resemblance, but he was wrong. The Coast Artillery has long sought a family addition with just the characteristics possessed by this newest offspring; and family resemblance, instead of being lacking, is strikingly present. Of the whole combat Army, the members of the Coast Artillery family are the only ones who do not seek an enemy out to attack him wherever he may be found. On the contrary, every member of the family is taught to believe that he has done his part if he can deter the enemy from

## By Colonel Robert Arthur Coast Artillery Corps\*

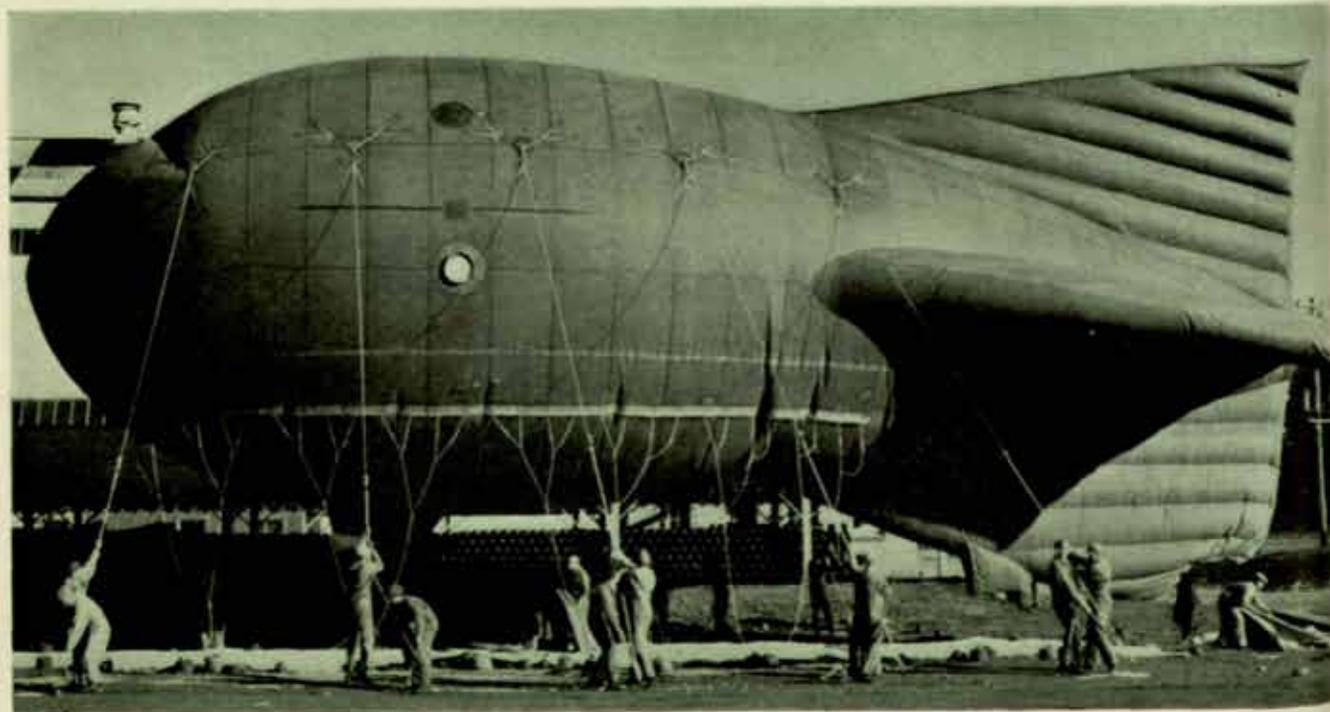
coming in where he may be attacked—but to attack him if he does come too close. This is exactly what Barrage Balloon's mission in life is going to be; and he is, I assure you, a legitimate addition to the family.

The new child does, however, possess one peculiarity. Whereas his closest brother—Antiaircraft Artillery—loves to cavort with the Air Corps children of his own age, who enjoy the pastime of towing missions, Barrage Balloon, by his very nature, demands seclusion from aircraft in his growing years. His present temporary nursery is the Barrage Balloon Training Center at Camp Davis, North Carolina, but as soon as he is ready to leave his swaddling clothes he will be removed to a permanent nursery far from the beaten lanes of commercial air traffic and from military and naval air establishments.

Those of us who have met him are enthusiastic over our newest relative. He gives every promise of rapid growth and of an interesting career. Some of The

\*Commandant, Barrage Balloon Training Center.

<sup>1</sup>The first barrage balloon flown at Camp Davis snapped its cable when caught in a gust of wind. It was recovered slightly damaged.



# BALLOON

JOURNAL readers are likely to meet him before he is much older, and others might be interested in a few brief statements concerning this most recent subdivision of our Corps.

## DEVELOPMENT

The history of barrage balloons, as a means of anti-aircraft defense, dates from the first World War. Substantiated testimony as to their employment and effectiveness is difficult to find, but during the latter part of the war England, France, Italy, and Germany all made some use of barrage balloons with varying degrees of success. In the defense of London, the British used balloon aprons formed by tethering four or five balloons in line with a connecting network of light steel cables. The French used a number of barrage balloons in the air defense of Paris and in the protection of the steel plants of Nancy, where, although the city was bombed frequently, the plants themselves were not seriously damaged. The viaduct between Chantilly and Paris and other areas and cities were similarly protected with reasonable success. The Italians used barrage balloons successfully in the defense of Venice. In November, 1918, Germany had eight barrage balloon battalions engaged in the protection of essential war industries.

During the past two decades the development of barrage balloons lagged, but it is common knowledge that they have been used extensively and effectively by both England and Germany in the present war. They are used in the air defense of London and other cities of England and Scotland. Some are moored to barges in important waterways to prevent aerial mine laying; and some have even been towed from vessels under way to prevent low-flying attack on convoys.

## ROLE, MISSION, EMPLOYMENT, AND EFFECTIVENESS OF BARRAGE BALLOONS

The rôle of the barrage balloon is one of passive defense of highly important areas or clusters of areas of limited extent. These areas are likely to be found most often in or near large centers of population, and they are likely to be among the primary objectives of enemy aircraft. In the defense of such areas, then, the adjoining city receives some incidental protection. It is possible that the "London Balloon Barrage" is really a series of barrages erected for the protection of highly important "point" targets within the metropolitan area, thereby giving some protection to the city of London.

In fulfilling this rôle, barrage balloons advanta-



*Introducing Colonel Arthur to Coast Artillerymen seems unnecessary. Former editor of The JOURNAL, author of numerous JOURNAL articles, wearer of the D.S.M., distinguished graduate of Leavenworth, A.M. Harvard—these facts barely begin to describe his versatility. His last assignment previous to organizing and taking charge of the Barrage Balloon Training Center was at head of the Historical Section of the Army War College.*

Official photographs by U. S. Army Air Corps



geously supplement other available means in the air defense of limited objectives, particularly pursuit aviation. When properly disposed tactically, barrage balloons and antiaircraft artillery are mutually supporting. The antiaircraft gunfire, in addition to protecting the defended area, affords the balloons the protection they need to keep from being shot down by the enemy; the balloons themselves keep the hostile aircraft up in the strata most suited for gunfire and, at the same time, prevent dive-bombing upon the defended area and upon the antiaircraft guns. The employment of antiaircraft artillery and of barrage balloons is therefore a common problem. Commanders of antiaircraft artillery must have a sound conception of barrage balloon units; and commanders of barrage balloons must likewise have an understanding of the tactical disposition, effectiveness, and nature of fire of antiaircraft artillery.

The mission of the balloon barrage is to prevent enemy aircraft from bombing the defended area from within the range of the balloons, that is, to force the enemy to drop his bombs from an altitude greater than that to which the balloons rise. To do this, they are so located and so equipped as to provide the maximum probability of destroying any airplane that may venture into the lower air strata. Some recent writers in the foreign press seem to have missed entirely the mission of barrage balloons, and a number of articles, notably in the Italian and Russian press, have decried the effectiveness of balloon barrages because of the small number of airplanes destroyed. The criterion of success is not the number of airplanes brought down; it is rather the extent to which the balloons make the enemy avoid the area they defend.

We have, as yet, had no tactical experience with the balloon barrage, but we have acquired considerable information and data based upon recent European experience. They are employed in the defense of important industrial or military objectives which require precision bombing for their efficient destruction. They are used to block an easily navigated or clearly defined route to an objective. They are used to reduce the air space to be defended by pursuit aviation. They are

used to force the enemy to altitudes at which the effective range of aircraft detecting apparatus is greatly increased. They are usually flown at full operating height, unless cloud formations exist, in which case they are flown in the cloud stratum, above which they are not permitted to project.

The term "barrage" inclines us to expect a line or a curtain of protection, but a balloon barrage is not a line, a circle, or a periphery of balloons. It is, rather a "box" type of barrage in which both high- and low-altitude balloons are dispersed throughout the area described by a line connecting the outermost balloons. Extending beyond the bomb-release line, the barrage thus affords no opportunity for diving upon the target area after clearing the balloons. This conception of the balloon barrage suggests that the balloons may, to a certain extent, substitute for the smaller calibers of antiaircraft weapons.

One cannot yet call upon statistics for complete testimony as to the effectiveness of barrage balloons. Casual readers of news items in the public press may be led to assume that the so-called "London Balloon Barrage" is relatively ineffective, judging from the destructive bombing which London has suffered. It has already been pointed out that a barrage balloon defense is best suited to small target areas. Further, it is well known that certain vital areas in the London district remain virtually untouched after all the bombing raids over that city. In this connection, just dwell upon this statement from the public press: "One of the miracles of the present war is the fact that the vital Battersea power plant in London has never been struck by a bomb although vast areas of the city for miles in every direction have been demolished." What is the reason? Is it because a balloon barrage has been placed about this vital point?

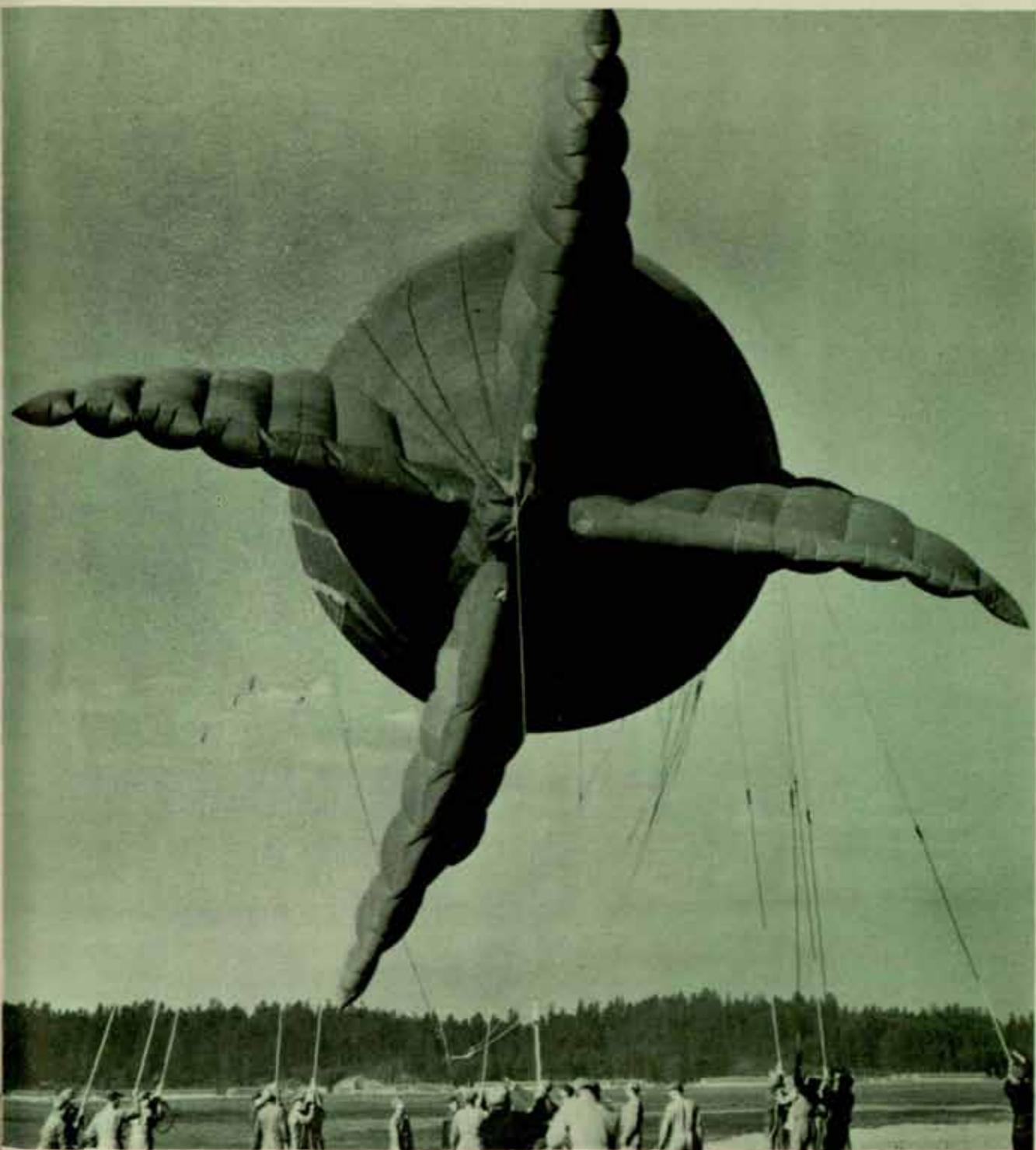
The two principal shortcomings of the balloon are that the altitude at which the balloon can be flown is limited and that it cannot be used when high winds prevail. It is clear, though, that when they can be flown, no pilot will knowingly attempt to fly through a balloon barrage, although many have successfully risked

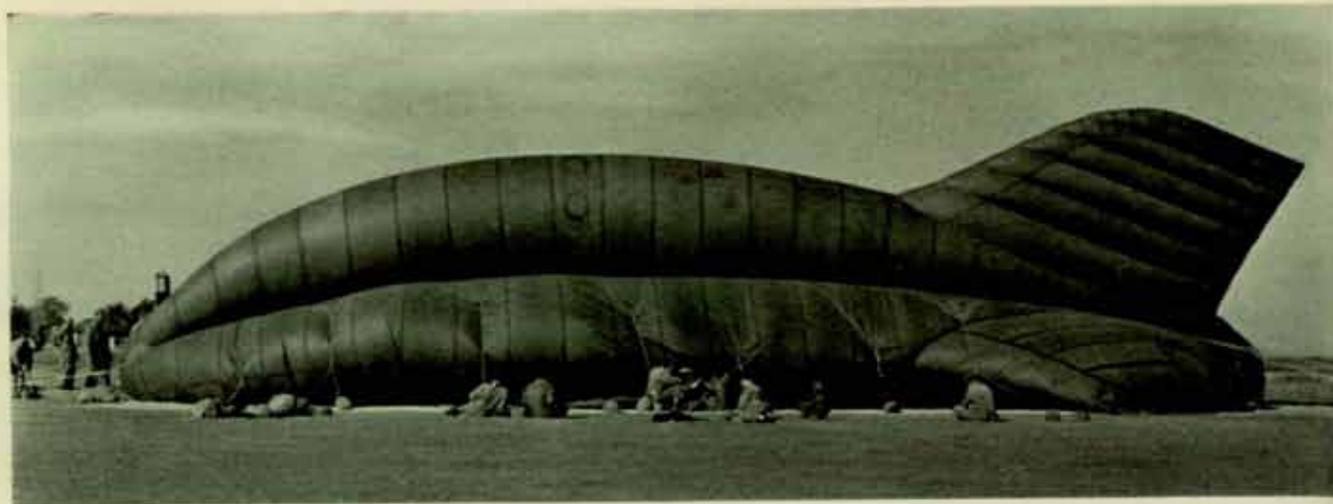
antiaircraft artillery fire in order to accomplish a mission. The balloon barrages around London and elsewhere have brought down airplanes. That they have not brought down more is probably due to a reluctance on the part of pilots to enter the zones defended by the balloons rather than to the ineffectiveness of the barrages. Antiaircraft artillery is said to have accomplished its mission if it either deflects the enemy before he reaches the bomb-release line or forces him to altitudes too great for accurate bombing. The barrage balloon accomplishes its protective mission positively in a like

manner and to a like degree, and it also, like the anti-aircraft artillery, brings down the airplane which encounters it.

#### THE BALLOONS

Classified according to construction, the balloons are of the dilatable or the ballonet type. These types are similar in appearance, and both are in production. There are minor variations in fabric, ply, and other details in each type, and such variations will continue until the best features have been determined and adopted as standard. Although the Coast Artillery Corps has





been designated as the using service, the Air Corps has developed the present balloons and their accessories and will continue to be the procurement agency.

Barrage balloons are further classified as "low altitude" and "high altitude." This classification refers to the strata in which the balloons are moored. Determination of the proper proportion of each awaits further experiment and test.

There is still a third classification of barrage balloons according to their mobility. Those operating from a special vehicle in which the winch is a part of the vehicle and the power is supplied by the vehicle engine are designated as "mobile"; while those equipped with a truck from which winch and power plant are demounted for emplacement on the ground are designated as "fixed." In either case, the mobility is relative. Upon inflation, the balloon becomes a bulky and cumbersome device, and lightning dashes from place to place are not possible. Each balloon requires a fairly elaborate ground installation, including a prepared balloon bed and an anchored winch, and each remains inflated for a considerable time before deflation. However, changes of position are not at all difficult, and ordinary tactical procedure indicates that such changes should be made from time to time.

#### ORGANIZATION

Guided by cooperative advice from the Air Corps, based on experience in handling captive balloons, and by British experience in the European war, tentative tables of organization have been prepared\* and are being tested. These tables provide for separate battalions consisting of a headquarters and headquarters battery and three lettered batteries, with a total strength of about forty-five officers and twelve hundred men. These battalions are to be commanded by lieutenant colonels and the batteries by majors. In each of the batteries, a considerable proportion of the enlisted men will be highly graded or rated specialists. The battalions will be numbered in the three hundred series, beginning

with the 301st (which was activated on June 1, 1941).

Tables of basic allowances contemplate that each of the lettered batteries will man thirty-six operating balloons and that there will be a reserve of nine additional balloons in each battery. If further study and experience show that this number of balloons is not entirely suited to the battery as organized or that the organization itself needs modification, changes will be made.

#### THE BARRAGE BALLOON TRAINING CENTER

The Barrage Balloon Training Center was activated at Camp Davis, North Carolina, on May 1, 1941. It consists basically of The Barrage Balloon School including a Barrage Balloon Board, and the 301st Separate Coast Artillery Battalion (Barrage Balloon). The battalion, in which Majors Walter J. Wolfe and Harry F. Townsend, and Captain Gilbert N. Adams held key positions during the period of initial organization, will serve as demonstration troops for the School and will be the parent organization from which, with the addition of graduates from the School, other battalions will be formed in the near future. It is contemplated that these new battalions will be formed at the Training Center with a minimum cadre of key administrative men from the Battalion, with a large cadre of technical officers and enlisted men from the School, and with the remainder of the personnel from replacement centers in such manner that each new unit can begin to function as a trained tactical organization very shortly after its activation.

The Training Center is scheduled to move in November to a new, permanent location, where its balloons will not interfere with commercial, military, or naval aviation, and where facilities for expansion and training will be available.

#### THE BARRAGE BALLOON SCHOOL

The Barrage Balloon School is divided into an Officers' Division and a Division of Enlisted Specialists. Key members of the faculty and staff during the period of organization and establishment of courses are: Lieu-

\*See Pages 312-315.

tenant Colonel Robert E. Turley, Jr., C.A.C., Assistant Commandant; Lieutenant Colonel Porter P. Lowry, C.A.C., Secretary; Lieutenant Colonel Parry W. Lewis, C.A.C., Director, Officers' Division; Lieutenant Colonel Harold Jackson, C.A.C., Director Enlisted Division; Major John J. Johnson, C.A.C., Senior Member, Barrage Balloon Board; Major John W. Dwyer, C.A.C., Supply Officer; First Lieutenant Arthur L. Sanford, C.A.C., Personnel Adjutant.

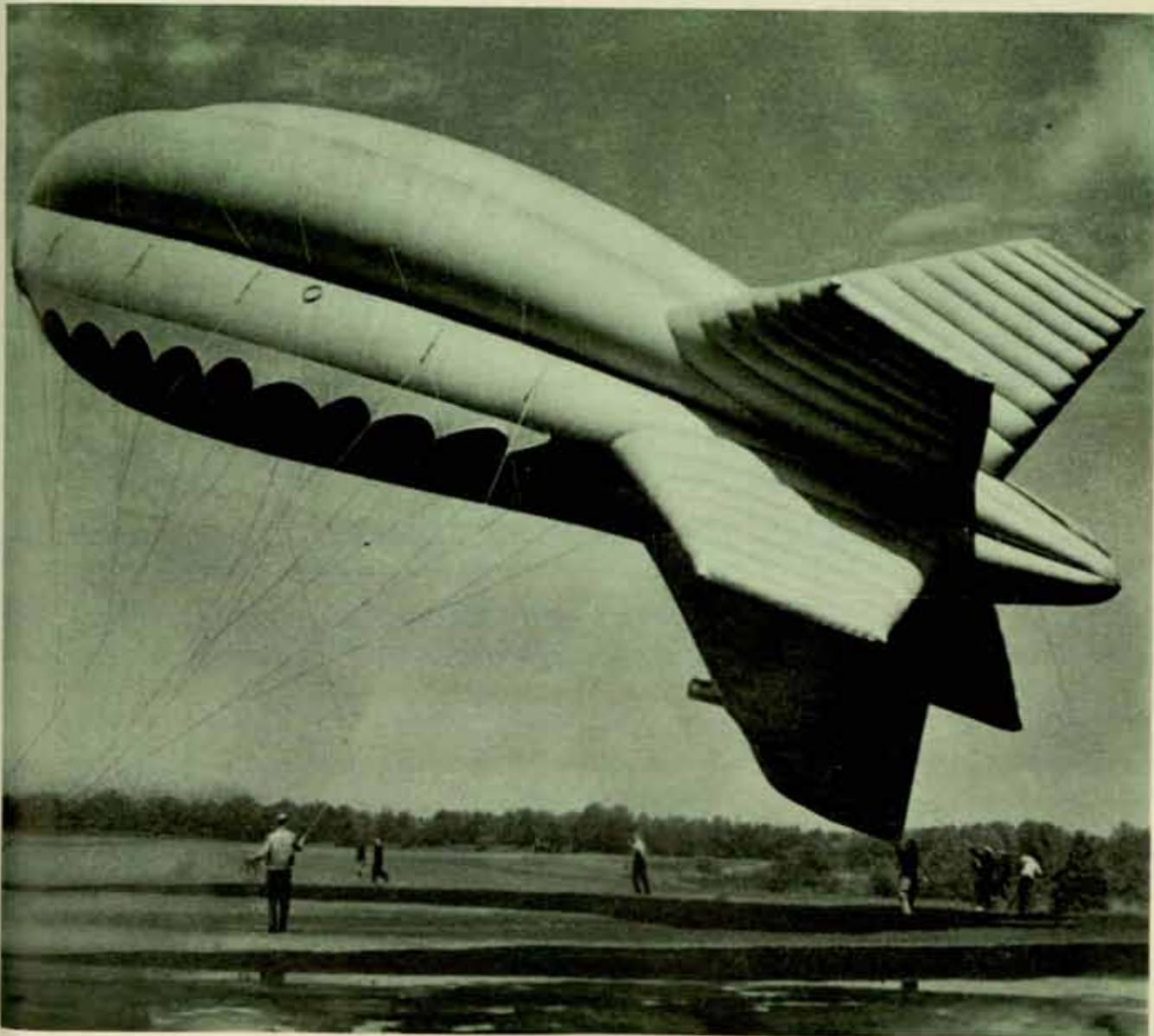
The Barrage Balloon School Detachment consists of 243 enlisted men. The normal student detachments consist of 80 officers and 750 enlisted men. Before the School moves to its permanent location, it is expected that, in addition to "educating" the instructional personnel and the other officers and enlisted men initially at the Training Center, the School will have graduated two classes of officers and enlisted men in the more general courses and one class in the more highly specialized courses. The courses, not all of which are of the same duration, include gas service, weather forecasting, bal-

loon rigging and repair, balloon maneuvering, winch operation and maintenance, communications, and inspection service.

#### THE BARRAGE BALLOON BOARD

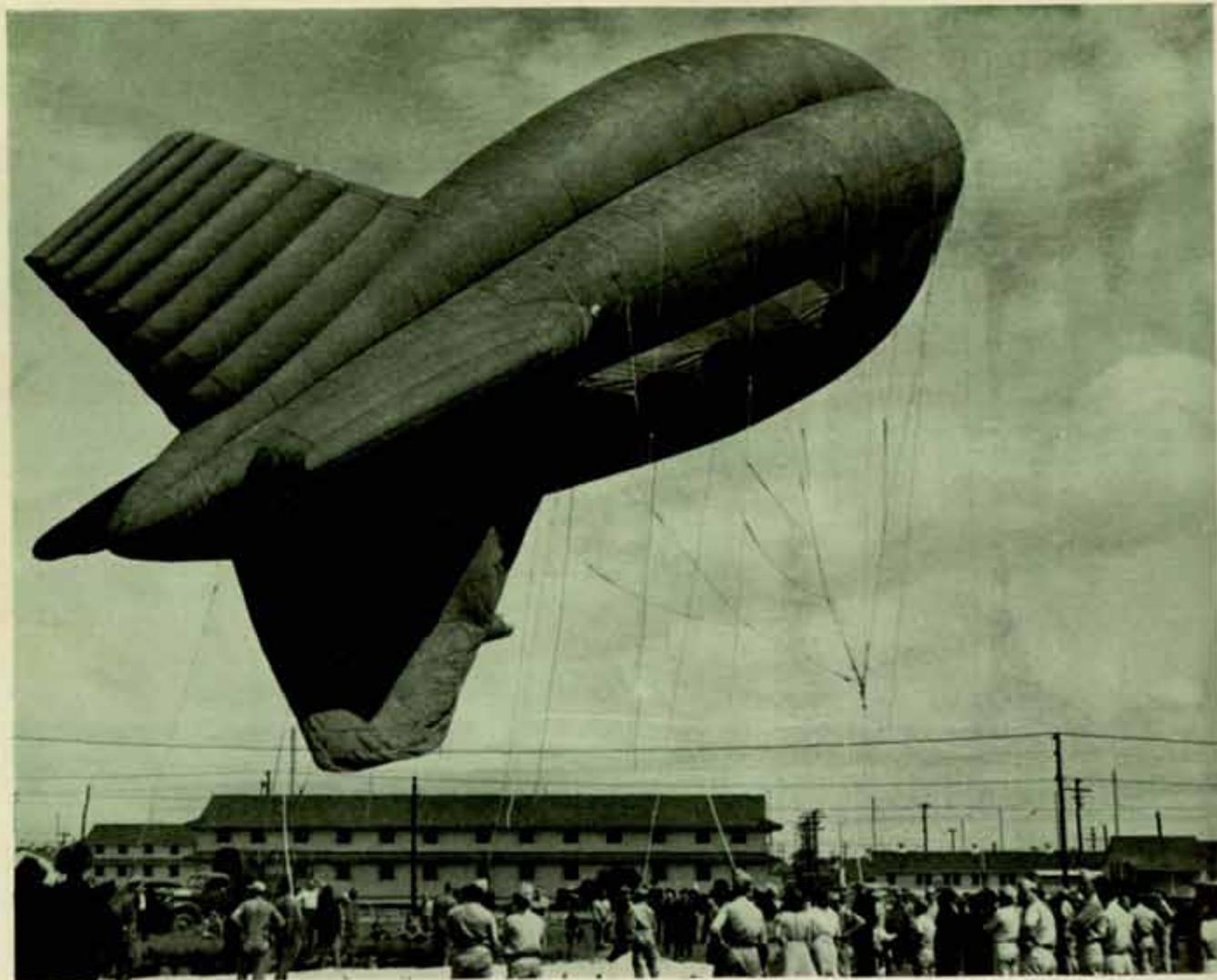
The Barrage Balloon Board, headed initially by Major John J. Johnson, C.A.C., consists of a number of Coast Artillery officers and an experienced balloon specialist loaned to the Coast Artillery by the Chief of Air Corps, who has been most generous in the hearty cooperation with which he is assisting the Chief of Coast Artillery in the upbringing of the new child.

The Board exists to solve problems, and there will be many—problems of organization and tactics, as well as problems of technique. What should be the ratio of high- and low-altitude balloons in a barrage, a battalion, a battery? What should be the ratio of fixed and mobile balloons? Are the tables of organization and the tables of allowances satisfactory? What is the minimum number of balloons necessary to form a thoroughly









The Coast Artillery Corps' first balloon ascension: June 26, 1941

effective barrage about a target of minimum dimensions, of other dimensions? What is the best method of removing the winch from its transporting vehicle and returning it thereto? What lethal devices may be attached to the balloon or its cable? How may lightning protection be best afforded the balloon? What of the fabric, the cable, balloon and winch attachments, surface static, gas purification, warning service, tactical distribution? When these and many similar problems are solved to our satisfaction, the tactics and technique of barrage balloons will be nearing perfection.

#### THE AIR CORPS

This article cannot be concluded without further reference to the generous cooperation of the Chief of the Air Corps. He is placing the 3d Balloon Squadron and one-half of the enlisted personnel of the 1st and 2d Observation Squadrons at the disposal of the Chief of Coast Artillery for such period as may be necessary. These units, under the command of Lieutenant Colonel Michael McHugo, A.C., will explain

and demonstrate the equipment to the personnel of The Barrage Balloon School, will act as instructors during that portion of the first training cycle which covers the education of the first green crop of students and instructors, and will serve as coaches and advisers of the 301st Coast Artillery Battalion.

With its superior research and development personnel and facilities, the Air Corps has developed and tested our present barrage balloons and all the attendant accessories and equipment. The personnel of the Corps have created an enthusiastic interest among manufacturers, with the result that the production of balloons, equipment, and accessories is well under way and is being rapidly accelerated.

#### CONCLUSION

Coast artillerymen of all grades are invited to visit The Barrage Balloon Training Center. Come and see your new relative. Upon closer acquaintance you will be, we think, as favorably impressed with his possibilities and his potentialities as we are ourselves.

# LEADERSHIP

By Brigadier General Edmund L. Gruber

## PART TWO

In my previous talk on the subject of "Leadership" which was given to the last class, I approached my topic from a consideration of the human element in war. I do not intend to repeat that talk to this class because it is printed in the last issue of the *Quarterly Military Review* and will be distributed to you. I shall, however, review briefly the points which I tried to emphasize therein.

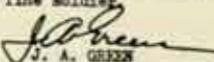
Taking as my thesis the statement in the F.S.R. that (1) Man is the fundamental instrument in war, and (2) Leadership is based on a knowledge of men, I pointed out that the first requisite of a good leader is his ability to understand men, to have knowledge of the behavior and mentality of our soldiers. If you know how your men feel, how their minds function, what their emotions are, of what they are thinking, how they react to various events and conditions, you will have taken a long step toward leadership.

From the individual I went to the group because modern war is based largely on the conduct of many small groups. I discussed the influences, good and bad, that affect the group, the problems of our smaller group leaders, and the things that commanders and staff officers must consider in order to organize and control these groups efficiently. I stressed particularly the fact that the commander must train the staff and the subordi-

.....  
This lecture on *Leadership*, and the one published in the May-June issue of the *JOURNAL*, were delivered by General Gruber at the Command and General Staff School. It is printed by courtesy of the *Command and General Staff School Military Review*.

WAR DEPARTMENT  
OFFICE OF THE CHIEF OF COAST ARTILLERY  
WASHINGTON

General Gruber died May 30, 1941, at Fort Leavenworth. His untimely death, especially at this critical period in the nation's history, was a great loss to the service as well as to his friends. He did everything to the best of his ability, and his ability was unquestioned. The *Journal* is fortunate to obtain this article and the previous one on the same subject which was published in the May-June issue. Those two valuable essays on the important subject of "Leadership" are indicative of the abilities of a great leader and a fine soldier.

  
J. A. GREEN  
Major General  
Chief of Coast Artillery.

nate leaders to look after the welfare of the men so that the first essential condition of group spirit—comradeship—can be welded in the group.

And then I showed that character is the foundation of all leadership. Character plus professional talents go to make up prestige, and this prestige is what really counts because it measures a commander's influence. Prestige, broad tolerance, willingness to accept responsibility and energy in execution, there you have most of the ingredients that go to make up a good commander.

Today I will discuss two more essentials of command

and leadership, namely ability as a trainer and capacity as an administrator. We will investigate in more detail these leadership qualities which you may expect to find in the commanders under whom you will serve as general staff officers. Let us not expect to find these commanders keeping company with such great captains as Hannibal, Marlborough, Frederick and Napoleon. On the contrary, let us look for them among the commanders we know, among the officers who were developed under our great American Democracy, among the leaders who went through the same mill in which you are treading. Genius is a rare and elusive quality, and because it flashes so briefly it often fails to produce lasting results. Good military leadership does not necessarily mean great military genius. Get that clearly in your mind. Otherwise many of you may feel a sense of unreasonable frustration in not finding yourselves superlative.

In our Army we have developed few commanders who had the military genius to rate a niche as great captains in a World Hall of Military Fame. Yet in every major war in which our country has been engaged, we have developed a succession of capable commanders, generals who were practical field soldiers and experienced administrators, leaders who were in close touch with their troops and who inspired confidence in their subordinates. What they lacked in imagination and military genius they made up in common sense, a deep interest in the welfare of their men, and perseverance and energy in the exercise of command. They may not have been in the galaxy of stars but they had their feet on the ground of solid military achievement.

Let us therefore survey our own environment and history to see whether we can find an answer right at home. Demosthenes in his address to his fellow Athenians on the "Duties of the State" gave some homely advice in this respect when he said:

"But see how it was in the time of our ancestors, for by domestic not foreign examples you may learn your lesson of duty. Themistocles who commanded in the sea-fight at Salamis, and Miltiades who led at Marathon, and many others who performed services unlike the generals of the present day, assuredly they were not set up in brass nor over-valued by your forefathers who honored them, but only as persons on a level with themselves."

As our first example, let us take the man whom Henry Lee characterized as "first in war, first in peace, and first in the hearts of his countrymen." Let us consider the administrative and training problems which confronted Washington in the winter of 1777-1778, when, in order to maintain his well-chosen strategic position at Valley Forge, he faced the task of supplying his troops in a place where supply seemed impossible. What hours of anxious planning, of harassed transportation, and of frugal allotment, must have gone into the project of eking out enough food, clothing and equipment to hold that freezing hungry army together. How

difficult must have been the job of drilling and training troops under such circumstances. But Washington was a good administrator. He had shown that in his able administration of the estate of Mt. Vernon which he inherited from his brother. He knew how to get the best out of a good quartermaster, Greene, and a good drillmaster, von Steuben. Despite that terrible winter, "it was with increased numbers and much-increased efficiency that the Army prepared to open the campaign of 1778."

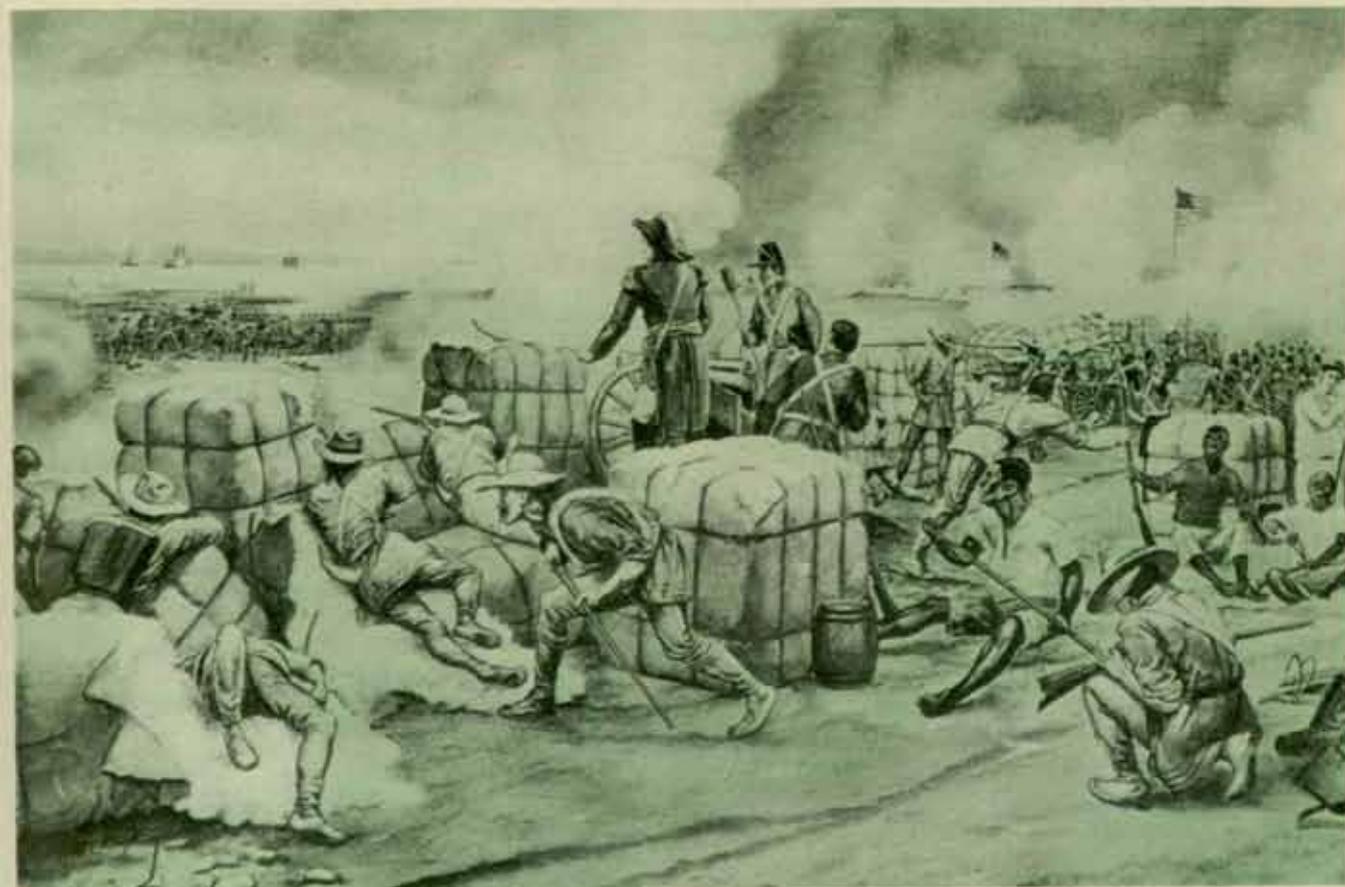
Then, too, there was much planning and administration in getting the Continental Army to a place, and getting it there on time and in condition to fight. Think of the logistics involved in moving a force several hundred miles with depleted and primitive transportation in colonial America 160 years ago. On 30 August, 1781, Washington, with his army in position around New York, received word that Cornwallis had holed up in Yorktown and that De Grasse was in Chesapeake Bay ready to cut the English off by sea. Leaving only 4,000 men behind to guard the forts of the Hudson, Washington set out for Virginia with the remainder of his Army, embarked it aboard the French fleet at the head of Chesapeake Bay, and disembarked it opposite Williamsburg where he was joined by Lafayette and his troops.

Just 28 days after leaving New York, Washington had his army of 16,000 men and his artillery neatly in position investing Yorktown. The American troops that carried those redoubts which were manned by stout British regulars were not the ragged, badly officered soldiery that had been chased out of Long Island four years earlier. They were a well-trained, well-officered, hard-hitting fighting force, built up and disciplined by Washington during the hard years that had intervened. They had marched against time as no army ever marched. There you have an example of planning and training and military administration as exemplified by our first Commander-in-Chief.

Our next example is Winfield Scott—"Old Fuss and Feathers" as his men affectionately called him. As Howden Smith points out, he was the *only* American commander who never lost a battle; a record equaled by only one other great commander, Marlborough.

Scott was an organizer and trainer of troops par excellence. In 1814, General Moses Brown turned over to 29 year old Colonel Winfield Scott a division made up of six infantry regiments and told Scott to train them. "In three months," says a biographer, "Scott welded his division into the best body of soldiers the country had possessed since Smallwood's brigade of the Maryland Line, the pattern for Washington's Continentals." British regulars recoiled when they felt the assault of Scott's division at Chippewa and Lundy's Lane.

After the War of 1812 Scott did for the whole American Army what he had done for his division there on the Canadian border. "He may truly be said to have been the grandfather, if not the father, of the modern Ameri-



Battle of New Orleans

can Army. He impressed it permanently with the stamp of his personality. His training methods, in so far as primary elements are concerned, having never been altered."

By the time of the Mexican War, Scott had given the United States a real army—small, it is true, but a first rate fighting force, thoroughly trained in sound tactics laid down in drill regulations which he had prepared. This fact is not commonly known and appreciated. "The Army of 1846 . . . was emphatically Scott's Army, the product of his genius, trained along the lines he had developed during the War of 1812 and in the period subsequent thereto. . . . The light batteries were probably the best at that time in the world. . . . The three dragoon regiments would have been classed as elite troops in any European Army. . . . The infantry regiments contained an unusual proportion of long-service men, especially in the noncommissioned grades. . . . Their march discipline was superb, their combat efficiency beyond praise. . . ."

Scott's report of his Mexican campaign reads like a textbook on military administration. After the capture of Mexico City, he showed his marvelous talents as an administrator of military government. "He was particularly careful," says Howden Smith, "to deal with the Mexicans as fairly as possible, taking pains to avoid any belligerent or arrogant step which might tend to undermine the precarious prestige of the improvised govern-

ment functioning at Queretaro. He ordered that the courts of the country should be undisturbed, religious places respected, hospitals and asylums guarded, the posts uninterrupted, so far as was within the bounds of military expediency. . . . He could claim, within a couple of months, to have created a higher state of order and public safety than the country had known for years."

These developments in our Army under Scott must be kept in mind when we think of the military exploits of our commanders in the Civil War fifteen years later. Their achievements did not spring full-blown out of nowhere. They had their roots in the fine training and discipline which Scott gave the American Army before and after the Mexican conflict. Scott had trained practically every higher commander who later won distinction fighting either for the North or South. They were all his "young gentlemen," as he called them—Lee and Grant, Sherman and Jackson, McClellan and Beauregard, Meade and Thomas, Bragg and Ewell, Heintzelman and C. F. Smith, the Johnstons, Longstreet and Pickett, Sedgwick and Hunt, Reynolds and Rosecrans, Hooker and Porter, etc., their names are legion—all were his protégés. Well has it been said: "It may not be true that the Duke of Wellington said that the battle of Waterloo was won on the playing fields of Eton and Harrow; but there can be no question that the Civil

War was fought and won on Scott's battlefields in Mexico."

If you study our Civil War, you will also find that ability in training and in military administration marks the competent leader. Henderson termed Lee "undoubtedly one of the greatest, if not the greatest, soldier who ever spoke the English tongue." Consider his talents in organizing and training the Army of Northern Virginia. Consider the administrator's keen insight in picking able subordinates—Jackson, Hill, Ewell, Pickett, Longstreet, Stuart, and others. A poor commander might never have thought them fit, and a jealous commander might have been fearful of their fame. Lee's stature grows in the reflection of his able subordinates.

And then think of how Lee handled his problems of supply—the Federal blockade tight as a hangman's noose around the throat of the Confederacy; short of food, uniforms, iron, cannon and gunpowder, just a thin, ever-diminishing trickle of the things an army needs; while against him stood arrayed the industrial might of the North and the importable resources of the world. Yet Lee kept that army of his going for four years until it was forced to lay down its arms through physical exhaustion and military starvation. Think of Lee as a master strategist and tactician, yes; but to me he looms even greater as an organizer, trainer, and administrator.

Grant did not attain Lee's tactical brilliance but he possessed an overabundance of tenacity and perseverance. As an administrator he had that practical ability to brush aside the insignificant and minor factors in order to lay bare the essentials in stark simplicity. Early in his career (Shiloh) he learned to appreciate the full effect of the moral and material factors in war. He based his training on the influence of these factors. His understanding of their influence enabled him to smash through to victory no matter how grave the emergency.

Grant's leadership was marked by three traits of character: willingness to accept responsibility; singleness of purpose which means clear judgment to distinguish the essential from the minor issues—or as we say here at Leavenworth, from the monkey-meat; and finally relentless vigor in the execution of that purpose. He had that driving energy which invigorates the commander's decision and constitutes the real 9/10ths of an order, that buoyant energy which is reflected in a staff when it hops to it just as soon as the commander's intentions are known.

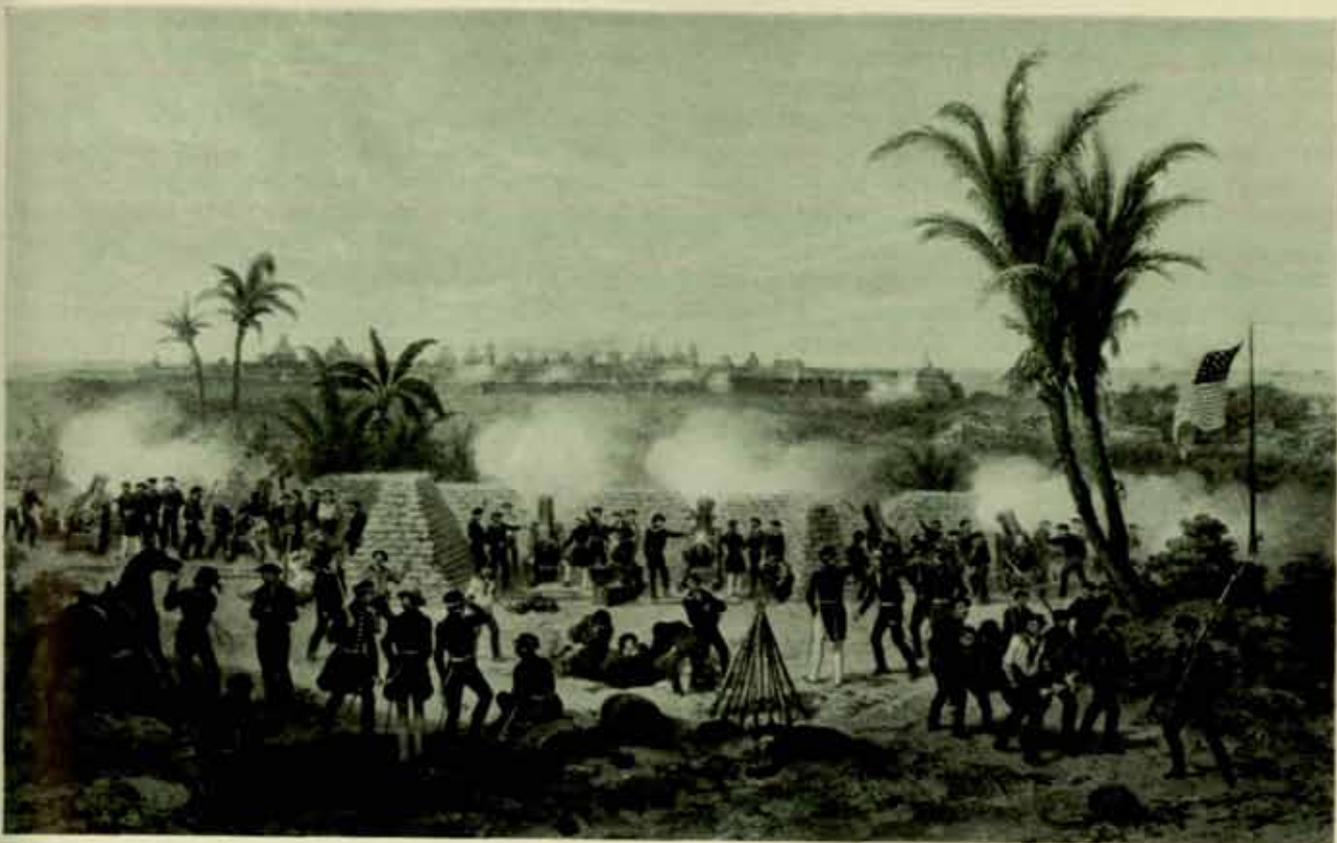
Think of the administrative capacity of the man who in a few months changed the reverse and confusion of Chickamauga into the success and good order of Chattanooga. Think of how quickly Grant reorganized and objectively trained the Army of the Potomac, inspiring it to respond like a well-balanced team to his personal direction while he at the same time exercised supervision as supreme commander of the other armies. Maybe that is why Lincoln, in reply to some critics who de-

manded Grant's removal because of alleged insobriety, asked them to find out what brand of whiskey Grant preferred so he could send a barrel to some of the other Union generals.

Sherman was more skillful than Grant at maneuver but did not quite measure up to him in a slugging fight. What he lacked in pugnacity, he made up in careful planning. He was a master administrator and logistician. His cunning and resourcefulness, especially in supply and administrative matters, would make our modern G-4's look like rank amateurs. His mind was an encyclopedia of practical information, and what he did not care to be burdened with mentally went into that little black notebook of his, something I advise every general staff officer to adopt for himself. When we see the large and numerous staffs, both general and special, in all our headquarters today, we must marvel at the mental capacity of Sherman who combined in himself all the functions of a general staff. He was a perfect example of that coordination which in music we see in a symphony orchestra. The next time you gaze upon his likeness, note the size of his cranium, a mark of the intellectual capacity of a man whose will was as tough as his body. What a fortuitous circumstance that this great commander, this unequalled general staff officer, should also have been the man who in 1881, just 60 years ago, directed the founding of the school at Fort Leavenworth, which was later to become our great general staff college.

We come next to the post Civil War period. In the middle '70's, the Sioux and the Cheyenne were on the warpath. Fighting on horseback, armed with the latest magazine rifles and plenty of ammunition, numbering thousands of warriors under hardy and crafty leaders, they scorned the small mobile detachments sent out against them and felt they could easily elude the larger and more cumbersome forces that tried a pursuit. To catch and destroy them in the spring, fall, or summer seasons, when their movements were free and there was ample grass on the prairies for their horses, was a virtual impossibility.

George Crook, who had just cleaned up the renegade Apaches in the wild and rocky highlands of Arizona, was given the mission of coralling and pacifying the warring Plains Indians. In studying the situation, Crook noticed certain significant facts about these Indians during the bitter winters in Montana, Wyoming and the Dakotas. For one thing, in the winter the Indians' ponies became weak and ill for want of fresh grass upon which to graze. The tribes and their animals were unable to stand the wintry blasts and had to be sheltered in valleys or ravines. That meant that in winter the hostile tribes had lost their most coveted military asset—mobility. Moreover, the Indians themselves were wont to congregate when the cold weather arrived and hibernate throughout the winter in central villages where they had amassed enough food and fuel to serve their collective needs. That meant that the Indians' one and



Bombardment of Vera Cruz

only supply depot, as you might call it, was immobilized and brought within striking distance. Let the winter villages of the Sioux and Cheyenne be found and destroyed—and the blow would break the backs of the tribes for years to come.

Crook planned his campaign carefully. Three problems loomed large. First, he didn't know exactly where the central Indian village was, which meant that armed reconnaissance was necessary; second, his troops needed fodder and supplies just as much as the Indians did, but he had to move his supplies while the Indians had already collected theirs; and, third, the bitter cold was as dangerous as the enemy, which required thorough training in winter combat as well as careful administrative preparations in the way of clothing and equipment. Crook planned and provided a remedy in each case.

On 1 March, 1876, with ten companies of cavalry and two of infantry, Crook left Fort Fetterman for the Big Horn country on the long journey in search of "Crazy Horse" and his Sioux warriors. Crook's plan worked. On 16 March, one of his heavy scouting columns found the Sioux village and surprised it. Only a grievous error on the part of one of the column commanders prevented victory and "Crazy Horse" got away. All through the summer the Sioux and Cheyenne frolicked to their hearts' content; but in November, Crook was ready again and this time he did not fail. His cavalry found the large Cheyenne village near the Powder River, and burst in upon it like a torrent. Over 200 lodges went up in smoke, and over 700 Indian ponies

were captured. The Cheyennes were ruined as a military power. Even "Crazy Horse," the Sioux, implacable warrior though he was, came in temporarily disheartened and gave himself up. Through careful planning, training and military administration Crook had scored decisive victory.

Leonard Wood was another commander whose name will live long as a great military administrator and trainer. His splendid work as military governor of Cuba after the War with Spain, and later as military governor and as governor general of the Philippines, won him the reputation of being without a peer as a colonial administrator. Never was an honor more richly deserved. To see in true perspective the magnificent results attained by Leonard Wood and his colleagues as colonial administrators, one need only compare the flourishing political, social and economic condition of Cuba and the Philippines after 30 years of development under American control with the backward condition of the overseas colonies and dependencies of certain European powers after 300 years of exploitation.

After the Spanish American War, Cuba was in a tumult, wrecked by the long heritage of Spanish misrule, torn by the effects of the war itself, shot through with radical designs for achieving a premature independence. Into this whirlpool of disaffection and unrest, President McKinley sent Leonard Wood. "I want you to go down there to get the people ready for a republican form of government," was all the President said. "I leave the details of the procedure to you. Give them a

good school system, try to straighten out their courts, and put them on their feet as best you can. . . ."

Some day you may get an assignment like that, gentlemen. Wood simply took it in his stride. He worked like a Trojan, 16 hours a day. No project for betterment was too hard to tackle. No detail of local government was too inconspicuous to escape his watchful supervision. At the end of his term as governor, Cuba was well-governed and happy, freed from disease and political and judicial corruption, ready for independence and deeply appreciative of the country which conferred that independence upon her. Said the Secretary of War in behalf of the President in thanking Wood when he had completed his task: "Out of an utterly prostrate colony a free republic was built up. . . . This record stands alone in history, and the benefit conferred thereby on the people of Cuba was no greater than the honor conferred upon the people of the United States."

Wood's career is an epic of military administration. Read it and you will be inspired. But he was also an efficient trainer of soldiers. When the World War broke out he undertook to train the 89th Division at Camp Funston. A flood of draftees began to pour into the camp. Wood had no cots, no blankets, no blouses, no hats, no overcoats. On his own responsibility he bought five thousand suits of blue denim for his men, and scraped up the rest of the equipment as best he could. There were no guns or rifles. He had his men whittle out wooden guns and rifles with which to train. "Train the men, and when they aren't working, give them wholesome recreation." "Do it your own way," he told Major Howland, one of his staff officers, "but do it. I'll back you up."

And then comes the World War and Pershing. He did not grow in military stature overnight. He had served as a staff officer in his early career. He had cut his eyeteeth as a trainer and administrator in the Moro provinces of the Philippines. In 1916 he repeated this work on another delicate mission on our Mexican border. But few saw in him at that time the Army's great "Captain of Industry." Throughout the World War, he more than maintained America's fine record of efficient military training and administration. When he arrived in France and avowed his intention of forming an American Army, a French officer said: "But you have no General Staff. It takes thirty years to organize a General Staff." Replied Pershing quickly: "It never took America thirty years to do anything!" He trained and built the A.E.F. into a fighting machine, which was second to none. From top to bottom it became a strong, powerful, and supple armed force. Even in the externals of military organization, Pershing saw to it that there were no shortcomings. An amazed French general, leaving Pershing's headquarters, exclaimed: "Every time I go in there, I feel—how do you say it—like a Boy Scout!"

He made and executed plans to keep the fighting men supplied continually and in abundance with every-

thing they needed to fulfill their mission. His comprehensive mind embraced all their requirements—everything from laces and dubbin for hobnailed shoes, to cartridges for the rifles of the infantrymen and shell for the great guns of the artillery . . . to sum up, Pershing proved himself a superb organizer, a great business man. To take care of the countless needs of two million men—to arrange provision for four million men—the imagination staggers at the achievement. . . .

Pershing's "S.O.S." was the greatest business organization the world has ever seen. In eighteen months it handled 18,000,000 ship tons of supplies. It imported, repaired and operated thousands of locomotives and freight cars; built 1,000 miles of railway; put up 3,000 miles of telephone and telegraph wire; constructed storage warehouses and terminal facilities to handle a daily traffic of 45,000 tons of freight; cut 200,000,000 feet of lumber and 4,000,000 railway ties; fed and equipped 1,200,000 fighting men in battle; dredged channels, built docks and cantonments; kept motor transport moving; erected automobile shops, one of which alone made over 500,000 spare motor parts and overhauled 11,000 vehicles.

Truly, in modern war, the military commander must be a good trainer of men and an administrator of the first order. He must have an orderly mind which constantly directs the staff to develop and to have executed the plans which he projects. With respect to the staff, he must keep its size down, organize it for efficient operation and train its members for their jobs. But he should never do their work—if he can help it. If he does, he fails to realize that the real purpose of the staff is to assist the commander, and not vice-versa. By the same token, a staff officer who unloads his problems, dumps undigested information, or piles redundant studies on his commander, fails in his job.

A higher commander may get by as a fair strategist and average tactician, but he can never get by as a slipshod trainer or a mediocre administrator. His tactics may be rough in spots but his grasp and understanding of the mechanics of the military profession must be of a high order. The conduct of war is based on the skillful adaptation and application of the technique of modern science. New means are always giving it a different form. These must be appreciated by a commander and properly applied in the training of his troops.

Most wars are fought and *won* under the leadership of competent, painstaking and efficient commanders—falling short of genius, it is true, but always going ahead and reaching their objective by hard work and competent service. Remember, that even your military genius must be assisted by a lot of able commanders who can comprehend the intentions of their brilliant captain, and have the ability and the energy to carry out his decisions. Napoleon's star set quickly when he no longer had at his side Desaix and Lannes, Messena and Berthier. And in history, many a military genius has

been brought to grief when opposed by a steady, tenacious and energetic commander.

In conclusion, let me commend to you the study of our great American military commanders. I have given you a snap-shot of some of them, of those whom I considered outstanding in their times and who exemplified the qualifications which I believe are essential for high command and leadership. But there are many others who also exemplify these qualifications and whose careers will return great profit to you by further study. They have served their country well and have never failed to bring honor and glory to our Army.

Perhaps there are some of you who have heretofore been persuaded to study the lives of the brilliant military stars of foreign armies because they have been labelled with the strawberry mark, "made in so and so." A little of this is all right and I do not decry it, but I believe you will learn far more by studying the careers of our own military leaders. Always keep in mind that you

cannot easily transplant foreign ideas of military command and leadership on the national characteristics of the American soldier, or on our national institutions, or on the traditions of the Army of the United States. We found that out in the World War when our Allies, with the best of intentions, tried to direct the training of our troops, and even sought to parcel out American troops under foreign control and leadership. If you believe in the destiny of this great American Republic, you will oppose every such tendency just as our military leaders did in 1917-1918.

And so I repeat, study our American commanders first because they are the product of the system to which you belong and from which you spring. Since this system has consistently produced able commanders who have led our armies to success in the past, there is every reason to believe that it will do so in the future. And I believe the American people can have every confidence that it will.



# THIS NIGHT WAS

By Lieutenant Edward A. Raymond, Field Artillery

Panama at night is all the guide-books and travel folders say it is. Tropical constellations, pleasant coolness doubly gratifying because of the noonday heat, balmy air that makes walking seem like floating—that's Panama at night.

But this night was different.

From the vantage point of an O-47 observation plane, towing a sleeve target, the constellations, the temperature, and the balmy air were the least of the attractions of the night. Four batteries of 3-inch antiaircraft guns and five searchlights held my attention.

I was in the plane because I was interested. Being an artilleryman, I was curious to see how the "other" artillery, the Coast Artillery Corps, performed. In Panama, *everybody* is interested in the antiaircraft defenses. Panama Canal Department troops are all trained to parry a lightning thrust—perhaps a blow dealt before war is declared. Aircraft are expected to play a big rôle in any attack on the canal. Consequently a high percentage of the troops here are antiaircrafters and they, together with the Air Corps, are exempt from the numerous transit and utilities guards which other line troops perform, and from general construction duties. The AA has had the reputation of being better trained than any other portion of the garrison. Both as an artilleryman and as one whose safety depended on them, I wanted to see just how good they were.

"You nearly missed out on your hop tonight, Sir," the crew chief announced when I arrived at the airport. My wrist watch showed 6:10 P.M.—the flight was scheduled for 6:30. However, the difficulty was not my time of arrival, but the plane itself. There were parts scattered here and there in seeming confusion while a new generator was being installed. The parts seemed to hop back together, and by the time the pilot's coupe appeared around the corner of a hangar our prop was spinning smoothly.

We taxied out onto the apron. A local radio station was interfering on the air. "Noticias del momento . . ." ". . . tuning count . . ." ". . . Los Nazis . . ." "1, 2, 3, 4; 4, 3, 2, 1."

"Rio Hato from 0-7829; Rio Hato from 0-7829. Request permission to take off."

"0-7829 from Rio Hato; 0-7829 from Rio Hato. Runway is clear. Wind NNE, 10 miles. OK to take off."

". . . OK; OK." We were on our way. The pilot started checking in with the Coast Artillery control station near the guns. "A21 from O29; A21 from O29. Come in; come in."

". . . OK, OK. Go to 12,000 and release 3,000 feet of cable. That is all."

We started climbing. These flights were not always just routine; not many nights before a defective cable release mechanism had spilled some cable, tripped a plane taking off towards the ocean, and brought it down with a prodigious splash a few hundred yards off shore. Indians from a fishing village on the beach put out in their cayucas—sharp-pointed dugout canoes—and rescued all three occupants. No doubt when the Indians got there they used the Chiriqui remark for "Get a canoe!"

We were about 2,000 feet up. A small fiery object that looked like a hot rivet fell away from the port side of the engine. I shuddered and concentrated on the coastline below. The Department Training Center is ninety miles from the Canal in the direction of Costa Rica. Between the Continental Divide and the Pacific are broad, open plains, and at the ocean's edge is one of the world's fine beaches: an invitation to the enemy forty miles long. Dusk comes fast near the equator and by the time we had spiraled up to 4,000 feet we became conscious of every smallest point of light below. We saw easily matches lit in the movie queue; thin rings of firelight around the thatched roofs of native huts; and the lights of cities many miles away.

As we droned on with only the hands of the altimeter dial giving any indication of climbing, there crept over me an almost forgotten feeling. For the first time in six months I was cold! It was pleasant, like eating ice cream.

To govern our course during firing a pair of searchlights were used as beacons. One was vertical and stationed behind the guns; the other stretched out horizontally and was directed seaward. The beam tipped the summit of La Venta Rock a mile or so off shore. Even from our altitude we could see dozens of brown pelicans flopping off their rookery there and tumbling into the sky. They are heavily protected by the Republic of Panama, and every AA battery commander hopes to goodness he will not hit many. The birds must be British—they will not give up their island.

The pilot reached 12,000 feet and had the radio operator drop our sleeve from beneath the plane. The cable drum spun furiously until its comptometer showed 3,000 feet. The pilot reported himself ready. Search-

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—————→  
Illustration at top of opposite page: North American O-47A—the type of plane that towed the target. Official photo by U. S. Army Air Corps. (Illustration at bottom of opposite page by U. S. Army Signal Corps.)

# DIFFERENT



lights were raking for us now. A beam crossed the plane. Whew, that light was strong!

" . . . Coming on course."

" . . . Flash your lights."

It was surprising how much illumination our own wing lights produced, and for many seconds after they had been snapped off I could not distinguish the grayish surf-line in the blackness below. Now the searchlights had the sleeve in their beams, and its treated surface glowed like an enormous neon tube.

Great yellow holes suddenly appeared in the night below. This was it! In the middle of each hole were four guns, seemingly pointed right at us. They looked tiny, and not at all terrifying. They shot well, though. Sharp lights about the size of a bushel basket appeared over and behind the sleeve. With the vibrating din of the motor in our ears and with rubber-padded radio headsets on, we heard neither the propelling charges nor the bursts. At almost exactly 3,000 feet away, the plane was barely moved by the concussions. Grey smoke puffs from the shells seemed to draw light from nearby beams and still glowed when the searchlights had gone on ahead. I was sitting back-to-back with the radio operator of the O-47, looking out past the tail. I could see the shooting perfectly. The work was good, but only impressive in a detached sort of a way. I was once acting as forward observer at Fort Sill when a 75-mm. shell landed on top of the dugout I was in. The effects of HE are not entirely a matter for conjecture to me. But still those little lights out there did not look awesome. Then came a burst directly between the plane and the sleeve. Instantly the plane leaped like a bronco stung by a bee. They had hit the cable!

Searchlights followed the sleeve down as it fell slowly into the sea while we started the quarter-of-an-hour's job of reeling in cable and releasing a new sleeve. We had two more runs to make across the field of fire. By now those little lights in the sky looked much more dangerous. What imagination had failed to tell me about them, recollection did. The moral effect of antiaircraft fire on an enemy pilot, I should say, would be pretty low until that pilot had been hit by a fragment or so himself, or had seen another plane brought down. Then it must be intense.

Our next instructions were to make an incoming run in level flight at 10,000 feet. We headed directly towards the vertical searchlight beam, and caught the tracking beams full in the face. The human eye does not adapt itself quickly to violent changes of light and tires under such abuse. It takes a longer *and longer* time to see anything after the beam has passed. Before long, sharp, shooting pains are felt in the head. Furthermore, the arrangement of the beams is dazzling. Seen from the ground, searchlight beams converge on a target, drawing the eyes to one point. From above, the beams of light draw the eyes in many directions at once, and this causes a sense of bewilderment. But surely a little

trouble with my eyes did not explain missing every gun flash and every burst on this run! What was up?

"O29 from A21; O29 from A21. Answer."

"A21 from O29; A21 from O29. Go Ahead."

" . . . What is wrong? Airport flashed my safety lamp."

" . . . Ship OK; ship OK. Will repeat run."

We turned and as we started the runover, flashed our lights. This time all went well. Bursts peppered all around the sleeve. The next run was equally successful. Now all that remained on the program was a diving course.

" . . . Go to 12,000. Dive towards the vertical beam at 1,000 feet a minute." That sounded a lot. I had heard of test pilots having hard times as they pulled out of dives. I knew, too, that a diving target was hard to hit, and required an especially long lead. This part of it was not going to be so much fun. Our lights flashed. By now we must be diving . . . yes, the hundreds hand on the altimeter was going around fast, and the thousands needle was moving perceptibly; but there was no sensation of falling at all. The shooting did not come near us in the plane. A slight feeling of tightness at the collar was all that marked the termination of our dive.

" . . . Mission accomplished. Go home."

" . . . Roger" (Phonetic alphabet for R, received).

"Rio Hato from O-7829; Rio Hato from O-7829. Request permission to drop sleeve."

"O-7829 from Rio Hato; O-7829 from Rio Hato. OK to drop sleeve. Wind NE 16."

I had expected that we would reel in our cable and collect the sleeve from beneath the plane. Instead a heavy ring was sent back over the cable, and this ring cammed loose a clamp inside the sleeve. To the direction and speed of the plane and the direction and velocity of the wind, the pilot had to add the length of time the ring took to travel along the cable before he could gauge the exact moment to release the sleeve. Over the interphone came his order, "Release sleeve." We flew around for ten minutes winding in cable, and watched three B18A's return from a night bombardment mission. Before the airport gave us permission to land it reported, "Sleeve down in jungle to SW of field." Small harm, I thought, if they fail to find it. Had the target been a plane, not one of the courses fired on could have been completed by the aircraft. The sleeve was fit only for rifle patches after that night's work.

It is possible that the AA does not deserve its local reputation of being better trained and more effective than any other troops on the Isthmus. I can only say, after my bull's-eye view of their shooting, that any unit which equals them is prepared to meet all comers.

That was what I learned on my flight over Rio Hato. It was a lesson marked by many thrills and even chills: it was one night in the tropics with no languor in it at all.

# The Philippine Military Academy

By Lieutenant Conrado B. Rígor, Field Artillery, Philippine Army

At Baguio, the garden city of the Philippines, the Philippine Military Academy spreads over seventy acres of pine covered hills. Here, at 4,700 feet above sea level, the future officers of the Philippine Army learn the art of war.

The first Officers' Training School in the Philippines was opened in Manila in 1906 to provide officers for the Philippine Constabulary, which had been organized two years before. The curriculum and the methods of instruction aimed mainly to give the student officer enough instruction in discipline, elementary soldiering and the fundamentals of law and government to fulfill his duties as an officer of the Constabulary.

In 1908 the school gained a permanent site at Camp Henry T. Allen, Baguio, the summer capital of the Philippines. Two six-months classes yearly were graduated. At times it became necessary to abbreviate the courses in order to supply the demand for qualified officers required for the vigorous campaign against out-lawry.

In 1916 the school was expanded and the course extended to nine months. In 1918 the course was extended to two years. Special emphasis was placed on a course in law and government. In 1928 the academic standard was raised to collegiate level and the course was again lengthened, this time to three years. Mathematics, social sciences, English grammar and literature, and Spanish were included in the curriculum at that time.

In 1935, when the National Defense Act was passed, the Constabulary Academy became the nucleus of the Philippine Military Academy. A detailed reorganization affected the administration, curriculum, method of selection of cadets, the uniform, and many other phases of academy procedure. The course was extended to four years—successful completion of the course entitles the graduate to a commission as third lieutenant in the Regular Force of the Philippine Army, and a degree of Bachelor of Science.

In the following year, 1936, the Academy was transferred from Camp Henry T. Allen to a temporary, but more commodious site at Teachers' Camp, Forbes Park, Baguio. The Military Academy relinquishes the use of the camp during the summer to the Bureau of Education, and encamps on a site known as Polo Field, on high ground about a kilometer away from Teachers' Camp.

The National Defense Act authorizes a maximum enrollment of 350 cadets. Three cadets are allocated to each of the ninety-eight Assembly districts in the islands and the rest are appointed at large by the President of the Commonwealth. Admission is by competitive examination; the minimum requirement for entrance is that the applicant must be a Filipino, single, not less than seventeen or more than twenty-two years old; must have completed high school; and must be physically fit.

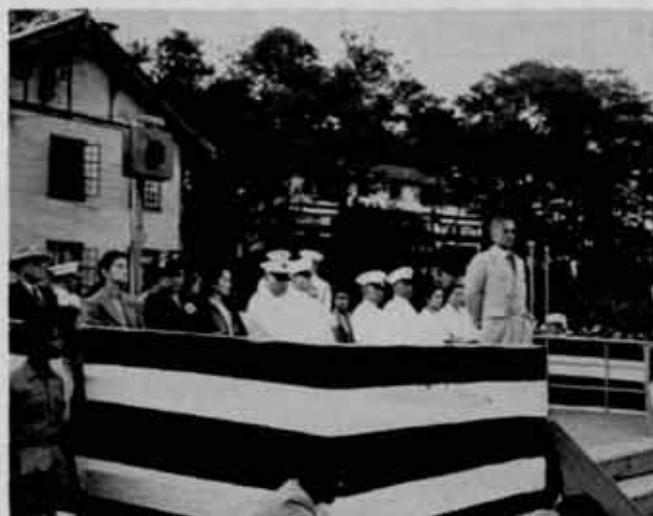
Two types of the competitive mental examination are prescribed, Type A or Type B. The candidate must pass either of these tests with a general average of at least 70% and a rating not below 65% in any subject. Most college students take Type A, which includes College Algebra and Plane Trigonometry. Type B examinees meet with High School Algebra, Plane Geometry, English Grammar, composition and literature, and General History including United States and Philippine History.

A Board of Examiners is appointed from the members of the faculty to frame the questions on the entrance tests. Another board of medical officers conducts a rigid physical examination of the candidates. It might be interesting to note that extreme ugliness of the face is a cause for rejection.

The present pay of the cadets is P960.00 a year. This covers the cadet's subsistence, uniforms and books, as well as other personal necessities. Twelve pesos is set aside monthly from the cadet's pay to build up an equipment fund; a nest-egg for graduation when he will need uniforms and equipment. An additional sum of fifty-six pesos as an additional clothing allowance is authorized for the new cadet the moment he joins the plebe class on April 1.

The first term of academic instruction begins on the first Saturday in June, and ends after the semiannual or written reviews about the middle of October. The second term begins after the reviews, and ends the first week in March. The second week in March is graduation week; summer encampment begins immediately after graduation.

The First Class trip is taken by the new First Class cadets to all army posts, including the Field Artillery Post at Camp Dau, Coast Artillery Training Center at Fort Wint, the Engineer Battalion at Santolan Bar-



Official Photograph, Philippine Army Signal Corps.

President Quezon addresses the graduates

racks, the Air Corps at Zablan Field for observation and instructional flights, and the Offshore Patrol Base at Manila. Aside from this tour, the First Class is also given practical instruction in Signal Communication, cavalry hikes, and combined field exercises in a campsite usually near the sea. During these trips selected cadets are required to stay longer in specialized camps for more intensive practical training in the arm or branch in which they will serve after graduation.

Interior guard duty is emphasized during the academic year, as a means of training the cadets to assume authority and responsibility. Every Saturday morning from 11:00 to 12:00 the Commandant of Cadets and the tactical officers inspect the arms and uniforms of the cadets at a review. Formal guard mount and evening parade are held every Sunday afternoon and holiday afternoon during the academic year, and every afternoon during the summer encampment period. High government officials and foreign dignitaries visiting the Academy are honored with the traditional review of the Corps of Cadets.

Since the inception of the Academy in 1935, three West Pointers have occupied the Superintendent's chair: Colonel Pastor Martelino, CAC (USMA '20); Major Alejandro D. Garcia, FA (USMA '23); and the present Superintendent, Colonel Rafael L. Garcia, Inf. (USMA '16). The Superintendent and Commandant of cadets have been selected invariably from among Filipino graduates of the United States Military Academy. Most of these men have had prior service with the United States Army.

The administration has effected a careful selection of the members of the faculty for each of the four departments, with a view to emphasizing the scholarship standard of the Academy. All officers detailed with the Department of Tactics are specialists in their respective branches; some of them have passed through United States Army service schools.

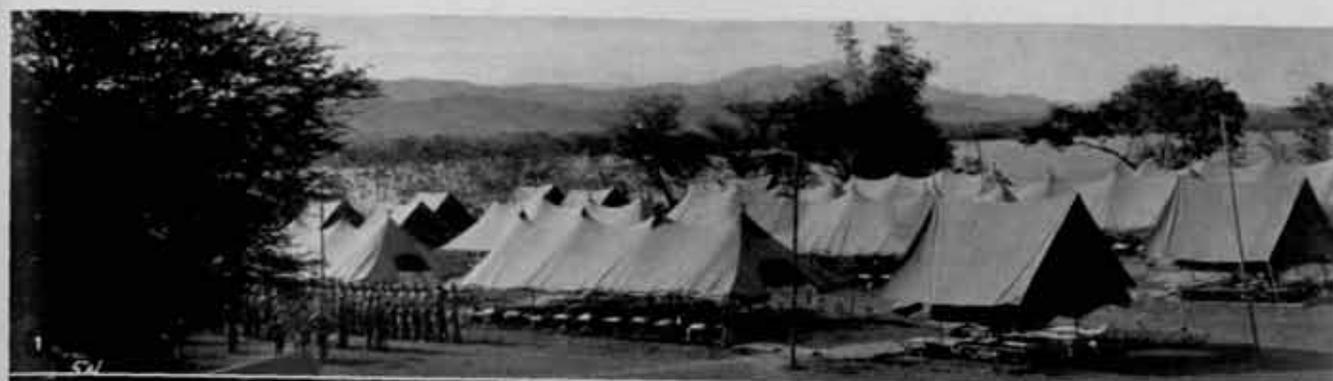
The Corps of Cadets is organized into two battalions of two companies each. Each cadet company is supervised by a tactical officer who has direct charge over the conduct and behavior of the cadets.

The heads of the three academic departments include scholars who have graduated from the state university and American universities of high standard. Most of the assistant professors are graduates of the University of the Philippines and hold commissions in the Regular or Reserve forces.

Cadets recite daily, and are graded for each recitation in each subject. Ordinarily there are no more than fifteen cadets to a section. Resectioning is done fortnightly—section A is made up of the "engineers," and the lowest man in the class finds himself at the bottom of the last section.

Emblazoned with the official insignia of the Academy are the words: *Courage, Loyalty, Integrity* which are the equivalent of *Honor*. From the old Constabulary School down to the present, the honor system has become a tradition, rockhard and zealously guarded by the Honor Code. All cadets, whatever their background may be, are made guardians of the inviolability of this tenet. Where instances of hazing, cheating and serious breaches of regulations have been discovered in the Corps, the violators were summarily dismissed. An honor committee composed wholly of cadets has been instrumental in safeguarding this precious honor code. The stringent discipline and moral training and the high scholarship standard have made this military school one of the greatest institutions that America has ever designed in the Far East. Out of a class of 120 cadets admitted in 1936, only seventy-nine were graduated in March, 1940. From the authorized strength of the Academy, however, the graduating class each year is of a size calculated to build up gradually the commissioned force of the regular establishment to its projected authorized strength by 1946. Out of the four classes already graduated from the Academy, the batch of newly commissioned third lieutenants have been allocated to the Infantry, Field Artillery, Off-Shore Patrol, Coast Artillery Corps, Corps of Engineers, Signal Corps, and the Cavalry. Many of the graduates who qualified for the Air Corps are making good in that branch of the Philippine Army.

The Academy does not neglect the value of extra-curricular activities which are managed by the cadets themselves. The publications, *The Sword* (Seniors' annual) and the *Corps* (Cadet monthly) are media of self-expression among those who have a leaning toward writing and journalistic endeavors. The Dialectic Society encourages cadets with a flair for music, dramatic talents, and literature to show their wares during the traditional festivities of the Corps. A cadet choir sings at Chapel every Sunday morning and the academy orchestra, which is an adjunct of the fifty-piece academy band, swings the latest dance numbers at Saturday night hops and *thé-danzants*. Hacking and jumping



1—Cadets camping at Miramonte. 2—Chemistry Class. 3—Class in fortifications

are also favorite pastimes of the cadets who excel in their equitation classes. The Cadet basketball squad has been rated among the most formidable collegiate teams during the last national cage season.

After barely five years of existence, the Philippine Military Academy has been accredited with both the United States Naval Academy and the United States Military Academy. Filipino appointees to these two institutions are now selected from among the top ranking cadets in the Fourth Class. Under the terms of accreditation at West Point, Filipino cadets who finish the fourth class in this academy with a rating among the top ten per cent are admitted to the United States Military Academy without passing the required entrance mental examination. The candidate so selected will have to undergo another plebe year at West Point and will graduate one year behind his former classmates in the Philippine Military Academy. This discrepancy has been remedied by giving him relative rank along

with his former classmates in the Philippine Military Academy. For Annapolis, under the certificate method, Filipino cadets may be exempted from the entrance mental examination only in those subjects wherein certificates of completion can be presented. There are now four middies in Annapolis and four cadets at West Point who had gone through the plebe year in the Philippine Military Academy with flying colors.

Behind almost a century-and-a-half of military schooling that the United States has experienced, history reckons with the glorious victories which her fighting forces have fought under the leadership of Academy-bred men. How the Philippine Military Academy can uphold its rôle in shaping the destiny of a new nation is a matter for conjecture. In a war-torn world where small nations are betrayed and violated, this country places its trust in a spirit of preparedness which can stand the test only by the timber and finish of its military leaders in any national emergency.



# Winning the Coast Artillery Association Trophy

By Lieutenant Colonel Elvin L. Barr  
Coast Artillery Corps

CONGRATULATIONS STOP PLEASE SEND ARTICLE ON  
WINNING THE COAST ARTILLERY ASSOCIATION TROPHY  
FOR NEXT ISSUE OF THE JOURNAL END

STAHL

How did we do it?

By maintaining a splendid state of training which has always been noted in this regiment since its organization. The Motto of the regiment is "ALWAYS READY" and we *are* ready.

During the few months prior to the target practice season of 1940, the Commanding Officer, Colonel James B. Crawford, and Major William C. Braly, the Executive and Plans and Training Officer, conducted an Officers' Instruction School. Intensive training in preparation for the annual target practice was started January 25th. Every opportunity was given during school session to improve the knowledge of the officers in adjustment of fire. The use of a "hit bag" was a daily exercise in dry run target practice procedure and simulated target practices were conducted by firing with 75-mm. guns. Colonel Crawford was then ordered back to the United States per ETFS.

Colonel Joseph F. Cottrell arrived on the February 14th transport and assumed command of the regiment. Major Elvin L. Barr, arriving on the same transport, took over the duties of Executive and Plans and Training Officer, relieving Major Braly who was transferred to the Harbor Defense Staff.

Officers' School in preparation for firing target practice was continued. The training slogan of the regiment after February 14th was "Accuracy, Speed and Teamwork." Emphasis was placed on "accuracy" of setting data at all times and "teamwork" of all personnel within the firing unit. "Speed" was developed by repetition at drills. Normal fire control matériel—without any special gadgets—was employed by each battery during firing.

The first target practice of the 1940 season was fired by Battery A on February 17th. Lieutenant Robert H. Kessler commanded the battery, which obtained a score of 192.9. The smoothness with which this battery operated during the firing demonstrated the excellence of its training and its efficiency for service. The second practice was fired by Battery A on February 27, 1940. Lieutenant Kessler, again commanding, obtained a score of 168.2. The Battery Commander in his narrative report, stated his "organization was trained by frequent

Artillery drills throughout the year, regular analysis of drills, sub-caliber practices and adjustment problems with target practice ammunition. Unilateral spotting methods were used and range adjustment made by bracketing method. The initial corrections were based on the study of ten previous firings with the same lot of ammunition." Both practices were rated "Excellent."

Battery B, Lieutenant M. M. Irvine commanding, fired its 155-mm. guns, on March 13, 1940. Lieutenant Irvine stated, "The battery employed the standard method of horizontal-base fire control and bracketing method of adjustment. Plotting intervals of 20 seconds were used and predictions were made 40 seconds ahead to permit accurate laying of the guns. Nothing unusual occurred during the firing. The battery functioned smoothly with the resultant score of 173.3." This practice also was rated "Excellent."

Battery C, Captain O. H. Kyster, Jr. commanding, fired its 155-mm. guns, on March 14, 1940. The battery commander's methods of training for the target practice included the following:

"Gun Pointers were trained by means of a sight mounted on the right trunion of each gun so the battery commander could coach and train the gun pointers personally. Spotters were required to spot all other battery practices held at Corregidor, prior to the service practice of this battery. Spotting for this practice was obtained by flank spotting. Verbal instructions in English to Philippine Scout soldiers are frequently misunderstood, therefore detailed written instructions, as to duties and action to be taken in case of emergency, were used to train men in key positions. These instructions included the accuracy required from each man in order to obtain hits. This method created considerable interest among the men by showing the necessity for teamwork. The practice was well conducted and showed an excellent state of training of the personnel." This battery obtained a score of 184.0 and was rated "Excellent."

Battery D, Lieutenant Thomas H. Harvey commanding, fired its 155-mm. guns from its assigned M-Day position on March 15th. Nothing unusual occurred to mar the smoothness and speed of the battery teamwork operation during firing. The 1st Indorsement to the report of this practice stated in part, "Twelve shots out of thirty missed the "bow on" target due to deflection

errors which are believed to be directly charged to the inefficient sight used." The 2d Indorsement forwarding this practice announced in addition that "this organization conducted a very creditable practice march and rail movement on the mainland of Luzon in connection with Philippine Department Maneuvers. The unit, although not intended for service on the mainland, is well trained in mobility as well as fire power." This practice was likewise rated "Excellent" with a score of 184.6.

Battery E, Lieutenant G. H. Crawford commanding, fired their practice with 6" fixed guns on February 20, 1940. The Battery Commander stated in his narrative report, "This practice was the first one ever fired by Battery E as a unit and necessitated the training of many new men for key positions." The Battery was classified as "Very Good" with a score of 137.20.

Battery F, Captain Jose E. Olivares commanding, fired their target practice with 6" fixed guns on February 27th. Battery F and Battery E compose the Guard Battalion and normally perform Guard Duty. Previous target practices were fired as a composite battery. This practice was the first that Battery F fired as a unit. The

difficulties of training key men and battery personnel after performing the normal day of guard duty are obvious and the results obtained speak for themselves.

The Harbor Defense Commander in his forwarding indorsement stated for both the Battery E and Battery F practices, "The results obtained demonstrate that the battery is well trained for artillery work and would be a valuable asset in time of emergency." Battery F was classified as "Very Good" with a score of 119.9.

#### RÉSUMÉ

Battery A—February 17, 1940	.....	192.9
A—February 27, 1940	.....	168.2
B—March 13, 1940	.....	170.3
C—March 14, 1940	.....	184.0
D—March 15, 1940	.....	184.6
E—February 20, 1940	.....	137.2
F—February 27, 1940	.....	119.9

Our Average Score ..... 165.3

And that is how it was done.



## Dive Bomber Tactics

A few words are necessary on the tactics employed by the power-dive bombers in attacking objectives protected by antiaircraft artillery. A group of five airplanes, two of which are power-dive machines, approach the target at an altitude closely within maximum range of the antiaircraft fire. The power-dive bombers then immediately descend upon the target, acting as if they had been hit by the antiaircraft fire below. The fire of the antiaircraft artillery is then concentrated on the airplanes continuing their flight—meanwhile the power dive bombers complete their bombing missions.—*Krasnaya Zvyedza*, Moscow.

# Tactical Training of HD Troops in the Third Army

*Editor's Note:* The directive *Tactical Training of AAA in the Third Army*, which ran in the last JOURNAL, was received gratefully by many officers in the field. This article provides the same information for Harbor Defense troops. While the scope and objective of each exercise is indicated, the local commanders prepare the exercise in detail, and supervise the execution. Pertinent extracts of the directive and the exercise follow.

## HEADQUARTERS THIRD ARMY

Office of the Commanding General  
Smith-Young Tower

AG 353—C.A.(HD) San Antonio, Texas.  
April 16, 1941.

Subject: Field Training, Harbor Defense Troops.

\* \* \*

1. Reference is made to:

- a. Letter, GHQ, 1-4-41, subject: "Combined Training," file AG 353, and 1st Ind., this headquarters, 1-9-41.
- b. Letter, GHQ, 1-31-41, subject: "Advanced Training, C.A. Units," file AG 353 A.A.
- c. T.M. No. 6, c.s., this headquarters.

2. The prescribed training, after completion of Mobilization Training Programs, will include in order of priority:

a. Intensive training for, and conduct of, artillery target practices in accordance with T.M. 2160-35 and 1941 Supplement to T.M. 2160-35, "Instructions for Coast Artillery Target Practices, 1941," W.D., 9-28-40. Early training will stress:

- (1) Complete battery drill, including the operation of all stations and ammunition service.
- (2) Proper communication procedure.
- (3) Frequent analysis of drill per par. 22, T.M. 2160-35, and the elimination of errors in drill.
- (4) Subcaliber firings and analysis thereof.
- (5) Preparation of Target Practice records and reports.

b. Tactical training in the proper employment of fixed and mobile coast artillery in seacoast defense, in accordance with principles laid down in F.M. 4-5, "Seacoast Artillery, Organization and Tactics." Stress command procedure, com-

munications, identification of friendly and enemy vessels and airplanes, and proper economy in the expenditure of ammunition. This training will include:

- (1) Tactical operations, *without supporting troops*, involving the employment of harbor defense garrisons in accordance with local defense plans against all forms of attack; gas, water, land, air and sabotage activity.
- (2) Tactical operations, as in (1), above, in harbor defense in cooperation with supporting land troops, and/or naval forces actual or assumed.

x. Night exercises held frequently until proficiency of drill has been achieved; thereafter, a minimum of two night exercises per month.

3. a. Inclosure No. 1 includes the required exercises for Harbor Defense troops; Inclosure No. 2, those for Coast Artillery 155-mm. Gun regiments. Each inclosure includes a battalion or group series, and a harbor defense or regimental series. Exercises may, and should be, repeated. The assumption of additional harbor defense troops and equipment should be avoided.

b. The exercises should be utilized as a basis for testing and perfecting:  
Standard Operating Procedure.

Local defense plans, pertinent, including the general alert plan and anti-sabotage measures.

Such plans should be prepared in up-to-date form, prior to the initiation of the exercises.

4. a. The director will prepare the exercise and supervise its execution.

*Exercise*

*Director*

- |                          |                             |
|--------------------------|-----------------------------|
| (1) Harbor Defense Group | Regimental<br>Commander     |
| (2) Harbor Defense       | Harbor Defense<br>Commander |
| (3) H.D. Mobile Regiment | Regimental<br>Commander     |

b. *Critiques.* Critiques should be held not only to draw definite lessons from the results of the exercise just completed, but also to orient subordinate commanders and the staff for the next exercise.

5. Exercises will be prepared to provide training for all elements, including supply, evacuation, and administration. Normal requirements in com-

munications, records, and reports will be carried out fully.

6. *Aviation*: For exercises H.D. 4 and H.D.M.R. 6, request for one photographic airplane may be made to this headquarters, to reach this office one month prior to its use.
7. *Reports*: Brief reports are required. They should be largely factual. It is desired that they be completed with minimum delay and forwarded in number to provide two copies for this office and one copy for each intermediate headquarters. When reports involve confidential or secret matters, they will be treated accordingly.

By Command of Lieutenant General BREES:

\* \* \*

*Inclosure No. 1*

HARBOR DEFENSE GROUP EXERCISE

*H.D. G1 Type*: A day alert; movement to artillery positions; employment against simulated naval attack.

*Time*: 1 day.

*Purpose*: To test.

- (1) Speed and proficiency in manning armament.
- (2) Communications.
- (3) Execution of artillery mission.

*Procedure*: At an unexpected alarm, all elements of the group will occupy assigned artillery positions. When the group has reported ready for action, a naval attack will be represented. The Director will issue appropriate orders requiring tactical decisions, transmission of orders and simulated firings by each battery.

*Reports required*:

- (1) Strength report by unit; officers and enlisted men.
- (2) Time for each battery and the group from the alarm until ready for action.
- (3) Pertinent recommendations.

*H.D. G2 Type*: A night alert; artillery employment against simulated naval attack.

*Time*: 1 night.

*Purpose, Procedure and Report*: Same as H.D. G1.

*H.D. G3 Type*: An alert; occupation of war shelter by personnel; establishment of field installations; simulated firings against naval attack; local defense against raiding parties, land or water; anti-sabotage detection and prevention.

*Time*: 2 days—1 night.

*Purpose*: Training and test in execution of local defense plan.

*Procedure*:

- (1) All personnel will move to and oc-

cupy war shelter in readiness for hostile action over a prolonged period. Essential shelter against air or naval bombardment when not existent will be staked out. Plans for such shelter and obstacles will be prepared. This is a deliberate occupation of position in advance of enemy activity in the area.

- (2) Under conditions simulating loss of contact with higher CP's one night and one day phase will follow in which the director will require action by the group against varied hostile operations; naval, land, air, gas, sabotage. Other available troops in distinctive uniform will be utilized to represent hostile raiding and sabotage parties.

*Reports required*:

- (1) Strength report by unit; officers and enlisted men.
- (2) Summary of operations.
- (3) Pertinent recommendations.
- (4) Copy of alert plan.

*H.D. G4 Type*: An alert; employment in land defense.

*Time*: 2 days and 1 night.

*Purpose*: To test training in execution of local defense and adequacy of the plan to meet all conditions.

*Procedure*: 1st day—An alert; physical occupation of war shelter by all personnel. From these positions the battalion to be moved by night to meet either a land attack or landing party; employment in defense, delaying action, or counter-attack.

*Reports required*:

- (1) Strength report by unit.
- (2) Summary of operations.
- (3) Pertinent recommendations.

HARBOR DEFENSE SERIES

*H.D. 1 Type*: Command Post Exercise.

*Time*: 1 day.

*Purpose*: To coordinate and develop command technique.

*Procedure*: All CP's and OP's manned; communications established. By means of represented hostile action, and by prepared messages, situations will be created which require reports, decisions, and orders. Develop command and staff procedure in communications, operations, supply, evacuation, and administration. Perfect blank forms and communication procedure for tactical reports. Utilize all communication agencies.

*Reports required*: Copy of standard operating

procedure on communications, to include prescribed blank forms.

H.D. 2 *Type:* General alert.

*Time:* 1 day.

*Purpose:* To test and develop alert plan.

*Procedure:* All units occupy alert positions, establish kitchens, field installations, communications, and defense against any form of hostile activity. By represented hostile action, prepared messages, and appropriate orders, the director will create situations to require the employment of each element of the command in its initial mission in the defense plan.

*Reports required:*

- (1) Unit strength reports.
- (2) Time from alert until each group is ready in position.
- (3) Copy of the alert plan.
- (4) Pertinent comment and recommendations.

H.D. 3 *Type:* Simulated Battle Practice.

*Time:* 1 day and 1 night.

*Purpose:* To train all elements in coordinated artillery action.

*Procedure:* Supporting troops (assumed) take over land defense. All elements occupy artillery positions fully. Simulated battle practices by day and night against naval attack represented by available boats. Situations involving matériel and communication failures, casualties and losses, will be injected to require remedial action, and emergency solutions.

*Reports required:*

- (1) Unit strength report.
- (2) Summary of main situations and action thereon.
- (3) Copy of required staff reports.

H.D. 4 *Type:* War condition period.

*Time:* 3 days and 2 nights.

*Purpose:* To test training in a continued defense.

*Procedure:* All elements occupy initial war positions, establish all field installations and communications. The director will create a series of situations by represented hostile action, prepared messages, and appropriate orders to require tactical decisions and action against hostile air attack, sabotage, landing raids, landing operations, and naval attack. Simulated losses and reorganization of the defense. The period may be broken by an inactive period on second day.

*Reports required:*

- (1) Unit strength report.
- (2) Summary of main situations and action thereon.

(3) Copy of the defense plan.

(4) Harbor Defense staff officers reports.  
*Inclosure No. 2*

#### MOBILE HARBOR DEFENSE UNITS (155-MM. GUN) BATTALION SERIES

H.D.M.B. 1 *Tactical loading.* 1 day. Develop and practice the tactical and systematic loading of each vehicle, to include personnel, equipment, weapons, ammunition (or weight and space equivalent), inspection; tactical march. The exercise to be developed into an alert plan for the unit to the end that it may take the field for extended field service in a minimum time, without confusion, fully equipped, and uniformly and neatly loaded.

*Notes:* By battalion or by battery, depending upon availability of vehicles. Vehicles assigned as per T/O as nearly as practicable. Vehicle capacity checked by weight and space. Determine an average weight for one man and equipment, and base all weight computations on that average.

*Reports required:*

- (1) Strength report by unit; officers, enlisted men and vehicles.
- (2) Summary of loading plan.
- (3) Ammunition loads for each battery and combat train.
- (4) Pertinent recommendations.

H.D.M.B. 2 *Daylight march on highway.* 1 day.

*Develop:*

- (1) Tactical march formation. (Chap. 11, F.M. 4-5).
- (2) March control and discipline. Stress:
  - a. Clearance of road for other motor units on the march or at a halt.
  - b. Exercise of active control by all subordinate commanders down to and including the man in charge of each vehicle.
- (3) Methods of maintaining route over unfamiliar roads.
- (4) Security measures and anti-mechanized defense.
- (5) Utilization of automatic weapons and rifles for AA protection on march.
- (6) Motor maintenance.
- (7) Rapid refueling.

*Notes:* This exercise should serve as a basis for developing standard operating procedure to be adapted by the unit governing motor movements under varying conditions. The following points should be considered and checked:

- (1) Take periodic synchronized time checks against mileage, both at the head and tail of column, and compute average length of column per vehicle.
- (2) Check time length of column at various points to include the starting point, difficult points in the road, and entrance to camping area, and compute average time per vehicle in seconds.
- (3) Seek minimum time length of column, consistent with appropriate march dispersion for A.A. protection. Avoid gaps in column by requiring drivers to close up where progress is slow (at start, on hills, muddy points, sharp turns). Prescribe a maximum speed for regaining lost distance and require same effected gradually.

*Reports required:*

- (1) Strength report by unit; officers, enlisted men and vehicles.
- (2) Summary of results.
- (3) Pertinent recommendations to include normal speed on open highway, and normal distance between vehicles.

*H.D.M.B. 3* Night march without lights. 1 night.

Notes: Make arrangements with local authority to minimize interference with civilian traffic. Allow no headlights in column. Insofar as practicable, avoid roads where headlights are encountered. If tail lights or stop lights are permitted, cover same to dim.

*Reports required:* Same as H.D.M.B. 2.

*H.D.M.B. 4* Occupation and organization of positions. 1 day and 1 night. Deliberate occupation and organization of previously semi-prepared harbor defense positions to include all weapons, communications, CP's, kitchen, bivouac, truck park, camouflage of positions, dummy positions. Naval raid, assignment to targets and simulated battle action.*Reports required:*

- (1) Strength report by unit; officers, enlisted men and vehicles.
- (2) Plan of defense.
- (3) Time from arrival to "ready for action."
- (4) Time required to establish telephone communications.
- (5) Time required to complete fully the organization of position.
- (6) Pertinent recommendations.

*H.D.M.B. 5* Type, time, and purpose same as in H.D.M.B. 4, but time is not available for deliberate preparations or reconnaissance. Withdrawal from position.  
*Reports required:* Same as H.D.M.B. 4. Should be held in different site than H.D.M.B. 4.

*H.D.M.B. 6* Local and Beach Defense. 2 days and 1 night. Exercise in local defense of batteries and beach to include measures for local security and defense of installations, antiaircraft protection, camouflage, defense against and use of chemicals, and offensive and defensive operations against landing parties. Enemy forces to be physically represented.

*Reports required:*

- (1) Strength report of unit; officers, enlisted men and vehicles.
- (2) Summary of operations.
- (3) Pertinent recommendations.

*H.D.M.B. 7* Tactical Railway loading and unloading. Develop and practice loading of battery, fully loaded as in H.D.M.B. 1, on railroad cars. Limited amount of funds is available upon request to Third Army for hire of necessary flat cars. Develop technique loading from ramp, or using a flat as ramp, bridging cars, securing of load. Due to limited funds available, all key men in battalion should physically participate, as composite unit. This test should be used as a basis for a regimental plan for railway movement.

*Reports required:*

Pertinent findings and recommendations. Copy of battalion loading plan for all rail movement.

## REGIMENTAL SERIES

*H.D.M.R. 1* Daylight March. 1 day. Similar to H.D.M.B. 2.

*Reports required:*

- (1) Strength report; officers, enlisted men and vehicles.
- (2) Summary of results.
- (3) Copy of the developed standard operation procedure for motor movement.

*H.D.M.R. 2* Night March without lights. 1 night.

*Reports required:*

- (1) Strength report; officers, enlisted men and vehicles.
- (2) Summary of results.
- (3) Copy of the developed standard operation procedure for motor movement.

*H.D.M.R. 3* C.P.X. 1 day. Occupation of all CP's and

OP's and installation of communications. Naval targets to be represented. Stress: Communication, orders, staff operation, records and reports.

*Reports required:*

- (1) Brief summary of exercise.
- (2) Copy of S.O.P. for communications, including prescribed report forms.

*H.D.M.R.* 4 Occupation of position. 2 days, 1 night. Deliberate occupation and organization of positions in harbor defense. Naval raid, assignment to targets and simulated battle action. Withdrawal from position.

*Reports required:*

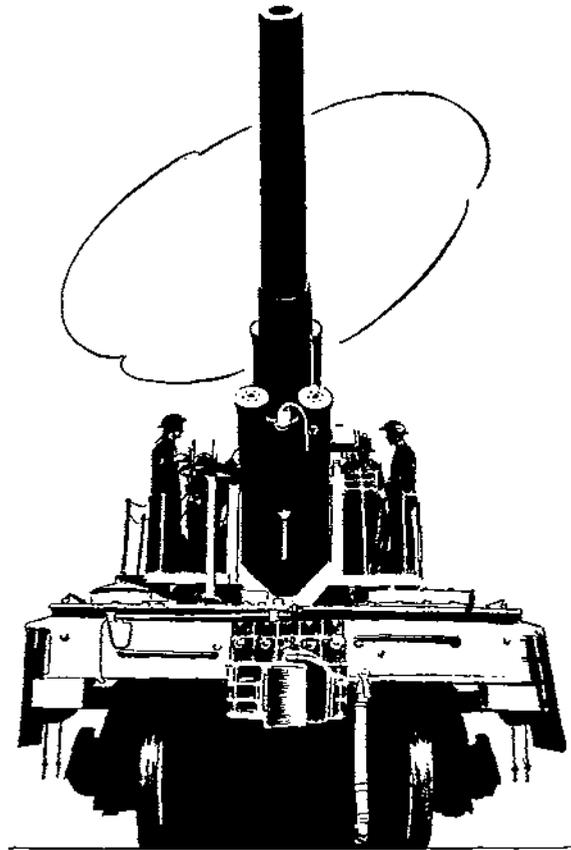
- (1) Strength report; officers, enlisted men and vehicles.
- (2) Brief summary of defense plan.
- (3) Pertinent recommendations.

*H.D.M.R.* 5 Field exercise. A march in two columns; light and heavy; establishment of a defensive coastal area at destination; employment in defense; return to home station.

*Period:* To be determined by the director. Plan for the exercise will be submitted to this office for approval, together with estimate of costs for the various necessary purposes.

*Reports required:*

- (1) Strength report; officers, enlisted men and vehicles.
- (2) Narrative summary of events.
- (3) S-1, S-2, S-3, S-4 reports.
- (4) Defense plan of area occupied together with appropriate maps.
- (5) Pertinent recommendations.



# Any Point in the Sky<sup>\*</sup>

By Captain K. C. Smith, Coast Artillery Corps

There is considerable indication that we are becoming wedded to certain points in conducting trial fire. Inertia is the primary cause of such an unholy union. Through repeated use, we have memorized the firing data and the coordinates of these certain points. They pop up if we so much as think of trial fire. Nicely printed trial shot charts have been at our disposal. They carry the elements of data which popped into our minds; they are graduated to a convenient scale; and they show lines of reference of known accuracy. We believe that the "standard" trial shot points are so selected that deviations of bursts around them will give corrections that hold fairly well all over the field of fire. Then we lose sight of the fact that they do not hold to the degree of exactness that we would like to achieve in opening on a target no matter where it comes in.

If we have reasonable assurance that targets are coming in at altitudes that vary only a few hundred yards; and the weather, the state of our training, and the situation is such that we believe that we can open really effective fire at extreme range; then it would seem in order to conduct trial fire at extreme range for the expected altitude. Possibly experience has shown that we will not be able to open effective fire at extreme range. Then let us conduct trial fire at the point which has the range of the limit of our accurate fire under the conditions existing at the time, and the habitual altitude which may have been well established. Even if targets can not be depended upon to come down the groove, it is possible to select trial shot points which are more applicable to a local problem than the standard points.

Such considerations do not lend themselves to elaborate charts printed for certain standard points. It is safe to assume that the availability of such charts is purely a peacetime condition. If the use of such charts is carried too far, it is not beyond the limits of imagination to think of inertia-ridden batteries being unable to conduct trial fire because they are fresh out of trial shot charts for TSP No. 17, and at trial shot point number seventeen there is the only hole in the sky where good observation can be expected.

It is believed that the *Information Bulletin of the Coast Artillery School* will carry a discussion of trial shot chart construction in a forthcoming edition. The method advanced will be speedy and simple. It will also be accurate to the required degree.

However, there is a method of solving the entire problem without a chart, using only the Crichlow Slide Rule. It should not be attempted by those who are other than extremely proficient in the manipulation of the slide rule. It should not be attempted by those who lack, or have only latent ability to visualize all the elements of the trial shot problem in the sky and on the plane of the ground. The method has been evolved for those who have a burning drive to swing slide rule arms at every opportunity, and the ability to swing them while asleep. Withal, they should be willing to draw a simple sketch, even if it is only done with a pointed stick in the dirt.

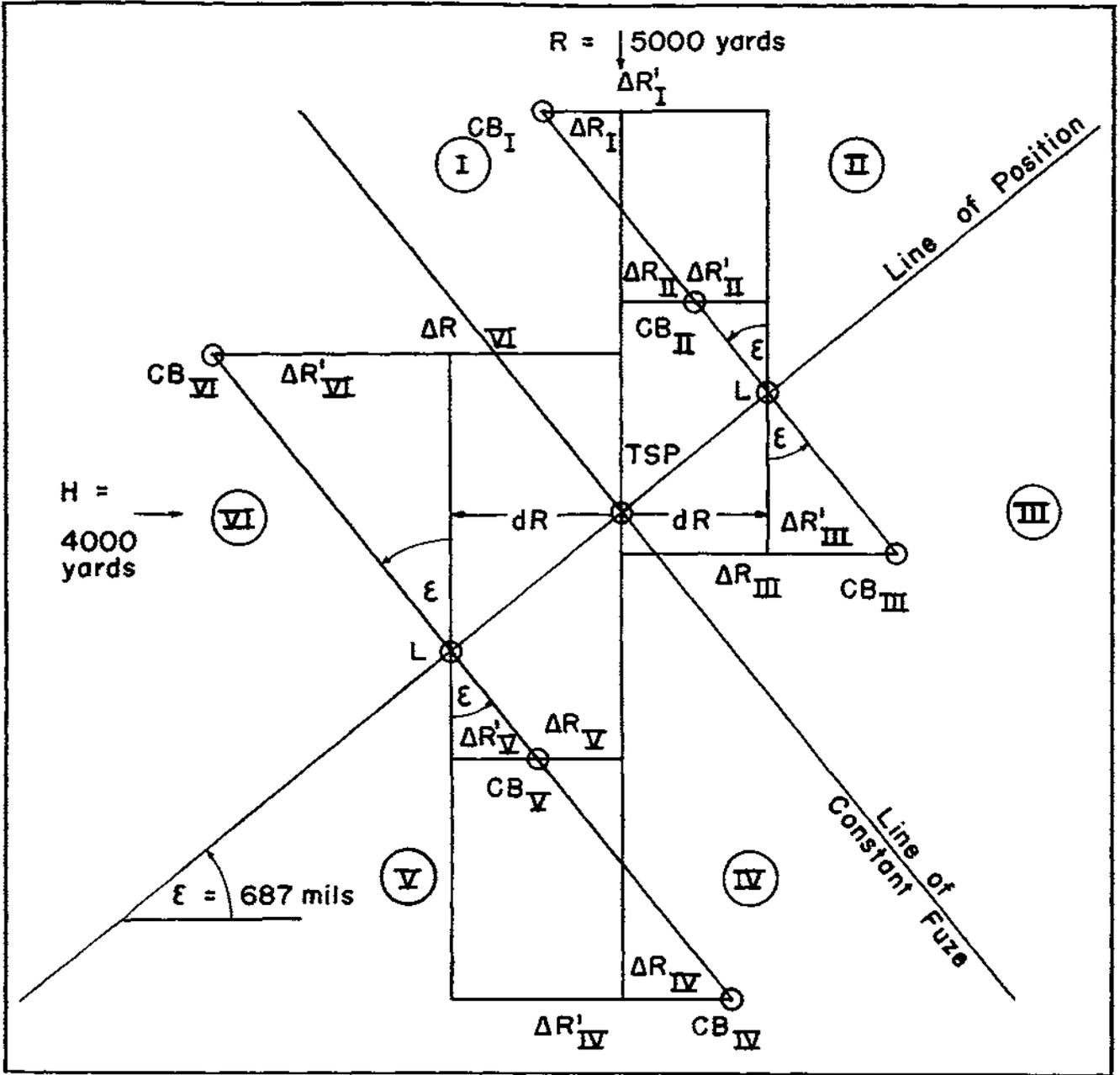
In the diagram used to illustrate this method, six sectors have been set up about the trial shot point. This point has been arbitrarily selected for Altitude (H) = 4,000 yards, and Horizontal Range (R) = 5,000 yards. These sectors have been designated by Roman numerals. Six centers of burst have been indicated, one for each sector, with the proper Roman numerals as subscripts. These centers of burst represent any point in the sector to which they pertain. They have been plotted in two lines of three points each to keep from cluttering up the diagram.

The deviations of these CB's from the TSP in horizontal range, prior to correction to the line of position ( $\epsilon$ ), are indicated by  $\Delta R$  with the proper subscript in Roman numerals. In all cases the value of  $\Delta R$  is the difference between R,TSP and R,CB. The value of R,CB is determined in accordance with standard practice as outlined on the back of the slide rule. This is also true of the solution of the trial shot data problem, and the solution of the lateral and vertical corrections.

$\Delta R'$ , with the proper subscript, is the deviation in horizontal range that comes about through vertical correction of the CB to the line of position. In all cases this point is designated as "L." From L, the horizontal range correction ( $dR$ ) will bring the CB to the TSP. All the lines CB,L have been constructed perpendicular to the line of position, and all other lines of reference are vertical and horizontal.

By use of the slide rule, with H = 4,000 and R = 5,000,  $\epsilon$  has been established as 687 mils, and slant range (D) as 6,403 yards. Other pertinent points where the angle  $\epsilon$  has come into being through construction of lines of reference are so indicated. In all the small similar right triangles, one side is proportional to H, one to R, and the hypotenuse is proportional

\*Slide rule determination of trial fire corrections.



to D. The value for any hypotenuse may therefore be expressed:

$$CB, L = .001 \times D \times d\phi$$

and in the small similar right triangles:

$$\sin \epsilon = \frac{\Delta R'}{CB, L}$$

and:

$$\Delta R' = .001 \times D \times d\phi \times \sin \epsilon$$

- |   |                      |
|---|----------------------|
| In sector I , $dR = \Delta R'_I - \Delta R_I$ | } and $dR$ is minus. |
| II , $dR = \Delta R'_{II} + \Delta R_{II}$    |                      |
| III, $dR = \Delta R'_{III} - \Delta R_{III}$  |                      |
| IV, $dR = \Delta R'_{IV} - \Delta R_{IV}$     | } and $dR$ is plus.  |
| V , $dR = \Delta R'_V + \Delta R_V$           |                      |
| VI, $dR = \Delta R'_{VI} - \Delta R_{VI}$     |                      |

The values of  $\Delta R'$  can be solved on the Crichlow Slide Rule with very few operations. It will be noted that the relationship between  $\Delta R$  and  $\Delta R'$  in sectors I, II, and III is the same as that in sectors IV, V, and VI, respectively, except that the resultant  $dR$  has an opposite sign.

The  $dR$  obtained, divided by  $R$  will give a numerical percentage horizontal range correction. A Mr. Euclid once made and proved a statement which lets us use this same percentage as the percentage altitude correction, also.

And so—to the simple sketch. It would be well to set up an altitude line, an approximate line of position, and an approximate line of constant fuze. Anyone ought to countenance the use of three simple lines to keep from jumping, flat footed, into the wrong sector.

# Officer and Gentleman

My dear Nephew:

So you've been commissioned a shavetail, and ordered to extended active duty, eh?

I'm mighty glad to hear it and send you my heartiest congratulations. In these times when there is so much talk about essential industries many people are prone to overlook the fact that our Army is one of the most essential industries we've got; and like all big businesses we need smart young junior executives to learn the ropes and help us oldsters pull 'em—provided they're not *too* smart, and don't try to pull wires as well as ropes!

It's a new sort of world you're coming into and four years of ROTC, valuable as they are, can't fit you completely to meet the new problems and responsibilities that are going to be yours. By that I don't mean run-of-the-mine matters of military administration; I'm quite sure you won't begin official communications with "Dear Sir," and I'm certain you have sense enough to keep your mind and ears open for helpful suggestions from your first sergeant.

But there are other intangible things that aren't in Army Regulations nor Field Manuals, but that are vitally necessary for young officers to know, and to remember if they would like to become old officers. They have been aptly termed "the eternal verities."

Here you are, fresh—and maybe that's a good word for it, too—from civil life. Like your Regular comrades-in-arms you have taken up the work of a soldier because of a sincere desire to serve your country, maybe seasoned with just a dash of martial glamour. So far, you're all even, but there the likeness stops. Even if you don't know it, the Regulars know that you've still got to come a long way before your military background is brought into complete and correct focus, and are more than ready to make allowances for your shortcomings. For that very reason, you ought to be more than ready to administer yourself so that no allowances are necessary.

You see, the War Department assumed certain things about you when it sent you that imposing paper certifying that you are now a Second Lieutenant.

It assumed—and still assumes and will go on assuming until you make it believe otherwise—that you are trustworthy; that you are morally honest; that you are loyal; that, in short, you possess those qualities which, lumped together, go to make up what the War Department has in mind when it talks about an "officer and a gentleman."

I don't know who first thought up that phrase "officer and gentleman" but it certainly is a honey, despite a school of cynical thought which holds that it is a gross contradiction of terms. It is a quality hard to define without seeming to be offensively complacent, yet

in its very vagueness lies the inspiration that for over a hundred and fifty years has prompted lads like yourself to proudly offer themselves as fit repositories for the Army's confidence.

The days of your service are outnumbered by the years of mine, so perhaps you'll indulge an old man his prerogative of offering unasked advice. It can't hurt you if you take it, and it won't cost you a cent, so you can't lose. Here goes:

If I were in your place, I'd approach my military duties as free as possible of all the civilian clichés about the Army. You have probably heard that the Army is all bound round with red tape, that the fabled dodo is not extinct but is enjoying a reincarnation among our high ranking officers, and that for some strange reason the mere donning of a uniform changes an otherwise respectable male member of society into a ravening and licentious leopard.

Son, forget it. It isn't true now, and it never was true.

Certainly, you'll find some things in Army life and procedure with which you possibly won't agree and for which you may be unable to find any excuse, but don't let that throw you. Believe it or not, the Army doesn't do things its own special way just to be ornery. If you had time to investigate you'd find that long and conscientious experimentation with a variety of ideas finally produced those developed and adopted by the Army as best suited for its particular purposes.

Speaking of which, I am reminded of a colonel friend of mine—a West Pointer, too—who got appointed to the War Department General Staff. He was full of beans and vinegar, had a lot of snappy ideas about "speeding up" and "cutting corners" and all the rest of Big Business bromides and was champing on the bit to put them into practice. And when he got his head for a few moments and started in to show the General Staff the way it should go, the G. S. gently but firmly showed him that every last one of his pet schemes had long ago been tried and found wanting.

So, as a starter, you can trust your Army to know what's what, and when, and how, and who. It's taken a lot of thinking to get it that way for you, and it expects you to do a little thinking for yourself in return. Michael Arlen, that affable Armenian, once said that "a gentleman is a man who is never *unintentionally* rude to anyone." That's in the best brittle style for which Arlen's writings are known, but it does stress the principle of a mental process initiating a mode of conduct.

You can not do better than follow that formula.

If you will think about it, you will see at once that your uniforms should be "regulation," without the bizarre frills that some of our higher priced tailors have added; you will keep your uniforms cleaned and

pressed, and you will wear them with "all buttons buttoned and all hooks hooked."

You'll keep your leather shining, and your brass polished.

You'll keep your hair cut short and you'll shave twice a day if you need to.

In conversations with older officers you'll courteously defer to their more mature judgment and presumably wider experience; you won't sit on their desks, nor will you sit at all while they are standing.

Just because an officer doesn't agree with some plan of yours you won't say that he's a damn fool (though you may think so), but you will exercise due tolerance to permit a frank discussion that may in the end prove you wrong, God forbid.

And you'll always think twice before you bawl out anyone. If you can secure discipline at all, you should be able to secure it without raising your voice or parading your rank.

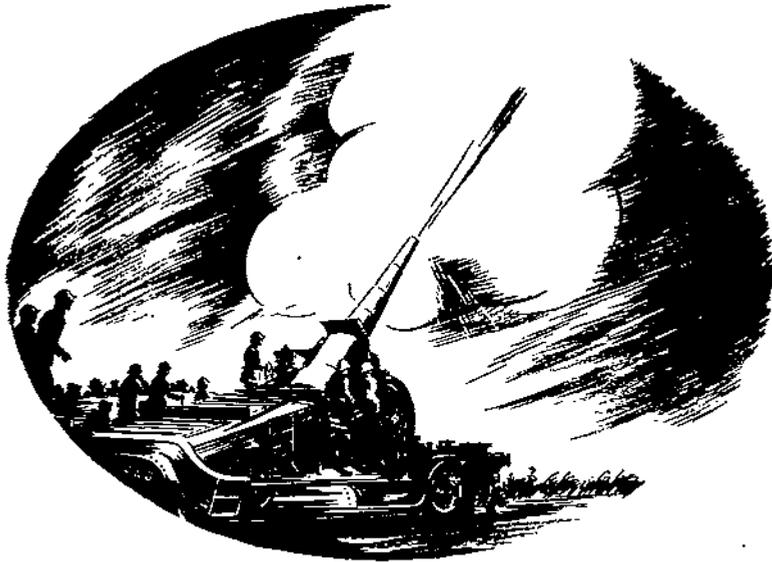
At about this point your thoughts are probably to the effect that what I have been telling you to do is exactly what you would do anyhow; that the ideas of polite conduct, neatness, thoughtfulness, dress and professional demeanor and dignity that obtain in the Army have simply been carried over from civil life. Well, if that is what you think, you never had a sounder thought. The late Mr. Kipling once penned some deathless lines emphasizing the subcutaneous similarity between the colonel's lady and Judy O'Grady. By the same token, the colonel himself and Mr. O'Grady are not basically dissimilar.

You want to be a credit to the Army. I want you to be a credit to the Army. For that matter, so does the Army.

You will be, if you begin by being a credit to yourself. Good luck!

Your affectionate,

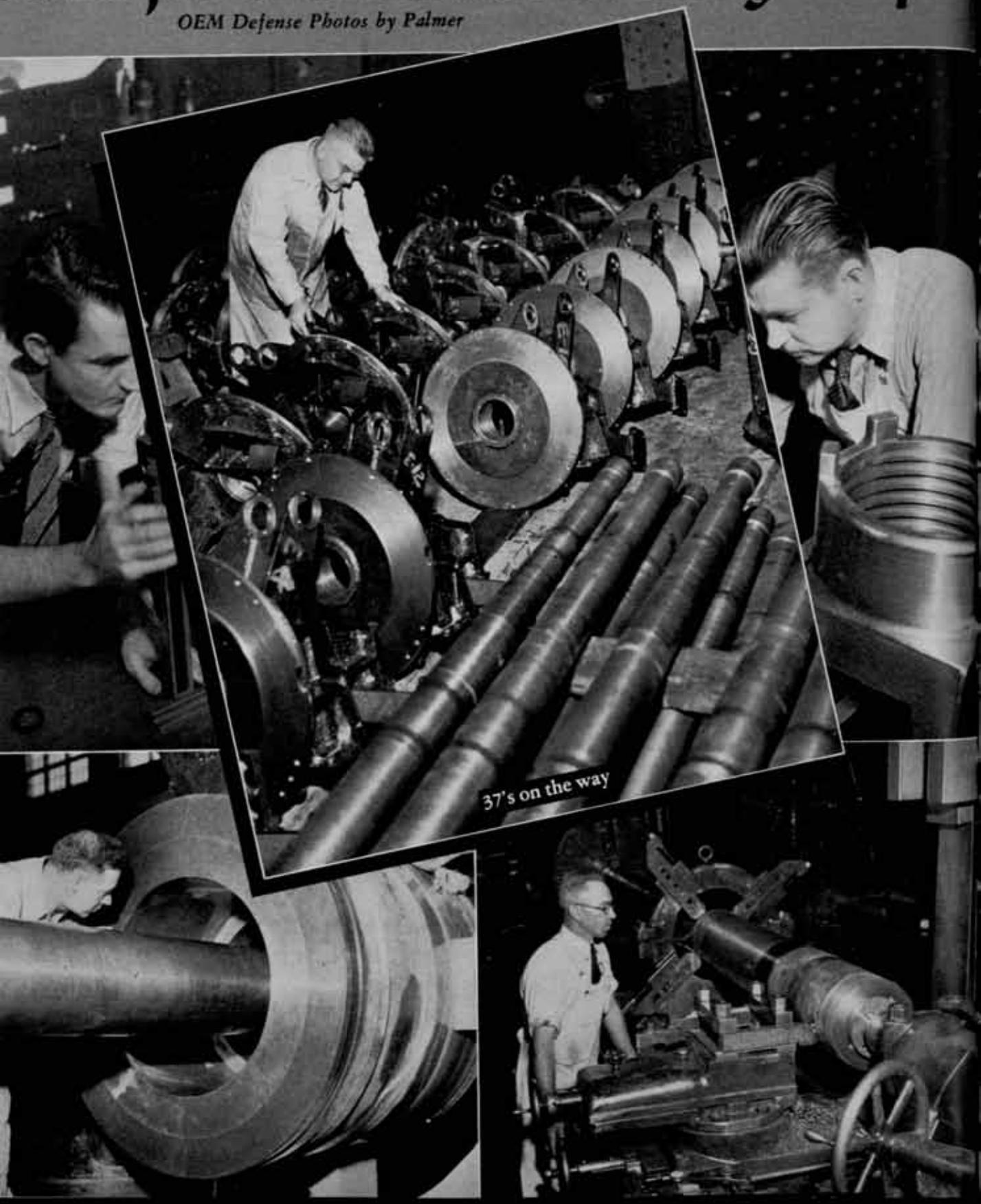
UNCLE SAM.



# PRODUCTION

## Guns for the Coast Artillery Corps

*OEM Defense Photos by Palmer*



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# An Interlude in the Campaign in Norway\*

## By an Indian Army Officer

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Towards the end of April, 1940, twenty officers of the Indian Army received orders to report in Lahore immediately and from there to proceed to the United Kingdom by air. They were to "act as advisors to officers commanding battalions which might be required to operate in mountainous country." These officers assembled in Lahore on April 22, and from the fact that a large proportion of them were carrying fishing rods it was apparent that they were men of acute deductive ability!

Lahore brought an issue of gas masks and a lecture from an officer of Army Headquarters. At Karachi they embarked in a new Imperial Airways flying-boat designed to carry seventeen passengers. Three extra seats had been installed in the luggage compartment aft, which was noisy, smelly and dark, and was soon given the name of "Black Hole of Cathay." "Cathay" was the airplane. It was changed for the "Champion" at Alexandria, and in this airplane the journey to London was completed.

The morning after arrival the twenty officers met General Massy and Brigadier Bruce who described the situation as it then was and explained the future intentions. The British forces had been evacuated from Namsos and Andalsnes, but operations for the occupation of Narvik were still continuing. The importance of Narvik is well known as an iron-ore port, though its future in German hands may disclose other uses for it. It was realized that the Germans would almost certainly continue their advance northwards, and it was the intention to harass their lines of communication by the adoption of guerrilla tactics. For this purpose special independent companies had been formed, and five of them were ready for service. They were under the command of a colonel with a staff approximating that of a brigade. Each company was about 300 strong, all volunteers from different divisions. With the exception of some of the officers all were Territorials. The

company included sappers, signals, and interpreters as well as infantry; it also had a support section of four Bren guns. It was divided into three platoons of three sections, each of the latter commanded by an officer.

In addition to the normal articles of clothing and equipment the men were issued Alpine rucksacks, snowshoes, arctic boots, leather jerkins, and sheepskin coats. The rucksacks proved to be extremely useful, but as no one knew how to use the snowshoes and there was insufficient transport for the sheepskin coats these were soon abandoned. A reserve of thirty days' rations and a special five-day mountain ration of pemmican, together with a SAA [small-arms ammunition] reserve of 100,000 rounds were also included in each company. The final gift towards independence was a large sum of English and Norwegian currency, which was to buy local supplies, and particularly to hire local transport.

The stated intention to use the Indian Army officers as advisors to battalion commanders was out of the question, as there were by this time few battalions left in Norway. They were used instead as attached officers to the independent companies. Eight were ordered to stand-by at twenty-four hours' notice; the rest were given one week's leave. Since only eighty pounds of kit had been allowed on the journey to Great Britain, the eight spent two busy days buying essential uniform and equipment, and enjoyed the novel experience of sending the bills to the India Office for payment. Had one stopped any of them in the street and asked him what he was doing, he would have replied: "What I've wanted to do for fifteen years."

On May 1 they received their summons to report on the following day. Here they met the commander of the Independent Companies and left with him the next evening, arriving on the Clyde the following morning. They found two ships from the Liverpool-to-Belfast run, which were to take them to Norway. They were comfortable enough, and to a schoolboy would have been heaven, because they had been requisitioned at

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\*From *The Journal of the United Service Institution of India*, January, 1941.

such short notice that no refitting had been done. In consequence after a day or two water became so scarce that all washing was forbidden. No. 3 Company was in one ship, and Nos. 4 and 5 in the other. They sailed with an escort of four destroyers. The plan was for No. 3 Company to go straight to Bodo and secure that area, while Nos. 4 and 5 Companies landed farther south at Mosjoen and established contact with the Germans. Bodo was important as the chief port in that part of Norway, the seat of the local government, and the headquarters of the broadcasting company. It was also hoped to find ground in the vicinity suitable for the construction of a landing-ground. It was realized that until a landing-ground was made our force could have no air support, as the area of operations was beyond the range of fighter aircraft based at Harstadt.

The voyage was uneventful, and was spent in overhauling kits and studying maps of Norway. There was a constant stream of conflicting reports from London which could not be queried because wireless [radio] silence had been ordered. It was apparent that there were no British forces between the southern landing places and the Germans, so Nos. 4 and 5 Companies made plans for an opposed landing.

It is necessary here to consider the country. Norway is a delightful place in which to spend one's leave, but it is a nightmare for the conventional soldier who uses FSR as a background to his daytime thoughts. The coastline is covered by literally thousands of islands, and is broken by deep fjords which run miles inland; into these the mountains drop precipitously. Between Mosjoen and Bodo there is one main valley along which runs a metalled road, passable by motor transport once the snow has melted. This road crosses a high snowfield on the line of the Arctic Circle, which is between Mo at Bodo, and farther north it crosses a fjord by a ferry. At Bodo it stops. The broad gauge railway from the south ends at Namsos.

When the venture began the hills were covered by snow, but it had all melted by the beginning of June. It was bitterly cold and damp at first but became delightful later, and before the end of the operations the Norwegians were sunbathing in the open. They are a remarkably fit-looking people, though they actually suffer from a high incidence of tuberculosis, due to the necessity of keeping their cattle indoors during the winter months. They are simple and kindly folk, who refused our soldiers no help, but the prevalence of Fifth Columnists among them made these very traits dangerous and deceptive. In May and June there is no darkness; one can read a book indoors at any hour of the twenty-four, and this fact prevented relief from enemy air observation and attack, and introduced a new problem into withdrawals.

To resume the story of the operations: Nos. 4 and 5 Companies landed at Mosjoen shortly after midnight on the night of May 8-9. It was snowing at the time, which kept off German aircraft. A party of Chasseurs



Map 1: The Scandinavian Peninsula

Alpins, about a hundred strong, who had been guarding Mosjoen, met the companies and explained the situation. The Germans were advancing rapidly and were only a few miles to the south. It was decided to send No. 5 Company southwards to support the Norwegians who were still resisting the Germans, and to leave No. 4 Company to defend Mosjoen. The Chasseurs Alpins embarked on the ship which had brought the companies and departed northwards.

The next day reports were received that a German troopship was steaming northwards from the south of Mosjoen. The Navy were not prepared to work on unconfirmed reports—there were too many of them—and so the Germans were able to effect their famous landing at Hemnes, opposed by only one platoon of No. 1 Independent Company. The troopship was sunk by destroyers, but only after it had succeeded in landing its force behind our troops. There was no alternative to a reëmbarkation and withdrawal by sea. The commander of the Independent Companies used almost every known means of travel in passing the orders for this withdrawal round his command; he moved unceasingly by car, by bicycle, walking and even swimming in order to reach all detachments.

Before the companies left, the Germans were made to pay the price of speed. It was their practice to send cyclists ahead of their advanced guards. One Indian Army officer, remembering the Pathan, laid an ambush



Map 2: The Mosjoen-Bodo Area

on the road, into which these cyclists fell. All sixty of them were killed—the first burst of fire killed many and the rest, shouting, "Heil Hitler!" rode jinking through the dead to their own destruction. They were admired by our men and buried by their own. A small ship was found which was intended to carry 150 men; on this 600 of our troops embarked and left safely. A small number of men were left behind; they were guards over dumps with whom it was not possible to establish contact. They arrived in Bodo fourteen days later, having marched over the mountains after destroying the dumps they had guarded. Their arms and equipment were complete.

Meanwhile No. 3 Company had landed unopposed at Bodo, where they were met by a detachment of regular British infantry from Harstadt and two dejected-looking Royal Air Force officers. The cause of their sorrow was soon told. They had arrived two days before in two flying-boats to reconnoiter suitable landing-grounds and begin construction. The flying-boats had not been at anchor in the harbor for more than a few hours when a German airplane, the first that had been seen in that part, arrived and sank one of them with a bomb. The other was then towed up a small creek and carefully hidden. The next day the German airplane returned, made straight for the place where the flying-boat was hidden and destroyed it. This efficient spy service was not the least of our enemies. The event hastened the disembarkation of No. 3 Company; they had no desire to remain in such a well-informed neighborhood longer than was necessary. They went into peaceful billets in a hamlet at the head of the fjord. These days of peace were made more delightful by a rapid movement in the weather; the country shed its snow and became strikingly beautiful. The only signs of war were constant rumors of enemy landings from

parachutes, boats, and seaplanes, and a regular air traffic northwards to Narvik. The Germans were reinforcing their beleaguered garrison with supplies.

By the middle of May Nos. 3, 4, and 5 Companies were holding positions round the edge of the Bodo fjord as far south as Rognan; No. 2 Company had arrived and was holding the Bodo area. No. 1 Company, which had arrived before any of the others, was holding Mo and was in contact with the Germans. It was now apparent that the Germans intended to push northwards as fast as they could. Accordingly a brigade of Regulars was ordered down from Harstadt to reinforce the area. One battalion of this brigade went south to join No. 1 Company at Mo; the rest were to stay in the Bodo area. The laborious task of making a landing ground at Bodo was begun; the ground was so soft that it needed almost complete resurfacing, and even wooden house-doors were used in making the runway. At that time things began to go wrong. The remainder of the brigade, which was due for Bodo, met with two disasters. The first battalion was in a transport when the Germans attacked with aircraft and inflicted material loss on it. It was decided to send the other battalion with more precautions, but it too met with misfortune and had to be sent back to Harstadt to refit. The delay in its final arrival at Bodo was a very serious factor in the course of the campaign.

The expected German advance from Mo developed, and the first Regular battalion and No. 1 Company were forced to give ground. The hills along this route are covered with thick pine forests in which visibility is often only ten or twenty yards. When the Germans met opposition on the line of the road, they were quick to deploy out on to the hills on either flank. In these flanking moves they were helped by the knowledge of the country which many of their officers had gained as "tourists" in peacetime. They were also helped by good modern maps and, of course, by their complete mastery in the air. Nevertheless they owed their success to other causes of more general application. Their men were very fit and hard, and were used according to their special aptitudes—those that were accustomed to hills and to snow were used widest on the flanks and so on. They do not delude themselves that all infantry are equal, or even that all men given equal training will make the same type of infantrymen. Their men were specially armed for forest and hill fighting. In place of heavy automatics (and a Bren is very heavy halfway up a steep hill!) they had machine-carbines and in place of artillery they had grenades and numerous mortars. Our men were outwalked, outweaponed, outnumbered, and finally outflanked.

No. 3 Company was sent south to relieve No. 1 Company, as the latter had suffered heavily in three weeks of continuous fighting. The relief took place at Krokstandt, some thirty miles north of Mo. The second Regular battalion to arrive was sent to take up a position at Pothus. While preparing the position they

discovered a dump of German ammunition, which is rather a surprising find in an allied country as yet unoccupied by the enemy. Our "Q" [Quartermaster] staff are taught to think ahead—perhaps they now need post-graduate training!

The first Regular battalion withdrew slowly through the Pothus position and were then sent back to Bodo to rest. No. 3 Company remained with the other Battalion and No. 2 Company who were already at Pothus. Up till this time it was expected that further reinforcements would come to drive the Germans south. It was now known that they would not come. However, the day that the Pothus position was abandoned was the first of two red-letter days for the British. Three Gladiator fighters had landed on the newly-made landing-ground at Bodo and now appeared in the air. One unfortunately crashed when taking off, but the other two put up a typically marvelous RAF performance. One or the other was kept continuously in the air over Rognan, where a tricky withdrawal into ferry-boats was in progress. They played ducks and drakes with the Germans, and in their two days of glorious action accounted for more than fifteen German planes.

The effect on the troops was electric, they cheered at the sight of them and became different men; but it was not to last. A large force of Messerschmitt-110's arrived, shot one down and the other had to leave for Narvik; the pilot was badly wounded in the plane that was shot down. Just before this action the Germans dropped leaflets on Bodo which read: "Thank you for building the landing-ground. We will not bomb it, we will take it." A sinister quip, and not quite true, for shortly afterwards about a hundred German bombers arrived and razed Bodo to the ground. High-explosive and incendiary bombs spared nothing except, of course, the brewery; even the hospital, clearly marked with red crosses and standing apart from the town, was reduced to ashes. The town consisted largely of wooden houses, and this fact may have been a blessing, for the smoke that they gave off as they burned covered the inhabitants and garrison as they evacuated the place.

The withdrawal by ferry from Rognan to Landset was successful but with nothing to spare. The last boatload embarked as the Germans entered Rognan village, a sapper [engineer] lit the fuze which was to blow up the jetty. And then—the engine of the boat stopped. The engineer who tinkered with the engine had considerable moral support from his passengers in his desire for success, and he achieved it in time for the boat to be some fifty yards from the jetty when it went

up. The explosion knocked all the troops over on to the deck, but none was hurt. It was hoped that the destruction of the jetty and removal of all boats would place an effective barrier in the way of further German advance. They had an arm of the sea between them and our forces. They attacked the next day. They had found a bridle path around the head of the fjord, and with amazing energy and determination they had marched all night and were on our tail again, not, however, in any strength.

Complete evacuation had been ordered, but with Bodo destroyed and German forces still in contact with our rear parties it looked to be a ticklish operation. In the event it was entirely successful, largely because the Germans suspended air action for the three vital days. The first echelons had left by cruiser and were taken to a lonely camp in North Britain to prevent all communication with outside; it was essential that the evacuation should be kept absolutely secret from the start. The last echelons left on destroyers, and went in the first instance to Harstadt. Harstadt was evacuated a few days later, and the operation was marked by an event which deserves credit. The Air Force pilots of the Hurricane fighters which were there were ordered to destroy their machines. This they were so loth to do that they asked permission to fly them onto an aircraft carrier. Permission was given, though the feat was extremely dangerous, as a Hurricane was never designed to land on anything but a large landing ground. They all succeeded.

So ended an adventure which has many counterparts in previous and subsequent British military history. If our civilians are a race of shopkeepers, our soldiers are a race of plumbers—they come, and then go back for their tools. It was, however, the first campaign which proved certain fundamentals of this war: One cannot fight without air equality, one shouldn't without air superiority. The battlefield is no place for any man who has not been trained to take a pride in his endurance, his hardiness, and his independence of all comfort. Infantry is no longer a generic term for an armed soldier who has no horse, nor can infantry be armed and trained to fight successfully everywhere. The German infantry, who needed machine-carbines, had them; those who had snowshoes could use them, they were specialists in Norwegian warfare, not just PBI—"Poor Bloody Infantry." These basic facts are well understood at home, and no one on the Continent need doubt that when we come back we shall have our tools with us—for every conceivable job of war to be done.



# Fire Control Equipment For Seacoast Artillery

By Lieutenant Colonel Louis H. Thompson  
Coast Artillery Corps

For many years it has been the opinion of the writer that fire control equipment for mobile artillery and for medium caliber batteries not employing the horizontal base system might be improved by making it lighter, less expensive, and more simple in operation. Improved emergency equipment for major caliber batteries might also be desirable.

## A PROPOSED SET OF SIMPLIFIED FIRE CONTROL EQUIPMENT

Figure 1 shows a set of emergency fire control equipment which it is believed should be provided for each mobile and medium caliber battery as auxiliary equipment, and for each major caliber battery as emergency equipment. The salient characteristics of this equipment are set forth as follows:

(a) It is universal except for the deflection chart on the deflection board and the range scale on the set-forward point range computer. These items can be quickly made for the particular gun and ammunition being used. Otherwise the equipment designed for batteries using degrees in measuring azimuth can be used for any type of gun, and the equipment graduated in mils

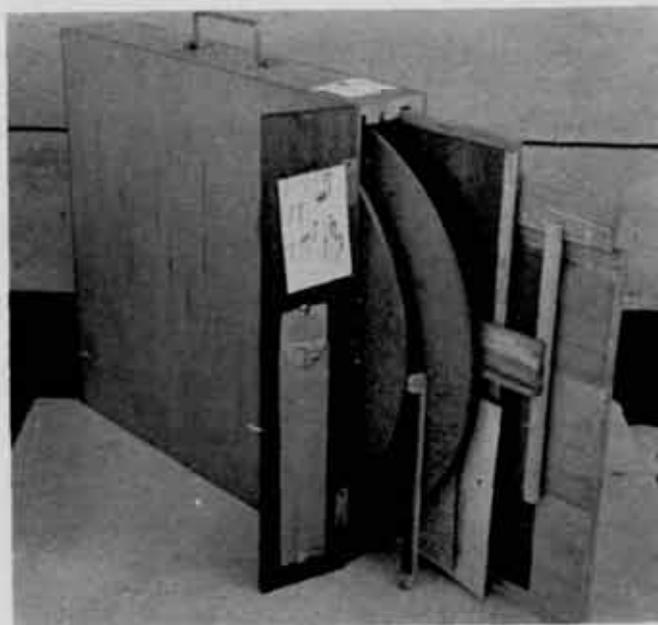


Figure 1: Set of emergency fire control equipment

can be used for any battery employing mils for measuring azimuth.

(b) The weight of the complete set of equipment is approximately 20 pounds including the carrying case, and the volume when the equipment is packed in the case is less than one cubic foot.

(c) This equipment can be manufactured quickly and in large quantities without the use of special tools or machinery.

(d) The cost of material for building twenty sets was approximately \$2.50 per set and it is estimated that the complete cost of manufacture in a reasonably large quantity would not exceed \$10.00 per set.

(e) This equipment can be used readily by Field Artillery equipped with 155-mm. guns for fire against moving naval targets, provided a range finder is available.

(f) It can be used for either Case II or Case III firing and provides means for quickly converting ranges and azimuths from a distant observing station to corrected ranges and azimuths for use on the guns.

(g) It permits the predicting interval or dead time to be cut down to a minimum of fifteen seconds for either Case II or Case III.

(h) It can be made by battery personnel, however more satisfactory results will be obtained if manufactured in large quantities.

A detailed description of the construction and use of this equipment follows.

## THE WIND AND PARALLAX COMPUTER

*General Description.* This device consists of a circular grid, over which is mounted a transparent movable disc, and an angular parallax scale which may be moved across the disc. An azimuth circle is graduated around the periphery of the disc in a clockwise direction with the zero at the bottom. Numbers are placed to the right of the Y axis of the grid to indicate range difference corrections; minus corrections below the X axis and plus corrections above it. The scale of the grid should be 100 yards to the inch with a minimum graduation of ten yards. This permits a quick change of the scale to any multiple of 100. If the device is being used to read angular parallax corrections, a change in the scale of the grid would necessitate a corresponding change in

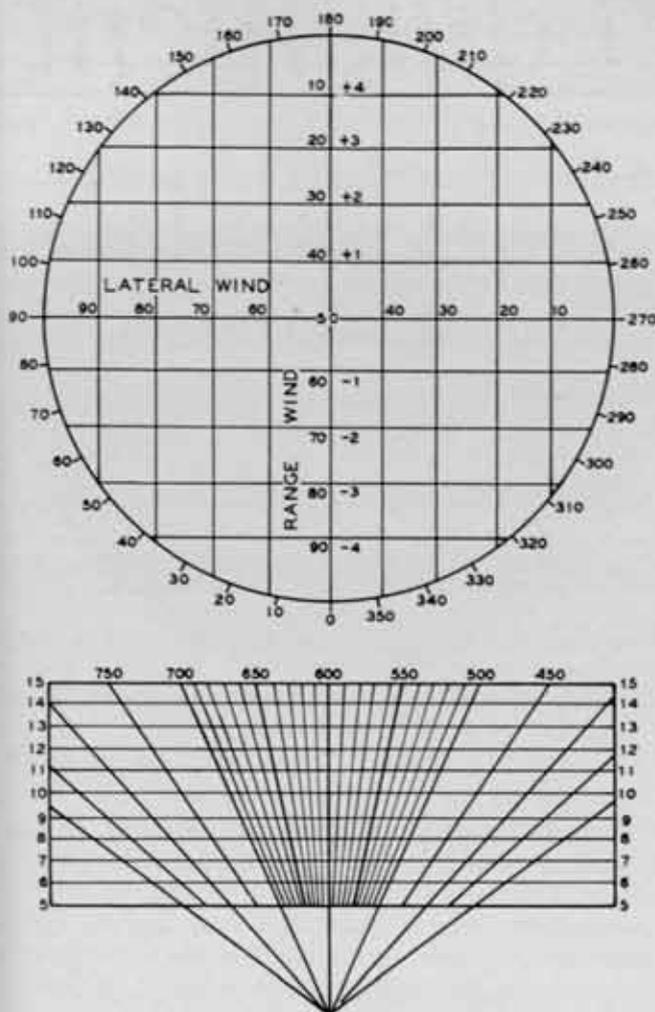


Figure 2: Relocating and gun difference chart and wind and parallax computer

the value of the parallax lines on the parallax scale. For example if the scale should be changed to 200 yards to the inch the parallax line labeled 280, which is 20 mils to the right of the center or normal line, would become 260 and the 290 line would become 280 etc. This would change the least graduation from 1 mil to 2 mils. Range wind reference numbers are placed along the left side of the Y axis with 50 at the center of the grid and 100 five inches below the center. Lateral wind reference numbers are placed along the X axis with 100 five inches to the left of the center.

To construct the angular parallax scale a vertical line is drawn and graduated to any scale desired to the maximum range expected. A line perpendicular to this range scale is drawn across it at the maximum range. The distances represented by the tangent of 10, 20, 30 mils etc., multiplied by the range are laid off to a scale of one inch equals 100 yards, to the right and left of the range scale along this line. These points are connected by straight lines from the zero or origin of the range scale. These divisions are further subdivided as desired, normally to one mil or .05 degree.

Figure 2 shows the construction of the chart in degrees and Figure 3 shows the complete device graduated

in mils and mounted on a board ready for use. Note that the angular parallax scale is fastened to a slide which moves up and down in a groove along the left side of the board, thus keeping the center line of the scale always over the Y axis of the grid.

*Various Uses of the Wind and Parallax Computer.* While the main purpose of this device is to determine range and azimuth parallax corrections and wind corrections, there are several other uses worth mentioning. Where the guns of a battery are sufficiently dispersed to require a table of range differences, such a table can be quickly prepared by the use of this device. Let the center of the disc represent the base piece or directing point and then set the index of the transparent disc at the azimuths of the other pieces, from the base piece, in turn, plotting a point on the disc over the Y axis downward at the distance from the base piece for each of the others. When the index is set at any azimuth in the field of fire the range differences may be read along the Y axis of the grid beneath the plotted points on the disc. For fixed targets a table may be quickly prepared showing the correct range and azimuth for each of the guns of the battery for each target. Having set the disc to the azimuth of the target from the base piece, move the angular parallax scale until the range line representing range to target from base piece is over the plotted point and read the angular parallax correction. The range correction is read directly from the grid, beneath the plotted point. Range and azimuth may readily be relocated from one battery to another. By plotting the positions of the various batteries of a group on the transparent disc the group commander may quickly relocate the range and azimuth from his station to any battery of the group.

*Mathematical Principles Involved.* A study of the

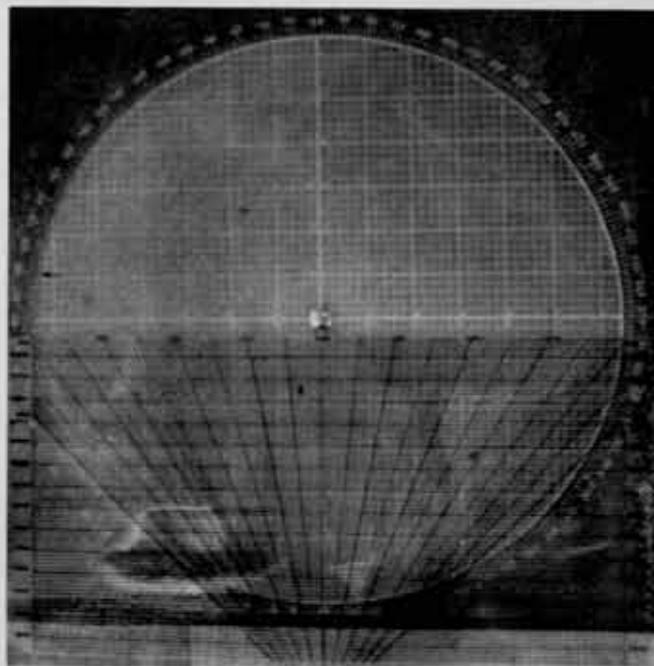


Figure 3: Wind and parallax computer graduated in mils

wind and parallax computer will disclose that certain assumptions have been made which are not mathematically correct; however, the errors introduced are of negligible value. In the right triangle formed by dropping a perpendicular from the gun position to the line from observer to target the assumption is made that the longer leg of this triangle is equal to the hypotenuse, which of course is not correct. For a range of 10,000 yards and a distance from observer to gun of 1,000 yards the maximum error will occur when the angle GOT (gun-observer-target) is 90 degrees and will amount to approximately 50 yards. It can be readily seen that in this case the tangent of the angle GTO is .1000 and that the true value of the range from gun, if the range from observer is 10,000, will be obtained by dividing 1,000 by the sine of the angle whose tangent is .1000 or by dividing 10,000 by the cosine of this angle. From this it may be seen that if we increase the range to 20,000 with the other conditions the same the value of the error will be only half as great; or cutting the distance from observer to gun into half will reduce the error to one-fourth as much. It will also be noted that the error drops to zero when the angle GOT becomes zero or 180 degrees.

Where the value of the error is large enough to justify a correction it may be eliminated by setting the index on the transparent disc at the mean of the azimuths from observer to target and from gun to target. This azimuth correction may be obtained from the parallax scale as follows: bring the parallax scale over the plotted point and read the parallax correction and add algebraically one half of the difference between this reading and normal to the azimuth. For example if the parallax reading is 200 (on the mil scale) and the azimuth as read from the azimuth instrument is 1,200, then the azimuth to be used in setting the index on the disc would be 1,150. No attempt should be made to set the disc closer than 10 mils. In this case the operator would place a pencil mark on the periphery of the disc 50 mils to the right of the index and use this mark in setting the disc instead of the regular index, until the azimuth changed sufficiently to require a new correction. In reading angular parallax corrections the uncorrected range to set-forward point as read from the set-forward point range computer should be used instead of the range as read from the range finder at the observing station. No attempt should be made to set ranges on the parallax scale closer than one or two hundred yards. It will be noted that when the angle GOT is near 90 degrees the angular parallax is changing very little and the range difference is changing at the maximum rate for any change in the azimuth, and conversely when this angle is near zero the range difference is changing practically none while the angular parallax is changing at a maximum rate. It is not necessary for the operator of the parallax computer to call off data on every bell, but only when the change is large enough to warrant a new parallax correction.

*Detailed Instructions for Operation of Wind and Parallax Computer.* Before tracking begins the operator turns the transparent disc until the index is set at the azimuth of directing point from the observer, and plots a point on the disc over the Y axis and below the X axis at a distance equal to distance from observer to directing point. He then sets the index at the azimuth of the ballistic wind and plots a point on the disc over the Y axis and below the X axis at the velocity of the wind, using a scale of one inch equals 10 m.p.h. This point should be labeled W. As soon as the first azimuth is received he calls off lateral and range components of the wind and the range parallax correction. If Case III is being used he also calls off the angular parallax reference number. As soon as ranges start coming from the set forward point range computer he uses these ranges in determining angular parallax instead of the ranges from the range finder. Range corrections which are read below the X axis are minus and those above are plus. This is based on the assumption that azimuths are measured with zero south.

For accurate results it will be necessary to use the approximate azimuth to the set-forward point if the rate of change in azimuth is very great. This may be obtained by noting the rate of change in azimuth during one observing interval and multiplying this by the number of intervals taken up by the dead time and time of flight. For example suppose the observing interval is 15 seconds, the time of flight 30 seconds and the rate of change is 10 mils during one interval. The parallax computer should operate one bell ahead of the set-forward point azimuth computer, which will give a total dead time of 30 seconds for the parallax computer; this added to the time of flight makes 60 seconds or four intervals. Therefore 40 mils should be either added or subtracted from the azimuth read at the observing station. This is done by marking a new pencil index on the disc 40 mils to the right or left of the index described above under *Mathematical Principles Involved*. Where both the range and angular parallax corrections are changing fairly rapidly and the time interval is short, the operator should alternate in calling off these corrections and call only one correction after each bell. The correction should be called immediately after data have gone to the guns. The wind corrections should be called off only when necessary. If a range correction board is not being used it will not be necessary to read and call the range component of the wind.

#### SET FORWARD POINT RANGE COMPUTER

*General Description.* Figure 4 illustrates a device for determining the range to set-forward point without the use of a plotting board when the range parallax correction does not exceed 1,000 yards. The device consists of a heavy cardboard or plyboard disc of about 20 inches in diameter upon which is mounted a circular scale constructed as follows:

From the center of the disc a circle of approximately

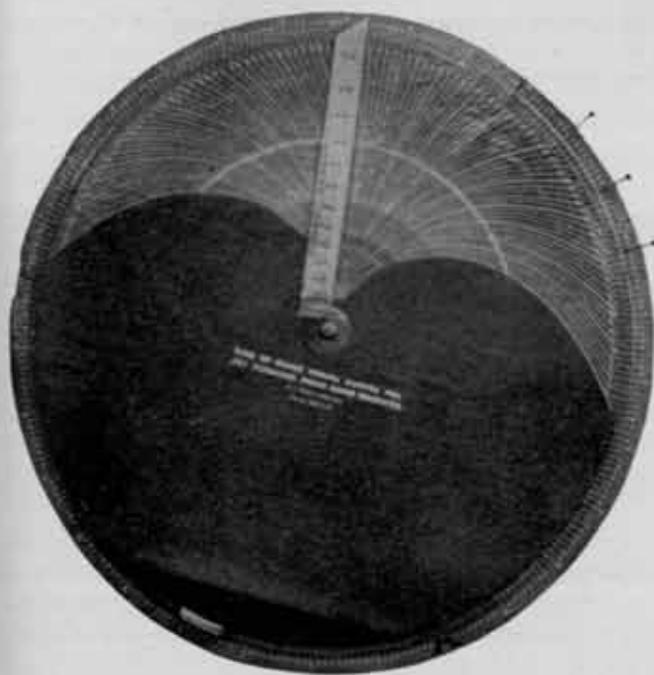


Figure 4: Set forward point range computer

$9\frac{1}{2}$  inch radius is drawn. This circle is divided into three equal parts, each part representing 1,000 yards. Each of these three divisions is further subdivided into 100 yard divisions and each 100 yard division is further subdivided into 10 yard divisions, thus making 300 graduations in the complete circle. All graduations are appropriately numbered with the numbers increasing clockwise. At each of the 1,000 yard graduations a window is cut in the periphery of the disc down to the circle. Three small cardboard discs, approximately six inches in diameter, are prepared and graduated along the edge with numbers from zero up to the maximum range, in thousands, expected. These discs are fitted into the back side of the base disc so the numbers will show in the windows as the discs are revolved. The purpose of these discs is to indicate the whole number of thousands of yards. Next a cardboard disc of the same diameter as the circle on the base disc is cut and pivoted at its center and the center of the base disc so that it fits into the circle on the base disc. With a straightedge pivoted at the center graduate this disc for 2,000 yards, using the same graduations as those on the base disc. Place an index at the center of these graduations and number them from zero at the index increasing to both left and right.

Another disc of slightly less diameter than the scale on the second disc should now be cut from light cardboard and pivoted at the center. With a straightedge draw a line from the center to the edge of this disc. Graduate this line in time of flight from the center, using a scale of one inch equals 5 seconds. From the center draw light circles in pencil for each 5 seconds time of flight. Construct a table showing for a rate of change in range of 100 yards per minute the change for each 5-second interval up to the maximum time of

flight expected, extending this table for 200, 300, 400, etc. yards per minute up to 1,000. Plot points on each of the 5-second circles for each of these assumed rates of change and connect these points with smooth curves from the center of the disc. Interpolate additional curves between each of these curves representing a rate of change of 100, 200, etc. yards per minute. Curves for each rate of change differing by 20 yards is recommended. Label these curves with numbers representing the rate of change for which each curve is drawn. In plotting the points for these curves use a straight-edge pivoted at the center and set at the proper number of yards by using the graduations on the periphery of the base disc.

From appropriate firing tables for the gun and ammunition to be used, graduate a range scale on a strip of celluloid by using the time of flight scale described above. The end of this range scale should extend to the graduations on the base disc when the range scale is pivoted at the center of the top disc. After being prepared the scale should be dipped in lacquer to prevent graduations from being rubbed off. All scales should be painted over with clear lacquer or clear varnish so that the dirt may be wiped off easily without causing the scales to blur.

If a range percentage corrector is not available and it is desired to apply arbitrary corrections in yards on the set forward point range computer an additional scale should be constructed on the periphery of the top disc with the zero of this scale at the center line of the time of flight travel curves described above. For convenience this scale will be called scale C, the scale on the second disc will be called B and the scale on the base disc A. The graduations on scale C will be numbered right and left from the zero, with the graduations to the left being marked plus and those to the right marked minus. In applying an arbitrary correction the operator will place a pin in scale C at the correction called for and will thereafter use this pin as the index in setting off parallax corrections instead of the center line of the travel curves.

*Operation of Set-Forward Point Range Computer.* There are many possible variations in the method of operating this device. Let us assume that the range finder is close enough to the guns to make a parallax correction unnecessary, that the time interval is 15 seconds, and that a percentage corrector is being employed with which the ballistic and arbitrary corrections are applied. Two operators are normally required. As soon as the first range is received No. 1 operator places a green pin in scale A at the last three figures of the range. When the next range is received another green pin is set in scale A, and since the direction of the travel of the target is now known the discs showing the whole number of thousands are now set. No. 1 moves scale B until the index is opposite the last green pin and sets a yellow pin in scale B opposite the first green pin, thereby setting off the travel during one observing in-

terval. As soon as the next range is received he sets a third green pin in scale *A* at this reading. When the fourth reading is received he moves scale *B* so the yellow pin will be opposite this reading. It will be noted that the index of scale *B* is now one minute or four intervals ahead of the first green pin. No. 2 operator places a red pin in scale *B* opposite the first green pin and notes the travel during one minute as read from scale *B* at the red pin. He immediately moves the range arm until it intersects the travel curve indicated by this reading at the last range received and notes on scale *A* at the reading edge of the range arm the approximate range to the set forward point. Using this approximate range he resets the range arm on the travel curve selected.

In the meantime No. 1 has picked up the first green pin and reset it in scale *A* opposite the yellow pin and moved scale *B* until the yellow pin is opposite the reading just previously indicated by the index of scale *B*. If there has been no change in the rate of travel the yellow pin now rests opposite the expected reading from the range finder. As soon as the range is received from the range finder No. 1 moves scale *B* slightly until the yellow pin is opposite the reading actually received and immediately reads the range to set forward point on scale *A* at the reading edge of the range arm. No. 2 glances at the red pin and moves it if necessary to correspond to the position of the green pin the greatest removed from the index, and immediately resets the range arm to correspond to the new travel and range to SFP. No. 1 resets the yellow pin to correspond to the latest travel during one observing interval and moves scale *B* until the yellow pin is opposite the next expected reading. As soon as the reading is received he repeats the operation as above. No. 2 must be careful to use the travel curves to the left of the center line for decreasing ranges and those to the right for increasing ranges. The purpose of having the travel curves drawn for a rate of change during one minute is to make the chart good for any time interval which will go in to 60 a whole number of times such as 15, 20, and 30; and also to smooth out variations between readings from the range finder. This may also be done by setting the yellow pin at an average value for the travel during one interval, and in this case No. 2 may merely multiply the rate of change during one interval by the number of intervals in a minute, which would be four for 15-second interval. This would eliminate the necessity for the red pin and may speed up operations.

The above instructions are based upon a 15-second interval. Should a 20-second interval be used only two green pins will be used instead of three. If a parallax correction is required either No. 2 or a third operator will apply this correction by moving disc *C* until the center line or index is opposite the proper correction on scale *B*. For example if the parallax correction is minus 500 yards the index of disc *C* would be moved to the left until it is opposite 500 on scale *B*. Should it be

desired to apply an arbitrary range correction, operator No. 3 will set a pin in scale *C* at the correction called for and will then use this pin as the new index in setting off parallax corrections. He should use two pins of the same color, one to set in scale *B* at the parallax correction called for and another in scale *C* at the arbitrary correction. These two pins will always be kept set opposite each other by moving disc *C* as required. It is to be noted that scale *C* is not used when ranges go through a percentage corrector.

Since this device is based upon rate of change it will be apparent that ranges can continue to be sent out even though the target becomes obscured from the range finder, and will be correct as long as the rate of change continues the same. When tracking a target following a straight course the ranges from a self contained base range finder or from a DPF will not normally be uniform in rate of change. For this reason it is better for operator No. 1 to establish an average rate of change and to move disc *B* so the yellow pin is opposite the expected reading rather than to use the actual reading from the range finder if the actual reading varies greatly from the expected reading and there has been no report that the target has changed course. For this purpose he may use several extra green pins in order to get a better average rate of change. This procedure will speed up operations as No. 1 may actually begin reading before the bell rings, since he will be using the expected range and will use the ranges received from the range finder to keep the course adjusted. Where the rate of change in range is very great the accuracy of operation will be improved if No. 2 will note the rate of change during one observing interval and set a pin in scale *B* ahead of the reading edge of the range arm by this amount. He will now use the reading on scale *A* opposite this pin in setting his range arm rather than the range to SFP. The lock nut on the bolt holding the three discs and the range arm together must be adjusted so that discs *B* and *C* and the range arm will move together until pressure is applied to make them move independently. When disc *C* is moved the range arm should move with it to prevent changing the setting of the arm. A small handle should be fastened to disc *B* as shown in Figure 4 to permit it to be moved readily.

#### DEFLECTION BOARD

*General Description.* Figure 5 illustrates a deflection chart and board of simple construction which can be operated very easily and quickly. The curves at the right of the chart are drawn to combine drift with angular travel during the time of flight for varying rates of angular travel during one observing interval. Since the chart in the illustration was drawn for 155-mm. guns the time interval used was 15 seconds. To simplify the work of drawing the curves a table should be prepared showing the deflection for each one thousand yards of range that would result for various assumed rates of

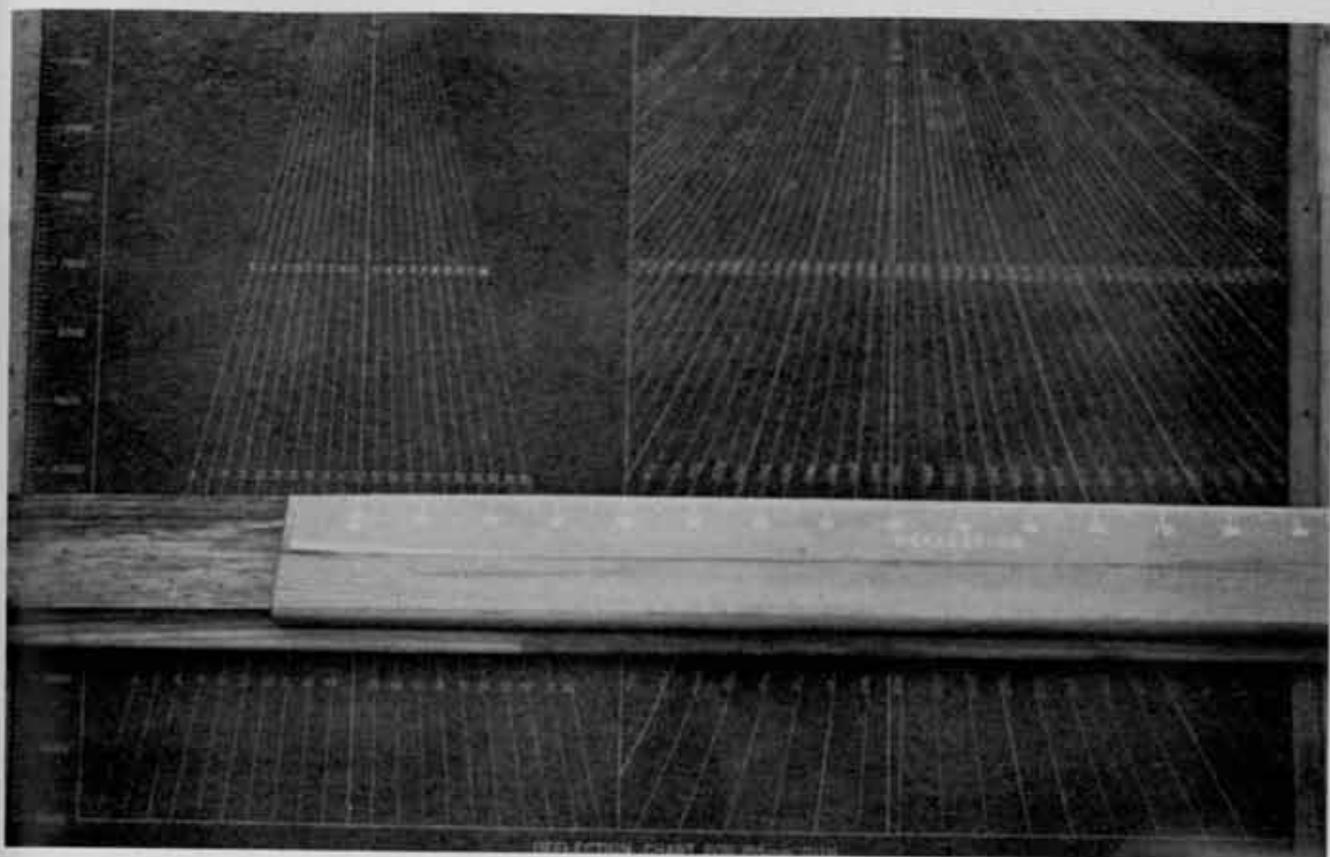


Figure 5: Deflection board and chart for 155-mm. gun

travel when combined with the drift. To avoid plus and minus or right and left deflections 300 has been arbitrarily chosen as normal and deflections computed for a target traveling from right to left with rates varying by 10 mils and also for a target traveling from left to right with the same variation in rates of travel. After the 10 mil curves were drawn curves for each two mils were interpolated. In order to correspond to the travel which would be read from the panoramic sight the travel for a target traveling from right to left has been taken as greater than 300 and for a target traveling left to right as less than 300. For example a reading of 310 would mean that the target is traveling from right to left at the rate of 10 mils in 15 seconds, and a reading of 300 would mean that there is no angular travel. In the illustration a vertical scale of one inch equals 1,000 yards of range and a lateral scale of one inch equals 10 mils of deflection were used. Each curve is labeled with the angular travel which it represents, the numbers increasing from left to right. The curves may be drawn on cross section paper and traced or the board and deflection scale may be prepared first and the curves drawn by using the scale to plot the points.

The curves to the left of the chart represent lateral wind effects and are drawn to the same scale as that used for the drift and travel curves. The center line, representing no wind, is labeled 50 to correspond to the reference number used on the wind component indicator. The numbers increase from 0 on the left to 100 on the right. The deflection board is made of ply-

board and the chart is mounted on heavy binder's board. The chart for normal charge is mounted on one side of this board and the chart for super charge is mounted on the other side. The board can easily be reversed. The deflection scale is free to slide in a groove in the blade of the T square. After the deflection scale and charts were glued in place they were covered with a coating of clear spar varnish to permit easy cleaning.

While this description pertains to deflection charts for use when azimuth is measured in mils, the construction in degrees is similar except that the normal is taken as 6.00 instead of 300 and the curves are drawn for each .10 of a degree of travel instead of for each 2 mils.

*Operation of the Deflection Board.* This deflection board is designed for use in Case II or Case III firing using the system described herein or for Case II firing when using any system. It is well known that the measurement of angular travel with a gun sight or with an azimuth instrument is far more accurate than the measurement of travel from the plotting board. In order to eliminate right and left deflections for Case II firing, when using the panoramic sight graduated in mils, the sight should be set so that the reading is 300 when the line of sight is parallel to the axis of the bore. To measure travel with the sight the gun pointer sets it to read 300 and follows the target by traversing the gun until the bell rings and then follows the target by traversing the sight until the next bell rings. The operator of the deflection board sets the sliding T square

at the range to target, places the wind index on the deflection scale over the proper wind curve, and as soon as the angular travel is received he picks out the curve corresponding to this travel and notes where this curve passes under the deflection scale, reading the deflection from the deflection scale at this point. It will be noted that the 300, or zero, deflection line is a straight line perpendicular to the deflection scale and that when the wind index is set at 50 this line should pass under the deflection scale exactly at 300. It will also be noted that the 300, or zero, travel curve represents only drift and offers a ready means of checking the chart from appropriate firing tables. If the travel is measured by the pointer in the azimuth instrument the value as read should be added to 300 if the target is traveling from right to left or subtracted from 300 if the target is traveling from left to right. The method of using the deflection board for Case III firing in connection with the set forward point azimuth computer will be discussed when the operation of that device is described in the following paragraph.

#### SET FORWARD POINT AZIMUTH COMPUTER

*General Description.* The sketch shown in Figure 6 illustrates the arrangement of the scales for this device when prepared for use with degrees and Figure 7 is a photograph of the device as prepared for using mils in the measurement of azimuth. It consists of a base

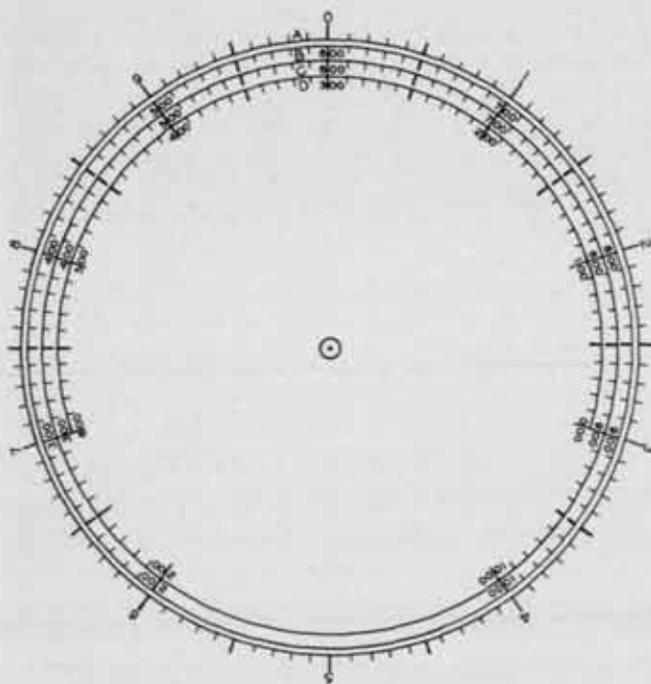


Figure 6: Set forward point azimuth computer

Although not shown in the figure, each tenth degree division should be further subdivided into five hundredths. Within each degree division the tenth degree divisions should be numbered from 10 to 90. The device consists of three separate charts mounted on three cardboard discs. Scales C and D are on the same chart. The three discs are pivoted together at the center with a stove bolt so they will be free to rotate with respect to each other. The bolt should be provided with a lock nut to control the amount of friction. The two discs B and CD should have enough friction so they will rotate together until pressure is applied to make them rotate separately.

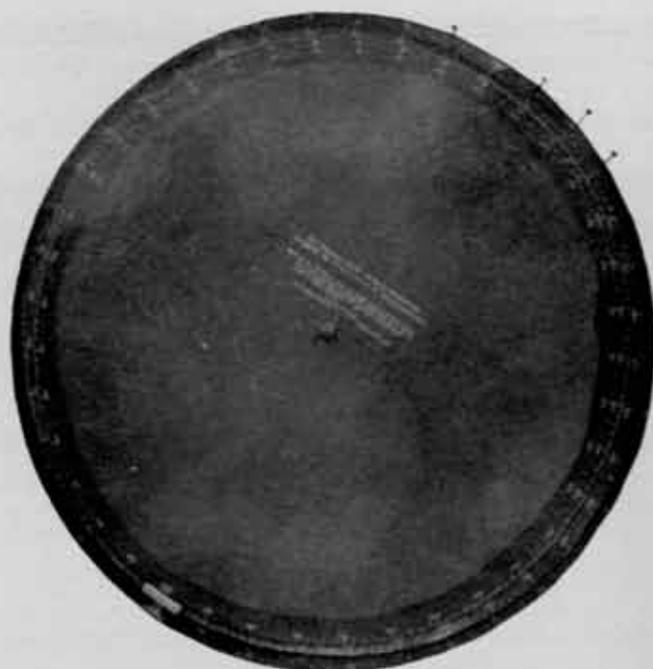


Figure 7: Set forward point azimuth computer graduated in mils

disc of heavy binder's board, press board, or plyboard of about 20 inches in diameter upon which is mounted scale A of about 19 inches in diameter. Scale A is a circle divided into 10 equal parts each representing one degree. Each degree is further subdivided into tenths and five hundredths. When mils are used the circle is divided into two equal parts, each representing 100 mils; and these divisions are further subdivided into 10 equal divisions and these divisions are further subdivided into 10 equal divisions giving a minimum division of one mil. The device graduated in degrees has one subdial with numbers from 0 to 35, and when mils are used there are two subdials graduated from 0 to 63. These subdials are mounted on the back of the base disc in a manner similar to that described for the set forward point range computer.

After the base disc has been prepared another disc is cut from heavy cardboard with diameter equal to that of the circle of scale A. This disc carries a scale B graduated as shown in Figure 6 when using degrees and graduated in a similar manner for mils except that the normal is 300 instead of 6.00. A third disc with diameter one-half inch less than disc B is prepared from light or medium cardboard and is graduated in a manner similar to that shown in Figure 6 for degrees, and in a similar manner, except that the normal is 300, for mils. These three discs are fastened together at the center with a bolt and lock nut so that the two top discs will rotate together until pressure is applied to make them rotate independently. Scales C and D are both drawn on the top disc. Scale D is intended for arbitrary lateral corrections and is graduated counter clockwise so that the old familiar rule of "right raise and left lower" will apply. All scales should be given a

coat of spar varnish to protect them from dirt and dust. In fastening the scales to the discs lacquer should be used to prevent undue distortion. One coat of lacquer should be applied to each surface and then another coat applied and the paper scales applied to the discs before the lacquer can dry. Better results will be obtained if the drawing paper is glued to the discs before the scales are drawn, as this will eliminate distortion in the scales.

*Operation of Set Forward Point Azimuth Computer.* This device is operated in connection with the parallax computer and the deflection board. Where the predicting interval is less than 20 seconds two operators should be used. Operator No. 1 sets a green pin in scale *A* at the first azimuth received from the azimuth instrument and another green pin in this scale at the second azimuth received. He then turns disc *B* until the index is opposite the second green pin and places a yellow pin in scale *B* opposite the first green pin, thereby setting off the angular travel during one observing interval. The operator of the deflection board, having previously set his *T* square at the range and moved the deflection scale until the wind index is over the proper lateral wind reference number, now notes the angular travel on scale *B* as indicated by the yellow pin. He picks out the travel curve corresponding to this reading and calls off the deflection. Operator No. 2 sets a red pin in scale *B* at this deflection and moves scale *C* until its index is opposite this red pin. In the meantime the operator of the parallax chart has called off the angular parallax and No. 2 sets a black pin in scale *C* at this reading. As the next azimuth is received No. 1 moves scale *B* until the yellow pin is opposite this azimuth and immediately calls off the corrected azimuth, reading on scale *A* opposite the black pin. He then picks up the first green pin and places it in scale *A* opposite the yellow pin and quickly turns the index of scale *B* back to this green pin and notes whether the yellow pin is now opposite the other green pin and if it is not he moves the yellow pin as necessary to set off the new rate of travel. If there has been an appreciable change in the rate of travel the deflection board operator reoperates the deflection board and calls off a new deflection and No. 2 changes the deflection accordingly and also resets the parallax correction if there has been a change in parallax. These operations are repeated after each bell. Normally when the target is following a straight course the rate of angular travel will change very slowly and thus no change in deflection will be necessary for several readings. As previously pointed out, when the *GOT* angle is near 90 degrees the angular parallax will change very slowly and it may not be necessary to reset the parallax for several readings.

In order to cut down on the conversation as much as possible, data incidental to the operation of the azimuth computer should not be called off except when there is sufficient change to make it necessary. If arbitrary corrections are to be applied on the azimuth com-

puter, No. 2 places a red pin in scale *D* at the correction called for and then moves the disc carrying scales *C* and *D* until this pin is opposite the other red pin in scale *B*. Thereafter he keeps the two red pins opposite each other at all times and does not use the index of scale *C*. It will be noted from the above that the following corrections have been added algebraically on the device: angular travel during the predicting interval or dead time; deflection for wind, drift and travel during the time of flight; parallax correction; adjustment correction. Corrected azimuths will be at the guns in not more than three seconds from the last tap of the bell. The corrected azimuths as turned out will be far more accurate than can be obtained from a plotting board due to the fact that the errors of plotting have been eliminated and the dead time has been cut down to one-half of the minimum dead time when using the plotting board.

There are many possible variations in the method of operation. For example the deflection board operator may be required to set the red pin indicating deflection instead of calling it off to No. 2 operator. Normally No. 1 will move disc *B* until the yellow pin is opposite the reading occupied by the index of scale *B* on the last reading just as soon as he has checked the travel and reset the green pin. It will then not be necessary for him to move the yellow pin, by moving scale *B*, more than one mil when the new reading comes out. He can quickly detect an error in the azimuth reading since he will know within about one mil of what the azimuth should be. If no change has been reported in the course of the target and there is a large variation in an azimuth received from what was expected, then No. 1 should use the expected azimuth and reject the azimuth which is apparently in error until it is verified by the next reading. Should the target become obscured from the observer No. 1 may continue to use the same rate of change as that indicated by his yellow pin for several readings without appreciable error. Where the angle *GTO* (gun-target-observer) is not over 50 mils it will be found much quicker and easier to apply adjustment corrections in direction in the following manner rather than to use scale *D* on the azimuth computer. As soon as the first splash occurs the observer, having his vertical cross wire on the target at the instant, moves the pointer over to the splash and thereafter tracks the target with the pointer, again jumping a splash when necessary by moving the pointer over to the splash and traversing the instrument until the pointer is back on the target. In this manner automatic corrections are applied without reading or setting anything except the pointer in the instrument. This will reduce the possibility of error in applying corrections and eliminates the necessity of having another observer spot lateral deviations for the purpose of lateral adjustment. Care must be exercised however to prevent application of a double correction. For purpose of illustration let us again assume a four-gun battery firing a salvo every 15 seconds.

The observer jumps to the center of splashes of the first salvo five seconds before the third bell, assuming the time of flight to be 25 seconds and the first salvo to be fired on bell No. 1. The azimuth carrying this correction goes to the azimuth computer on the third bell and the guns are fired with this correction on the fourth bell and the splash occurs five seconds before the sixth bell. It is apparent that the splashes of salvos two and three must be skipped. If the time of flight is 35 seconds it will be necessary to skip the splashes of three salvos before jumping again. This is based on the assumption that a salvo is fired on every bell. To prevent an error in this respect the assistant observer should have a table showing the number of seconds that must elapse for various times of flight before another jump can be made. The observer should notify No. 1 each time he jumps a splash so the variation of the azimuth as actually read from that expected will be accounted for. It is also evident that no correction should be made for a small deviation.

*Corrected Azimuths from Azimuth Instrument Only.* Where the distance from the observer to directing point is comparatively short (not over 100 yards), there is less probability of error if corrected azimuths are read directly from the azimuth instrument in the following manner. The initial deflection, travel during dead time, and parallax correction are determined and added algebraically. The resulting deflection is set off on the pointer in the telescope of the azimuth instrument. The observer tracks the target with the pointer instead of the vertical cross wire. Azimuths are read directly from the instrument to the guns. The observer jumps the first splash and subsequent splashes as outlined in the preceding paragraph. In case the field of view of the telescope is too limited to permit the total correction to be applied on the pointer an additional penciled index may be placed on either side of the main azimuth index at any given number of degrees or mils and these indices labeled RL and LR indicating that one is to be used for a right to left target and the other for a left to right target. The number of degrees or mils offset in this manner will then be subtracted from the total deflection as obtained above.

In order to take care of the change in the rate of change in azimuth the recorder can quickly determine this value by taking the difference between azimuth differences and call it off to the observer who will then move his pointer by this amount after each bell. This method has many advantages over Case II firing. It takes away from the gun pointer the responsibility of jumping splashes and keeping up with the shots in the air so he will know when to jump and permits him to devote his entire attention to setting azimuths and keeping on the aiming point. The azimuth instrument has a much more powerful telescope than the ordinary panoramic sight and therefore the observer can stay on the target with greater ease than the gun pointer. The observer is not interfered with by dust and smoke that

handicap the gun pointer. The guns can be concealed and take advantage of natural defilade in the terrain. There will be less dispersion in direction because each gun pointer is using the same azimuth, whereas in Case II firing with each gun pointer jumping splashes each of the guns will not be firing with the same deflection. This method has been tried with excellent results.

#### COMBINED OPERATION OF ALL DEVICES

In order to eliminate communication lines as much as possible it is desirable that all of the devices described herein be located at the observing station or at least within voice distance. This will permit No. 1 on the set forward point azimuth computer to wear a telephone headset connected directly to the gun pointers or azimuth setters, and the operator of the range percentage corrector to be connected directly to the elevation setters, or if the percentage corrector is not used it will permit the reader on the set forward point range computer to be so connected. Only two telephone lines will be required. As an emergency set up for fixed batteries these two lines should be provided with local batteries in case the common battery system fails. Since these would be direct lines less difficulty should be experienced in keeping them in order than would be the case where a switching system is employed. The number of men required in the range section will vary with different situations, the maximum number being required for Case III. The normal situation would require two for the range finder, two for the azimuth instrument, one for the wind and parallax computer, two for the set forward point range computer, two for the set forward point azimuth computer, one for the deflection board, one for the range percentage corrector and one for the range correction board; thus making a total of twelve when Case III is being employed. Only seven men would be necessary for Case II firing.

#### CONSTRUCTION NOTES

Twenty complete sets of this equipment were constructed for emergency use in the Harbor Defenses of Manila and Subic Bays. All charts and scales were blue printed; however, blue printing of circular scales is not entirely satisfactory due to the tendency of blue print paper to distort more in one direction than another. A far more satisfactory method would be to print the scales directly on the various discs, provided of course that they were to be made in sufficient quantity to justify this procedure. For a small quantity it would be better to glue drawing paper to the discs and construct the scales after gluing to avoid distortion. When fastening sheets of blue print paper to wood or cardboard it was found that less distortion would result if lacquer were used instead of glue. Care must be exercised to smooth the paper quickly from the center outward to prevent wrinkles. The writer of this article will be happy to answer any questions regarding this equipment, and to hear of the results obtained in target practices where it is used.



# Motor Marches and Maneuvers<sup>\*</sup>

1. The following notes and references pertaining to motor marches and maneuvers are considered of practical value to regimental staff officers. Information has been gathered from many sources and should serve a useful purpose. No effort has been made, however, to cover the entire subject in this single "item."

2. Basic FM 25-10, "Motor Transport," includes not only information on logistics of value to the staff officers of an anti-aircraft regiment, but also sets forth in detail information on the care and use of motor transportation. One suggestion, not set forth in the text, is that a one hundred mile test-run be made with each new vehicle as soon as it is received by a regiment. (See QM Motor Transport Technical Service Bulletin ZD-5.) On this test-run over a locally specified route, the mechanics, and if possible, the motor transport officer, should accompany the vehicle to discover its peculiarities. During the test defects may be revealed, minor repairs and adjustments made, and general information on the condition of the truck obtained. By this means, new trucks, which normally are put in regular service immediately upon receipt, can be given "preventive" maintenance at the very outset, so that such mishaps as burned out generators are avoided.

3. Tables of Organization are designed to enable each section of the battery to transport its own personnel and equipment in the assigned vehicles. Each battery commander should make a *load chart* enumerating the articles that each vehicle will carry on the march. By so doing, he will know exactly how much equipment can actually be taken in the field. Among other items which must be transported is ammunition, as authorized in Table of Basic Allowances, and as shown on the load chart set forth in appendix II, FM 4-105. Vehicles should be loaded and a short test or shake-

down march made to insure proper loading, security of loads, accessibility of equipment for dispatch in unloading, and the ability to carry all necessary equipment.

4. Useful data on *field orders* can be found in par. 318, FM 4-105, in FM 25-10, in FM 101-5, and in Problem No. 8, Conference Course for Troop Schools, Anti-aircraft, which will soon be distributed to all anti-aircraft regiments by The Coast Artillery School.

5. a. An organization away from its home station, whether on a maneuver, march, or convoy, should always be accompanied by one officer who has been appointed an *agent finance officer*. He should obtain funds in advance to meet emergencies which invariably arise.

b. The following publications contain all information necessary to acquaint an agent finance officer with the proper method of carrying out his duties away from a garrison:

AR 35-6300, "Procurement of Supplies, Services, and Rentals, by Organizations Away from Home Stations."

Paragraph 197, TM 12-250, "Administration."

TM 10-325, "Agent Officers."

AR 35-320, "Agent Officers."

Paragraph 5 b, AR 30-1415, "Informal (Rental) Agreement."

Paragraph 1, AR 35-1040, "Vouchers Pertaining to Money Accounts."

Paragraph 3 c (2), AR 30-1425 (W.D. Q.M.C. Forms 289, 290, or 291), "Release."

c. Many of the references listed above contain repetitious information. Notwithstanding, all are listed to bring together compactly all pertinent data.

d. An officer appointed agent finance officer should study the foregoing references, and then consult the local Finance Officer and Quartermaster Purchasing

<sup>\*</sup>Reprinted from *Information Bulletin of the Coast Artillery School*, Bulletin No. 2, April 9, 1941.

Agent for advice and assistance in interpreting the regulations.

6. a. *Gasoline*, and spare parts listed on Treasury Procurement Schedule<sup>1</sup> are rarely, if ever, purchased for cash. Before leaving the home station, coupon books and forms for procuring gasoline in small quantities should be obtained from the Quartermaster Purchasing Agent. These coupons can be used only at filling stations at which is sold the particular brand of gasoline distributed by the contractor who holds the current government contract in that locality. Obtaining gasoline from these retail sources is sometimes difficult because of complications introduced by the various tax laws.

b. Gasoline in large quantities can be procured along the route either from government agencies or from the wholesale distributors who hold government contracts. Methods of procurement must be carefully planned and *checked by the advance agent* to insure success.

c. Purchases of gasoline en route may be paid for in cash, if an agent finance officer accompanies the movement and is *authorized to expend funds for this purpose*. More often, especially in peace time, the purchase is made "on account," the vendor being reimbursed by the Finance Officer of the home station. In this event, the necessary vouchers and tax exemption certificates should be obtained from the Quartermaster of the home station to facilitate completion of the transaction.

7. a. When purchase of the component articles of the ration is made in the open market from organization mess funds in quantities which (together with those purchased from the Quartermaster) do not exceed the ration allowance, but which cost in excess of the component articles of the ration (at the prices used in figuring the ration and savings account), AR 30-2210 provides that the organization fund be reimbursed for the excess cost. The mess officer should familiarize himself with the proper procedure in this case before the start of the movement.

b. Troops going on a march may submit, prior to departure, a ration return "in advance" for such period as the commanding officer may deem necessary. This period should be more than adequate to meet all emergencies. The ration return should be made up in the regular manner, for whatever advance period is decided upon, and be submitted to the Quartermaster who, in turn, will make up a ration and savings account and forward it, after signature by the Commanding Officer, to the Finance Officer. The latter officer will issue a check in the amount due the organization. The value of the check will be dependent upon the number of days estimated for the march. However, if the march terminates earlier than was anticipated, then a proportionate amount of the money must be returned. *Example.*—An Organization draws the money value of

five days' rations in advance prior to departure on a march; the march is actually completed in four days. Then only four days' rations have been earned and the fifth day's allowance must be returned to the finance officer.

c. References may be found in AR 30-2210:

- (1) Purchases, from whom made, paragraph 18 (For certificate, see par. 130, AR 210-50);
- (2) Issues on march and/or during maneuvers, paragraph 21;
- (3) Troops detached, paragraph 25.

d. When rations are purchased in the open market, for which reimbursement is expected under the provisions of par. 25, AR 30-2210, it should be kept in mind that reimbursement is allowed *only* for those items which are *actually* components of the ration. *Example.*—An officer and 30 men, purchasing in the open market 25 pounds of lamb, will receive no reimbursement under the provisions of the foregoing regulation, because the ration component is beef, bacon, chicken or pork, *and not lamb*. Furthermore, if a cut of beef is purchased, it must be billed as so many pounds of beef and not as pot roast or some other cut.

8. a. An officer ordered to *procure a camp site*, a plot for a searchlight position, or land for any purpose, should follow the procedure set forth in the references listed in sub-paragraph 5 b above. The officer and the property owner should tour the ground in order to determine the initial condition of the property. The officer should prepare an informal (pen and ink) account of his observations, which both parties should sign.

b. In making a selection for a camp or bivouac, consideration must be given to the availability of fuel, potable water, drainage, latrines, bathing facilities, and shelter for personnel. There should also be firm and sufficient parking ground for vehicles, a suitable location for repair facilities, and in wartime, protection from aerial observation. Where permission can be obtained, National Guard armories, C.C.C. camps, fair grounds, and school houses, are recommended as appropriate sites. The site should be located near the prescribed route, so that the march may be resumed with ease. The new site should be reconnoitered well in advance.

9. The organization commander should have an *inspection* made of the camp site, its buildings and facilities, shortly before the troops leave. If possible, the owner or caretaker of the site should be present at this inspection, and should be requested to sign a report of inspection. In any case, the owner should be furnished a duplicate copy of the inspection report.

10. The *size of a camp site*<sup>2</sup> required can be figured on the basis of ten square yards per man and 150 square yards per vehicle, for a one night camp and fifty square yards per man and 300 square yards per vehicle, for a semi-permanent camp.

<sup>1</sup>This Schedule should be procured and procedure necessary to obtain these items on credit should be ascertained from the local Q.M. Purchasing Agent prior to departure from home station.

<sup>2</sup>From *Army Engineering* (Mitchell).

11. Should *claims* arise after a maneuver, refer to AR 30-1430.

12. In general, a *daily ration* (including ice) for a mobile regiment of antiaircraft artillery can be transported in from two to four trucks. The ration averages five pounds.

13. Each kitchen carries as part of its normal load a limited supply of *water for drinking and cooking*. Resupply is effected either locally or by sending empty containers in regimental transportation to water distributing points. Water supply needs are computed on the basis of a minimum of one gallon per man per day on the march, and five gallons per man per day in camp. If local resources are insufficient, army engineers establish water supply points, using either tank trucks or railroad tank cars. Drinking and cooking water obtained from sources not approved by the surgeon must be chlorinated prior to use.

14. Batteries, battalions and regiments contain a maintenance section equipped for making *minor repairs* in the field. To assist the regimental personnel, an additional maintenance echelon is provided in the corps service troops. Except in the case of ordnance matériel, equipment which can not be repaired or replaced promptly by these agencies is turned over to army maintenance establishments. Other equipment is issued by the army to replace that which is unserviceable. Necessary repairs of ordnance matériel will be made, if practicable by corps ordnance companies.

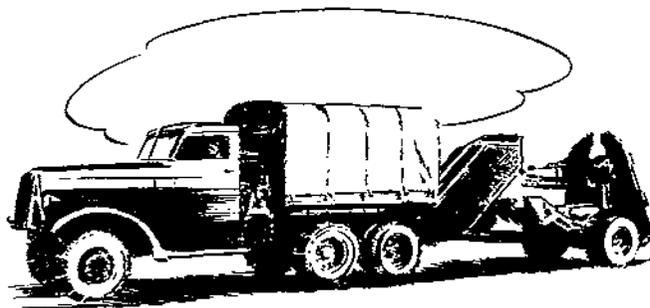
15. *Tables and charts* applicable to a movement or march may be found in Chapter 6, FM 4-155. March graphs and march tables are discussed in paragraph 75, FM 25-10.

16. During marches, one officer, who is *authorized to purchase* motor vehicle spare parts not carried with the column, and other similar items, should always bring up the rear of the column. If both the S-4 and MTO are on other duties, some officer at the rear of the column should be given funds, proper vouchers, and blank forms so that the necessary items can be purchased. (See subpar. 5 b, above.)

17. Should the Quartermaster issue *rations in containers* too large to be divided among batteries, an attempt might be made to obtain authority to have him issue rations in advance, so that cans of pickles, boxes of salt and pepper, and like items, will not have to be divided many ways at a distributing point, where extra containers are non-existent. If circumstances require the purchase of rations in the field, the responsible officer should purchase rations in containers of such size that distribution may be made to batteries without opening the containers and dividing their contents.

18. In case of *motor vehicle accidents* on the march, refer to par. 17, AR 850-15.

19. In case it becomes necessary to place personnel in *civilian hospitals* or to procure civilian medical treatment, see pars. 3 a and 3 k, AR 40-505.



# Steeplechase for Soldiers

There's something new under the sun, and of all things, in the fields of aids-to-training. And so we introduce the *obstacle course*, a little contraption that has come from the Engineer replacement center at Fort Belvoir and which we believe is liable to spread to other training centers far and wide.

The obstacle course is a steeplechase for soldiers. It consists of a series of obstacles, passage of which involves all the standard forms of manual locomotion—running, walking, crawling, creeping, climbing, jumping, dropping, swinging, hopping—and another unclassified form (resembling dragging) which your reporter used in negotiating the last three obstacles on the course.

The characteristics of the obstacle course and the manner in which it operates are made clear in the accompanying illustrations. The length of the course, and the number, location, and caliber of the various obstacles are subject only to the ingenuity of the designer. The model we show is about 400 yards long, and it uses the automobile-tire device of the football coach, the scaling wall of the fireman, the swing of the playground, the breastworks of the field manuals, and various culverts, ditches, catwalks, and hurdles. As we say, there's no limit: we've already conjured up in our minds a couple of hazards which will make the ones illustrated look like minor undulations on a putting green.

The course is wide enough to accommodate several men at once. Thus, the thing can be run off as a race, bringing in the great American element of direct competition. Or, the course can be run against time—a method which your reporter does not recommend, but the one which he had to practice.

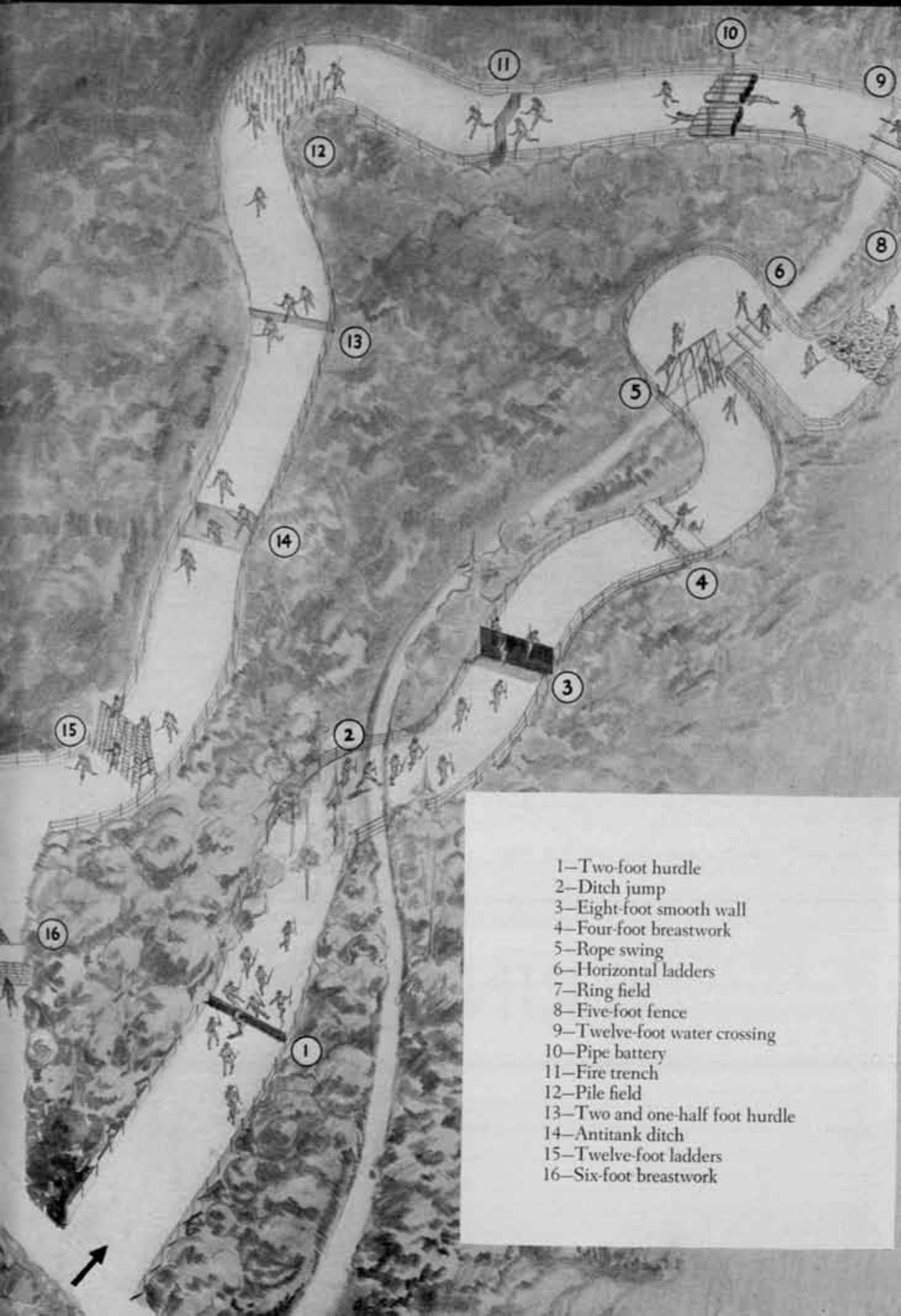
The trainees may be sent through the course under various conditions. The payoff comes when they take it with rifle and pack. Our photographs show that interesting condition.

Soldiers eat up the obstacle course. They like the hazards and the element of competition, and they like the hilarious situations which sometimes arise. As, for example, when some husky unfortunate misjudges the arc of swing and drops in the drink.

In addition to being popular, the obstacle course is valuable. It gives a soldier the exercise he needs, and at the same time hardens him and trains him in handling himself and his personal equipment in the kind of awkward positions which he must of necessity assume in the field. For example, the deft technique being displayed by the men crossing over the narrow beams may stand them in good stead some day when they have to cross a footbridge in a hurry.

There is no claim that the obstacle course has revolutionized training. But it has its merits, and it's likely to become a fixture at the training centers.

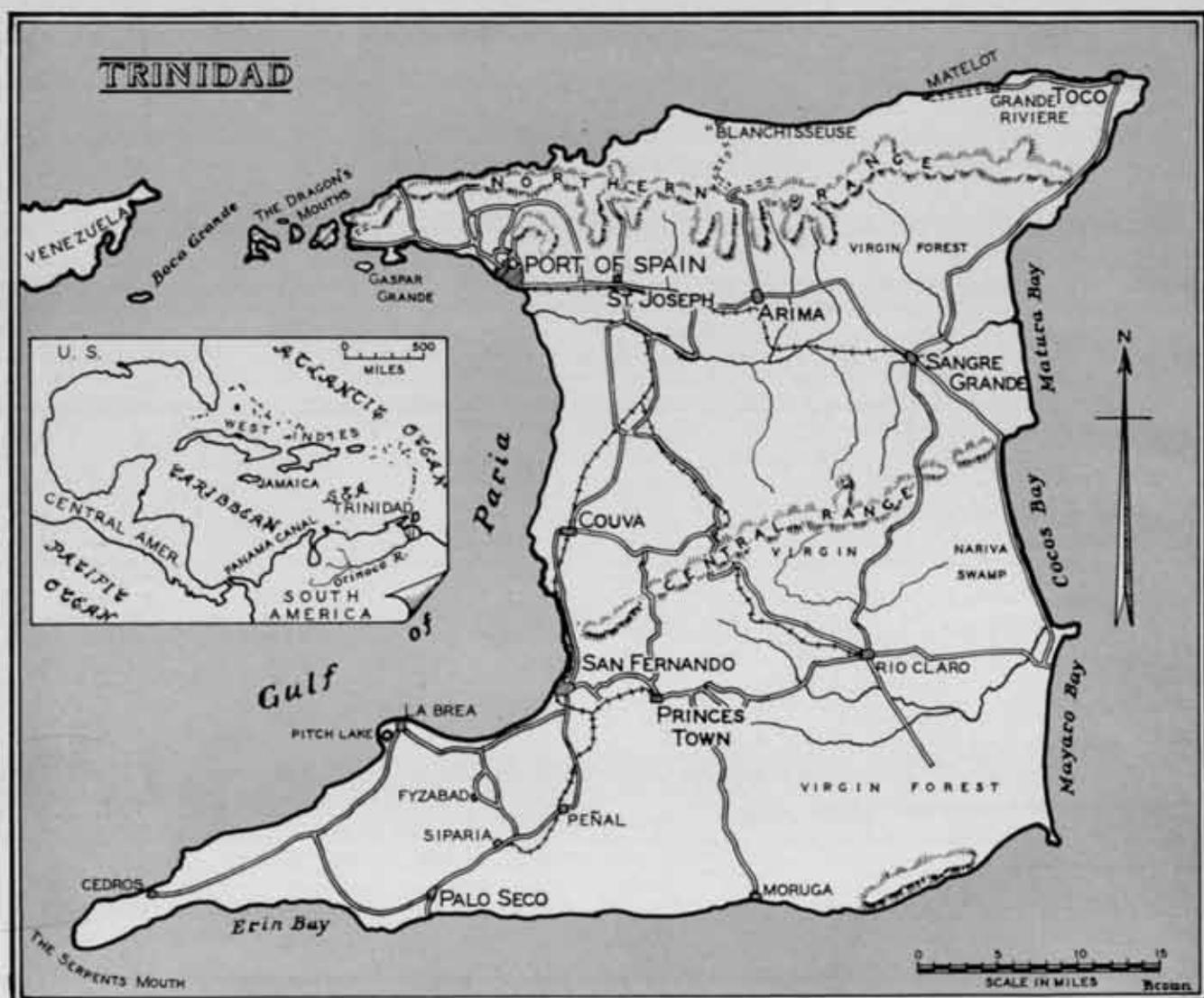




- 1—Two-foot hurdle
- 2—Ditch jump
- 3—Eight-foot smooth wall
- 4—Four-foot breastwork
- 5—Rope swing
- 6—Horizontal ladders
- 7—Ring field
- 8—Five-foot fence
- 9—Twelve-foot water crossing
- 10—Pipe battery
- 11—Fire trench
- 12—Pile field
- 13—Two and one-half foot hurdle
- 14—Antitank ditch
- 15—Twelve-foot ladders
- 16—Six-foot breastwork

# Around The Bases

Anonymous

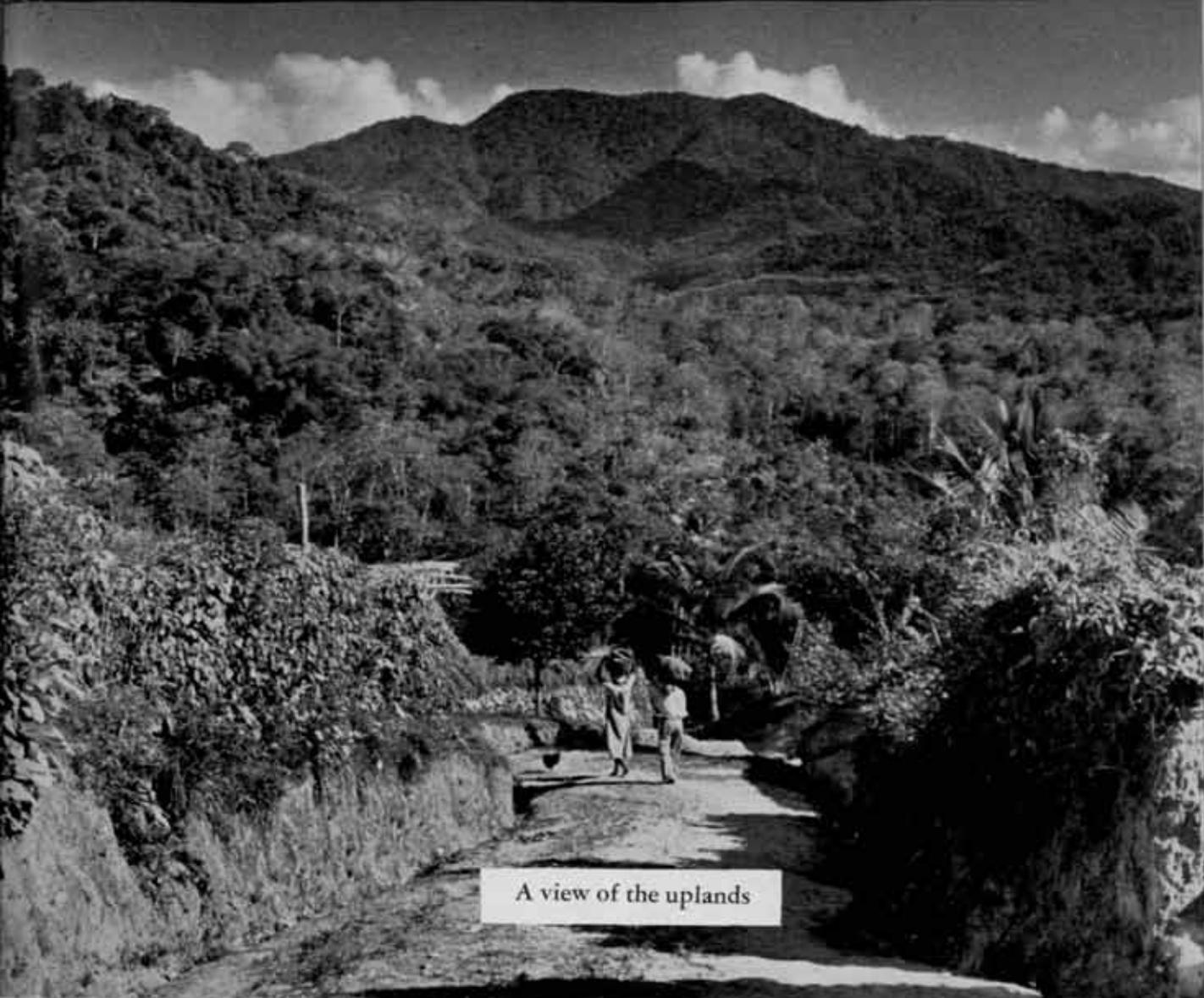


## TRINIDAD

Trinidad is shaped like a distorted rectangle, the distortion being in the form of peninsulas which extend out from each of the rectangle's corners. On the western side of the island, the peninsulas reach to within seventeen miles of the South American continent, thus helping to form the almost-land-locked Gulf of Paria. Sailing into Port of Spain on the western coast of Trinidad on a clear day, you will be able to see the hills of the mainland, far to the west. You may be able at the same time to *smell something*—something "humid

and like old water." That will be the great Orinoco River, emptying into the Atlantic a hundred miles to the south. At least, the natives will tell you it's the Orinoco.

Port of Spain (the name is more romantic than the fact) seems destined to become the Newport News for Trinidad's Monroe, and hence deserves a word here. It is the capital city, the trading center of the island, and with its 89,000 inhabitants it is the largest city in the West Indies (Kingston, Jamaica, dissenting). It lies



A view of the uplands



Street scene in Port of Spain

on the Gulf of Paria, and has the best harbor in Trinidad (but in this case, the best is not so good). It has a few excellent hotels (\$6.00 per day, including bath, meals, tea), many quaint shops (the Hindu touch), and many many bicycles (traveling of course on the wrong side of the road). According to *National Geographic* Port of Spain is "enigmatic," but according to my informant the town just naturally is too hot by day and too dull by night.

The other cities and towns of the island do not look like much alongside the metropolis, Port of Spain. There is San Fernando (population, 16,000) on the southern part of the west coast, the shipping point for the oil exports. And there is Princes Town (population 6,000), the center of the sugar cane industry. Finally, up near the new base, there are two other towns in the 6,000-population class: Arima and Tunapuna. So far as I can ascertain, these are simply places to pass through in order to get to Port of Spain.

Trinidad averages about thirty-seven miles in width (east-west), and about fifty miles in length (north-south). That gives the island an area of about 1,850 square miles—about the size of Delaware. An estimate of the terrain involved in those 1,850 square miles may be made by reference to the map. Trinidad is no mass of mountains like Jamaica but it does have two ranges: one running along the northern coast, with peaks up to 3,000 feet high; and another, much lower, bisecting the island from east to west. The coasts are regular and often rocky, with no large natural harbors and few good bathing beaches. On the northern and eastern coasts, the prevailing trade winds whip up a strong surf. About half the island (roughly, the eastern half) is covered with virgin forests (out of which the Engineers are now engaged in carving certain of the base installations). There are about 2,000 miles of black-top highways, and about 120 miles of standard-gauge railways. This communication net is located so as to serve chiefly the western part of the island.

Trinidad is British down to the details, including the detail of port-lane driving. This item is worth a moment, since it looks as though an automobile will be as essential to life in Trinidad as to life at Monroe. However, and this is the rub, Trinidadian law provides not only for left-lane driving; it provides further that all cars be of the steering-wheel-on-the-right type. The chances are that that particular provision of the law will be waived in the cases of the cars we will want to bring in; but, anyone toying with the idea of disposing of his car on the island, as per the profitable Hawaiian custom, had better forget it: there'll be no (legitimate) market for cars with left-hand drive. I'm wondering, too, about the situation which will arise if our Army post sticks to American right-lane driving. I've been trying to envision a sort of inverted cloverleaf, which, as you enter the post, will shift you painlessly from the wrong lane to the right one.

We may as well wash up this subject of automobiles

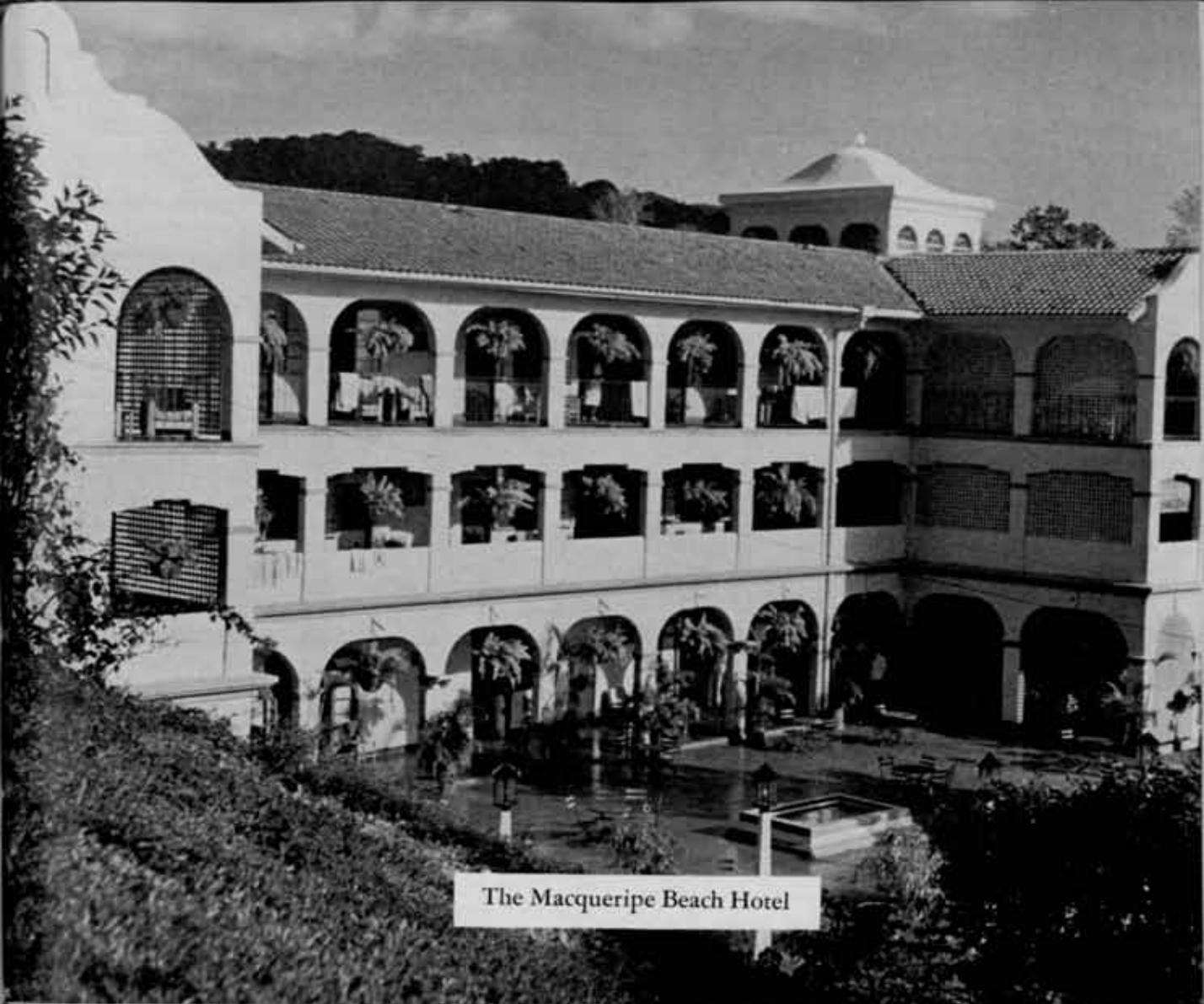
while we're at it. They'll be rather expensive to run, what with a license coming to about \$30.00, and gasoline to around thirty cents per gallon. And now for a queer one: radios in automobiles are unlawful. The reasoning behind this blue law escapes me, but possibly it ties in with the fact that insurance rates are low.

Trinidad has a population of about 460,000, which means a population density of about 250 per square mile. According to West Indian standards, that's nothing to get excited about, but it's more than twice the figure for that standard of comparison already cited, Delaware. To make matters worse, and to crystallize the impression of over-population, there is the fact that at least half the island (those virgin forests) is not habitable. But, the abstract thought of how many Trinidadians there are is not nearly as interesting as the kind of people they are.

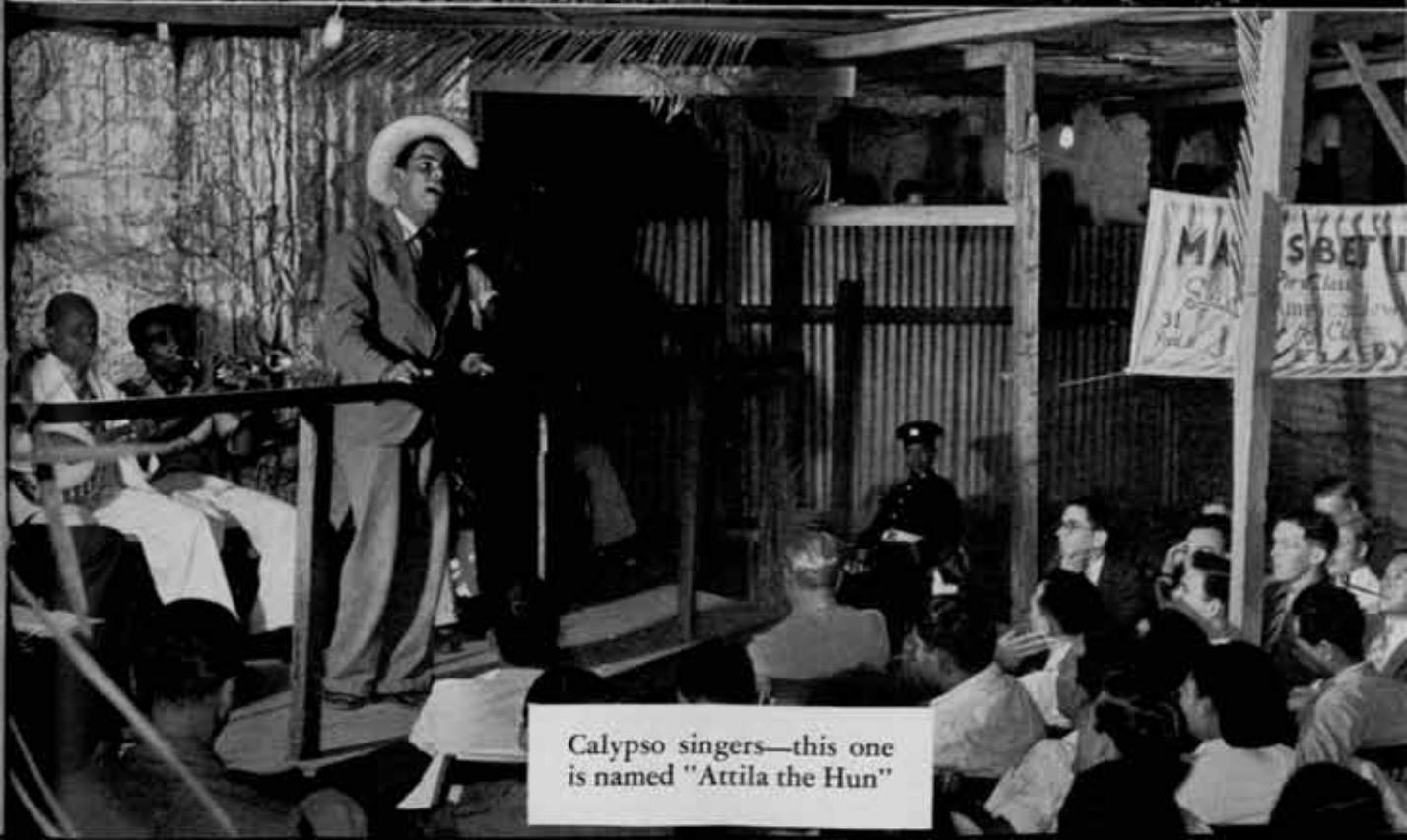
To begin with, only a very few of them (the usual two per cent) are white. About two-thirds of them are Negro and the remaining one-third are "orientals." The Negroes, of course, are the descendants of the slaves who manned the great plantations during the fabulous West Indian era of the seventeenth and eighteenth centuries. The orientals have come chiefly from India. They began to be brought over (under a system of indenture) soon after the slaves had been freed (1838) and while the latter, in the first flush of emancipation, were demanding what the planters considered to be exorbitant wages (and hours). Thus the orientals originally were strike-breakers of a sort. However, in the course of the years they worked themselves into all phases of the economic life of the island.

Most of the orientals are Hindus, but there is a scattering of Mohammedans among them. They practice their own religions (you'll notice the little temples built on the hills) and speak their own languages among themselves. They retain many of their old customs, including the one of enhancing feminine beauty by screwing dime-sized buttons onto the left side of the nose. Along the way they've picked up a few new tricks, including the one of dealing with tourists (especially in the quaint shops of Port of Spain) on a what-the-traffic-will-bear basis. It's the fashion to look with sympathy on the orientals and to lament the sad fate which has separated them from their homeland, but the fact is that they know a good thing when they see it—they'd rather compete with West Indian Negroes than with other Hindus, and most of them wouldn't return to India if you paid them.

As for the Negroes, most of their customs go back to the distant, superstitious past. I don't know about the Voodoo; but the "Evil Eye" is said to be a thriving institution likely to put the hex on anyone or anything at anytime. If the Evil Eye doesn't get you, the "Jumbies" no doubt will. These, so far as I can make out, are nothing but ordinary ghosts parading under fancy names. The Negroes of Trinidad also like large celebrations best. For example, there is the practice



The Macqueripe Beach Hotel



Calypso singers—this one is named "Attila the Hun"

known as "Whoopsin," indulged in at carnival time. This is a delicate little dance in which large groups shuffle through the streets for hours, or even days, on end, singing and marching to the elemental rhythm of an improvised drum. (As a matter of fact, you'll probably run into Whoopsin at your first dance at the club. The orchestra will get up and lead the procession out on a Whoopsin bender touring the entire countryside and getting back half an hour later. You can tell me all about it later, because that's the dance I'll be sitting out.)

The government of Trinidad is cast in the usual West Indian mold. The essence of this system is to allow some limited popular representation, but not enough to endanger control-by-appointment. Thus, in Trinidad we see a "legislative assembly" presided over by the Governor (Crown appointed) and consisting of 25 other members—seven of whom are elected.

Trinidad has a tropical climate, but it is neither as wet nor as hot as you might think. That is, there are none of those 200-inch-per-year rainfalls in Trinidad, and not many of those 100-degrees-in-the-shade days. There is a wet season (June to December) when the rainfall averages about eight inches per month; and a dry season (January to May) when the average is about three inches per month. The grand average for the year is about seventy inches—comparable to the situation at Asheville, or Mobile, or Seattle. The wet season is also the hot season, the temperature then averaging about eighty-five degrees by day, and about seventy-five degrees by night. Finally, the wet-hot season is also the mosquito-malaria season; and so, all in all, I conclude that in Trinidad one will be very happy to see the dry season arrive. The dry season averages perhaps five degrees cooler, day and night, than the wet season. It (the dry season) is characterized by hot mornings, cool afternoons (due to a breeze which is supposed to spring up about midday), and sleepable nights.

Another sidelight on the climate is furnished by a glance at what the well-dressed Trinidadian (white) wears. In a nutshell, the situation is this: he dresses the year around about the way a Louisianian or Mississippian dresses in high summer. Palm beaches, linens, seersuckers—those are the things. Sun helmets are handy for keeping glare away from the eyes; but they are not really necessary because (the guide book speaking, of course) sunstrokes are unknown in Trinidad. Formal evening wear in Trinidad consists of dark trousers with white monkey jacket. I suspect that the object then becomes to place yourself downstream from an electric fan.

Trinidad operates on a dollar system (85 cents American getting you one dollar Trinidad), but as almost everywhere now, there is no free and open exchange. That is, it is difficult to get a Trinidadian dollar out of

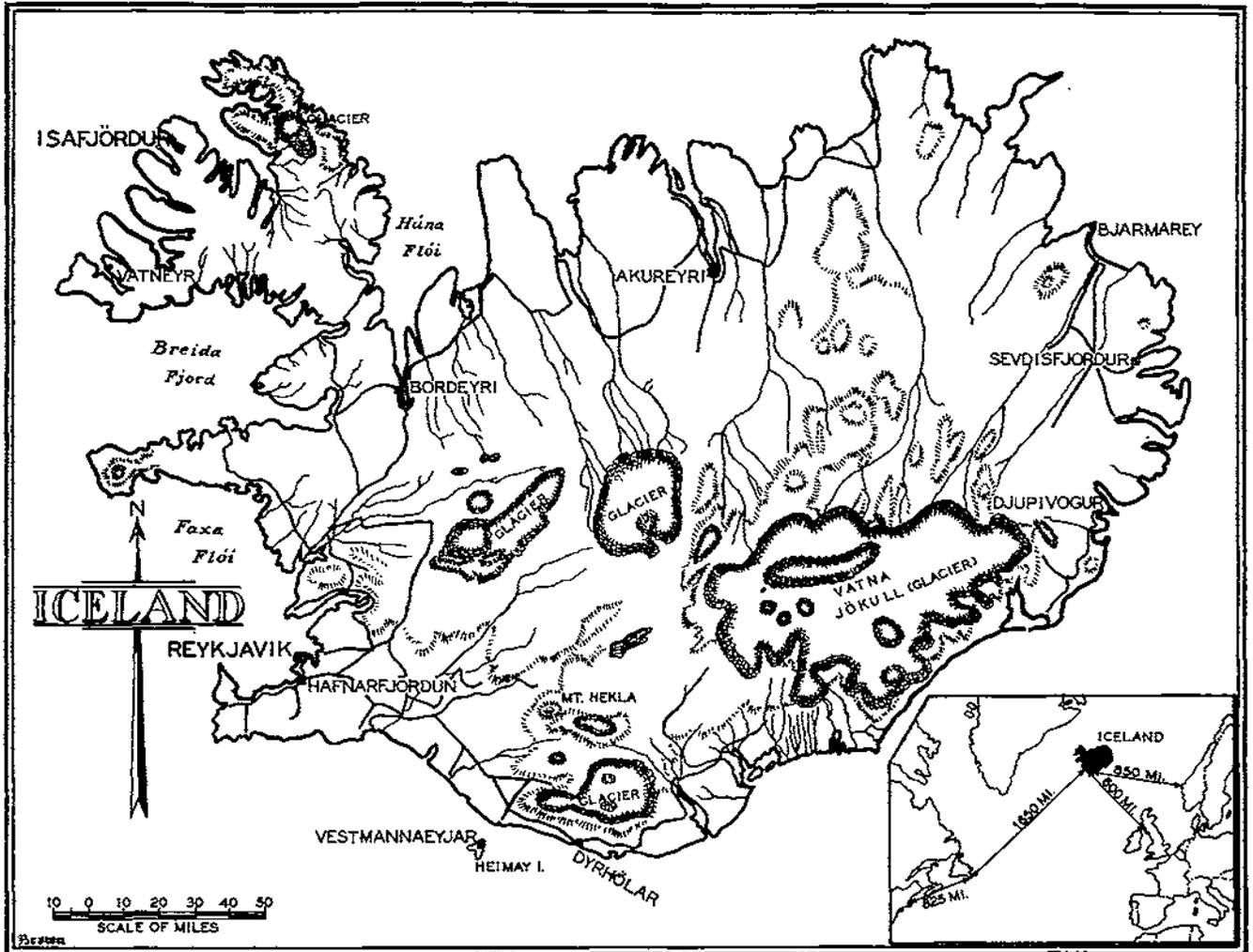
the island (but, of course, letting an American dollar in is something else again). Prices are high—my informant says about fifty per cent higher than in the States. For examples: A Chevrolet sedan will cost you \$1,800; a can of Prince Albert, sixty cents; a package of Camels, thirty-five cents; a postage stamp, six cents. These fancy prices (largely the result of the import taxes common to all West Indian islands) may be of academic interest only to us who will be doing business at commissary and post exchange; but meanwhile, the troops who now are down there getting things ready for us are resorting to such things as smoking (and even liking) Trinidad-made cigarettes.

This is a paragraph designed to appeal to the feminine element of The JOURNAL's clientele. It (the paragraph) has to do with housekeeping, an art which heretofore has escaped glorification in our pages. Well, for the sum of \$10.00 per month (pay no more) you will have no trouble in getting a Trinidadian maid. She will be a maid-in-the-rough; but, by working diligently and patiently, you should be able to make an acceptable servant of her by the time you come to turn her over to your successor. Cooking in Trinidad is chiefly by the kerosene stove method; but it may be that the quarters on the post will have electric ranges. Again it may be different on the post, but over the island at large, running hot water is practically unknown. Bath tubs also are scarce (it's a shower-bath culture), and so are radios (it's a short-wave country). Dressmakers are cheap (fifty cents per day), women's clothes are hard to buy (especially shoes and hats), meat is expensive, mildew is a problem, local vegetables are of poor quality, local chickens are tough.

Trinidad got off to a late start in the business of catering to the tourist trade, and as a result its facilities for recreation and sport are not up to the standard of some other West Indian islands. There are a few interesting drives, including the one south from Port of Spain to the fabulous Pitch Lake. This has an area of about one hundred acres, and looks like a big piece of wrinkled elephant skin. For some reason or other, the mountains seem to get but little play in the guide books, in sharp contrast to the situation in Jamaica. There are a few racetracks, a few tennis courts, and one or two golf courses over the island. As has been indicated, the beaches in general are not so good for bathing, but some of them must be better than others, and certainly better than no beaches at all. There is little good fishing on the island, and the possibilities of deep-sea fishing have not been extensively developed. The only thing there is to hunt is the alligator, and that's a little too much like shooting fish for me. To conclude this dismal report on the recreational situation, I'm forced to report that the national pastime is cricket (a situation which I trust will correct itself when American softball gets going).

(Photos from *Life*)

# ICELAND



There is this at least about this august series of sketches: if it is too hot for you in the place we're visiting this time, all you need do is wait until the next issue and we'll take you somewhere where it will be too cold. For example, our last stop was Trinidad from which we hope you escaped without malaria, and here we are today at Iceland where I hope you do not catch your death of the sniffles (we want you on hand for another dive into the Caribbean in our next number).

Iceland is a hard little nut, lying just below the Arctic Circle and being almost as devoid of cover and comfort as Greenland. It (Iceland) is oval-shaped, except that off its northwestern corner there dangles an appendix reminiscent of the Placentia Peninsula of Newfoundland. The total area of the island is about 40,000 square miles, of which about one-quarter is in the appendix. This makes Iceland about as large as Newfoundland, or for those of you who came in late on my series and missed the tour of Newfoundland, about as large as Ohio. The total population of Iceland is about 120,000. The resultant figure of three inhabitants per square mile is a sight for eyes grown sore from looking

at the hundreds-of-people-per-square-mile in the islands of the Caribbean. To say it all less dramatically, Iceland has about the same density of population as Wyoming or Arizona.

Iceland sometimes is regarded as a miniature of Greenland and while that conception definitely is erroneous, there is one point of similarity between the two—both of them consist of high inland plateaus rimmed by narrow coastal lowlands. In the case of Greenland the inland plateau is uninhabitable because of ice and snow. In the case of Iceland, the inland plateau is uninhabited and is almost uninhabitable because of several things, chief among them volcanos and glaciers. In both Greenland and Iceland the populated areas are confined to the coastal lowlands, and making a living comes hard indeed. In the case of Iceland the ratio of inhabited areas to noninhabited areas is no better than one to four.

The great interior plateau of Iceland is a rough desert broken by lakes and depressions and peaks. The general elevation of the plateau is around 3,000 feet, with the peaks rising above 5,000 feet. The plateau of the

northwestern appendix is similar to the one of the island proper, but is lower (about 2,000 feet) and somewhat less barren. The main plateau offers a variety of types of desolation, most of them arising from the island's 107 volcanos on the one hand or from its 120 glaciers on the other.

Iceland's volcanos rate a separate paragraph in any piece such as this, for Iceland is literally made of volcanic stuff. The volcanos and their lava beds cover about one-eighth of the island's surface, with the lava beds giving rise to the dust and ash storms which help to make the inland plateau completely barren and which plague even the populated lowlands. Several of the volcanos are still classed as active, and in historic time there have been several catastrophic eruptions. I hope you bring back no eyewitness account of any such thing, but if you have a hankering toward amateur volcanology you will find Iceland made to order. For example, you will find there numerous specimens of each of the three classical forms of volcanic craters—items of information which should come in handy if you ever find yourself on a quiz program.

The volcanic nature of Iceland is evident in other forms: in hot springs and geysers and boiling mud lakes—and earthquakes. The hot springs occur over the entire island, but they are especially prevalent in the southwest. The water from the springs comes up a little below the boiling point. Some minor use is made of the springs in the way of heating buildings and there always is talk of much more extensive efforts in that direction. Meanwhile, the geysers, some of which approach Old Faithful in size (but not in grandeur) form one of the island's sights-worth-seeing.

The glaciers of Iceland cover another one-eighth of its area but are small change compared to other glaciers we have met (*i.e.*, in Greenland). The Iceland ones occur in patches, scattered over the inland desert. The largest one by far is the Vatna, which occupies a large part of the southeastern corner of the island. However, the Vatna like all other glaciers in Iceland is "dead"—that is, its ooings melt away before they can drop into the sea as icebergs. The melting glaciers are the sources of rivers of yellowish-brown waters which pour, sometimes in torrents, down from the plateau into the sea. These rivers, short and steep and often large, hold great possibilities for hydroelectric developments—a field in which today the surface has merely been scratched.

Along the northern and eastern coasts the great inland plateau extends almost to the sea, leaving only a very narrow coastal plain. However, in the south and west, the plain is broader. This condition, coupled with considerations of climate, has resulted in a concentration of the island's population on the southwestern coastal lowlands. However, even in localities where the plateau rises precipitously from the sea, there are habitable areas: namely, the lowlands of the valleys

which have been cut through the plateau by the streams.

The southern coast of Iceland is smooth and regular, but otherwise the island's coasts are about as rough and deeply indented as any you could mention. These indentations, or fjords, have been carved by the streams. They now give the island a multitude of good but small harbors—a condition favorable to the business of fishing.

In the matter of climate, Iceland finds itself between two streams. On the west and south, the coasts are touched by the fringes of the Gulf Stream, and the resulting climate is mild and damp. On the north and east the coasts are touched by the fringes of the currents flowing down from the polar regions, and the resulting climate is colder and in the north drier. As a matter of fact, if the wind conditions are right, the same ice-laden current which perpetually blocks the eastern coast of Greenland is likely to bear on down on Iceland, blocking the latter's northern coast. That phenomenon occurs perhaps once in six or eight years.

Expressed more definitely, the situation as regards climate is this—the coldest month is March, and the warmest is July. In the southwestern part of the island, where most of the people live, the average winter temperatures are around thirty-two degrees, and the average summer temperatures around fifty degrees. The corresponding figures for the north and east coasts are thirty-one and forty-three degrees respectively. It is clear that houses must be heated throughout the year, and, in fact, freezing is likely to occur at any time.

The rainfall over the island is more variable than the temperature. Over the southwest the figure is about thirty inches per year (as for Iowa); along the eastern coast it is about fifty inches per year (as for Washington, D. C.); and along the northern coast about sixteen inches per year (as for western Kansas). Snowfall is likely to be heavy enough to make the skiing good, but except in the north not so heavy as to block the roads. Fogs and mists are prevalent in the east, but in the southwest the atmosphere is usually clear. High winds are common, and as has been mentioned they sometimes turn into dust-and-ash storms during which the pumice from the plateau is blown down onto the lowlands. In general, Iceland lies in an area of chronic "low" pressure, which is my hydrological consultant's way of saying that the climate is subject to sudden unpredictable changes. All in all, I conclude that the climate cannot be rated unqualifiedly as healthful. It predisposes somewhat to ills of the tuberculosis class.

As I have indicated, all of the people of Iceland live on the coastal lowlands, and most of them live on the southwestern coastal lowlands. Reykjavik, the capital, lies at the southwestern corner of the island and its 40,000 people account for more than one-third of the total population. Reykjavik is the only large town on the island. It has a hotel, electric lights and motion pictures, and is the island center for business, govern-

ment, education, religion, commerce. After Reykjavik, the largest towns are of the 2,000-5,000 inhabitants class. Most of these are fishing centers and during the herring season certain of them may swell to double their normal populations. The towns all have one item in common—jaw-breaking names—Hafnarfjörðun (almost a part of Reykjavik), Akureyri (a fishing center on the north coast), Isafjörður (a fishing and trading center on the west coast), and Vestmannaeyjar (a fishing center on the island of Heimay off the southern coast).

The people of Iceland are the descendants of the tenth-century Scandinavians who discovered and homesteaded the island. In the course of the centuries the people have become true "Icelanders," the name by which they always refer to themselves. Their history has been turbulent. On occasion the population has been decimated by plagues, eruptions, floods, earthquakes, pirate raids, and emigrations. However, during recent centuries there has been no important immigration, nature has taken its course, and there has resulted a remarkable ethnic uniformity among the Icelanders. Some observers state that on this island the ideal of man-to-man equality has been approached closer than in any other land on earth.

Iceland originally was a dependency of Norway, but as a by-play to some royal marriages it early swung into the orbit of—and was annexed by—Denmark. There were many ups and downs, but that status—a Danish dependency—was maintained for hundreds of years. Then in 1918 Iceland negotiated its full sovereignty. It continued to function under the Danish Crown, but adopted its own flag and arms. The language of the island is Icelandic, a throwback to tenth-century Scandinavian. However, in Reykjavik, considerable English is spoken. The island's religion is Lutheran.

Another impression I get is that the cost of living in Iceland is high, indeed. The island must import a large part of its needs, and of course its facilities (in the way of housing, etc.) are not geared to any surplus population. That being the situation, things are bound to come high. But high or low, you'll find the medium of exchange to be the Icelandic *kronur*, a piece of money that comes to fifteen cents, our money. For chicken-feed, the Icelanders use a thing called the *aura*—one hundred of these make one *kronur*.

Icelanders view with pride a great many things—the

island has no illiterates, no prostitutes, no unemployed, no soldiers or sailors, no railroads, no breweries; it has the oldest parliamentary tradition in the world, and it catches more fish per head than any other country.

Communications over the island are poor. As in Greenland if you wish to go from one point on the coast to another point far removed your most likely bet will be to go by boat. The roadnet does not yet extend entirely around the island. There are no roads at all on the great plateau, but unlike the Greenland ice cap it can be traversed with no great difficulty. The standard means for travel under such conditions is the Iceland pony—a small and sturdy animal and another of the things of which Icelanders are proud.

Through the centuries Iceland's economy has been based on the land, but during recent times fishing has become important. We have seen that the only habitable land is that on the lowlands adjacent to the sea and along the valleys of the streams. Even that land is scarcely cultivable, the soil and climate being what they are. The chief use of the land, then, has been for grazing—grazing of cattle and sheep. About three-fourths of the island's people still make their livings in that way.

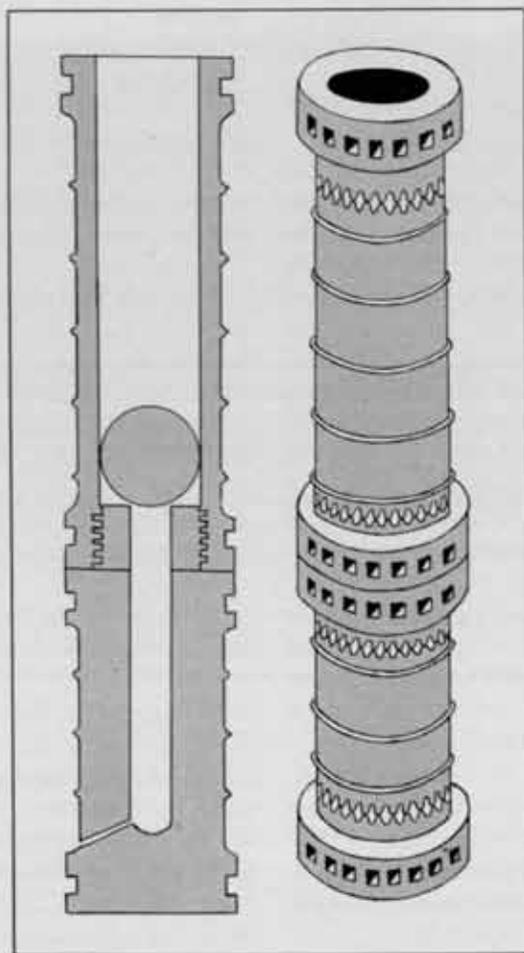
Fishing and the "industries" attending fishing are the peg on which Iceland has been hanging its hopes for greater prosperity. About one-fourth of the people are now engaged in those activities, and the move is still from the land to the sea. I get the impression that any increases in prosperity resulting from the fisheries have come by something less than leaps and bounds. Much of the fishing is done on shares, and that makes me think of those share-cropping fishers along the Newfoundland coast. There, the move is from the sea back to the land. Remind me to see my economist-consultant before I start on the next of this series.

I am afraid, too, that Iceland is not exactly a sportsman's paradise. There is good fishing in numerous lakes on the plateau, and probably some fair bird-hunting in the valleys and around the lakes. There is no big game to speak of, although once in a while a polar bear rides a cake of ice down from the north. On the other hand, there are no snakes, and few pests of any kind. The national sport is horse-racing—horse-racing of the native ponies in an offhand manner reminiscent of cowpony racing in the rodeo circuit.



# The Story of Artillery Through the Ages

By W. A. WINDAS



## Chapter 15: THE GUN SPEAKS LOUDER

The advent of gunpowder placed the Eastern Empire in a precarious position, since its Greek Fire was no longer the most fearful and effective weapon in existence. The Empire was a center of culture, but the Emperor, Constantine IX, kept his purse strings so tight that its scientists had no incentive to put forth their best efforts.

Urban, the greatest artillerist and armorer of the period, was in the service of the Emperor, but soon tired of the lack of recognition, financial and otherwise, given his talents. He went into the service of Mahomet II, who received him with open arms and an open treasury. Mahomet wanted guns capable of breaching the walls of Constantinople, the capital city of the Eastern Empire.

Urban constructed for the Sultan huge brass cannon, seventeen feet long. The guns weighed eighteen and three-quarter tons each, and were of twenty-five inch caliber. The pieces were made in two sections and

screwed together. The stone ball projectile weighed 600 pounds, and could pierce six feet of mud at one and one-half miles. The guns were intended for use as high-angle weapons, and the powder charge was comparatively small. No carriage was provided; the breech was buried in the ground, and the tubes were elevated by means of blocks.

Contemporary writers were impressed with the weapon's speed of fire, saying that, "It may be discharged eight times during the day and twice at night."

Two hundred men and sixty oxen were required to move the gun one hundred miles in two months.

Urban's 600-pound balls soon breached the walls of Constantinople. The defenders, although they had a few heavy cannon, were not good artillerists, and did little damage with their fire—except to the ancient walls of their own city, which could not withstand the shock of discharge. The city was taken and subjected to sack and massacre.

# COAST ARTILLERY



# BOARD NOTES

*Any individual, whether or not he is a member of the service, is invited to submit constructive suggestions relating to problems under study by the Coast Artillery Board, or to present any new problems that properly may be considered by the Board. Communications should be addressed to the President, Coast Artillery Board, Fort Monroe, Virginia.*

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*Firing tables for 6-inch guns, M1900, M1903, and M1905.* Firing Tables 6-D-2, dated March 1941, are new firing tables which contain data for firing the 90-pound projectile from 6-inch guns, M1900, M1903, and M1905, with a 32-pound propelling charge, which is the same charge that is used in firing the 108-pound projectile. The normal muzzle velocity given in Firing Tables 6-D-2 is 2,750 f/s.

The 32-pound propelling charge is now the standard charge, for the above guns, for firing either the 90-pound or the 108-pound projectile. However, many of the old-type propelling charges weighing twenty-six pounds and seven ounces are on hand, and are to be continued in use until exhausted or replaced by the 32-pound charges. Firing Tables 6-D-1 with changes No. 1 are still applicable to the 6-inch guns M1900, M1903, and M1905, when firing the 90-pound projectile with the 26-pound 7-ounce propelling charge at a normal muzzle velocity of 2,600 f/s. Care must be exercised that firing data are used in accordance with the propelling charge, when firing the 90-pound projectile from the above-named guns.

There appears in Firing Tables 6-D-2 the statement that these firing tables supersede Firing Tables 6-D-1 with changes No. 1, which may be destroyed. It is evident that such action should not be taken at this time, and that Firing Tables 6-D-1 with changes No. 1 should be continued in use for the 2,600 f/s propelling charge.

*Range-elevation tapes for 12-inch mortars.* Firing tables for 12-inch mortars contain separate range-elevation data for the deck-piercing projectile (service) and for the cast-iron projectile (target practice). All other data given in these firing tables apply to both types of projectiles. Care must be exercised that the proper

range-elevation data are used. Requests for range-elevation tapes for 12-inch mortars should state whether the tapes are for the D.P. or the C.I. projectile, or for both.

*Demonstration of June 18, 1941.* A joint meeting of the Ordnance Engineering Advisory Committees was held at Fort Monroe on June 18th. Approximately 200 representatives of commercial companies concerned in the production of anti-aircraft material attended. The program for the day included firing by a four-gun, three-inch anti-aircraft battery; the firing of three 90-mm. anti-aircraft guns; inspection of a truck convoy demonstrating the complete motor transportation of a three-inch anti-aircraft gun battery; the firing of the 37-mm. gun on the M3A1 carriage; and a demonstration of emplacing all types of anti-aircraft weapons. It is of interest that the 90-mm. gun was placed in firing position in six and one-half minutes and was placed in traveling position in the same length of time.

Lunch and refreshments were served at the Officers' Beach Club.

The cooperation exhibited by the officers and enlisted personnel of the various Fort Monroe units concerned in the demonstration resulted in a very satisfactory day for all concerned.

*Link chutes for M-2 machine gun mounts.* The Board recently completed a test of a modified link chute for the caliber .50 M-2 machine gun mount. Many of the stoppages which occur when firing caliber .50 machine guns on the M-2 mount are due to the jamming of empty links in the chute. A change in the design of the chute was recommended late in 1940.

The modified chute received for test differs from the present standard link chute in that the receiving end

has been reënforced on the top and sides by shaping the sheet metal around a steel rod, forming a heavy lip. A slot has been provided in the top, in rear of the reënforced lip, which permits a view of the constricted portion of the passage within the chute and affords a means, through the use of a small metal rod or a screw-driver blade, of dislodging any links blocking the passage. Two of the modified link chutes were tested during recent firings.

The Board concluded that the modified link chutes are superior to the present standard link chutes in design and workmanship. The reënforced lip is not likely to bend under conditions incident to normal use. It is unlikely that links can be caught on this reënforced lip and if link jams should occur in the constricted passage near the receiving end of the chute, the assistant gunner can clear them easily.

It was recommended that the modified link chute be adopted as standard and that the present standard link chutes be replaced by the modified link chutes as rapidly as possible.

*Definition of terms relating to power tracking in Coast Artillery fire control.* In correspondence reaching the Coast Artillery Board and in conversation with representatives of other agencies, it appears that various interpretations exist for the terms "aided laying," "power tracking," and other related expressions. To eliminate possible confusion and simplify future official texts and correspondence, it is considered desirable to adopt standard terms and assign to them suitable definitions.

"Aided laying" and "power tracking" are terms which have been used interchangeably to designate a method of pointing fire control instruments continuously at moving targets through the application of other than manual power and which materially reduces the necessary rotation of tracking handwheels. The word "laying" as used in Coast Artillery fire control is customarily applied to guns rather than to sights. The operation of keeping a telescope pointed at a moving target is usually called "tracking."

**METHODS OF TRACKING.** Power tracking is a general term including those methods of tracking wherein other than manual power is employed to perform a part or all of the operation. Various methods which may be classified under this term are illustrated and described below.

*a. Direct tracking.* In direct tracking the angular movement of the tracking telescope is proportional to the movement of the tracking control. (See Figure 1.)

*b. Rate tracking.* In rate tracking the change in rate of angular movement of the tracking telescope is proportional to the movement of the tracking control. For example, consider an arrangement in which one turn of the control handwheel will cause a sight at rest to take up an angular rate in azimuth of ten mils per second. If the handwheel control is held

motionless after one turn, the sight will continue to move in azimuth at an angular rate of ten mils per second. However, if the handwheel should be rotated a second turn in the same direction, the sight will take up an angular rate of twenty mils per second and continue at that rate until the handwheel control is rotated farther. Since, in the example outlined, each turn of the control handwheel causes a ten-mil change in rate of angular movement of the sight, this change in rate of angular movement of the sight is said to be proportional to the movement of the tracking control. (See Figure 2.)

*c. Aided tracking.* Aided tracking is a combination of direct and rate tracking. In this method both the movement and change in rate of movement of the tracking telescope are proportional to the movement of the controls. Movements of the tracking controls position the tracking telescope as in direct tracking and, in addition, adjust the output of variable rate units to control the rates of movement of the tracking telescope as in rate tracking. (See Figure 3.)

*d. Regenerative tracking.* In regenerative tracking the tracking telescope is power driven through suitable mechanisms which, after a period of initial tracking by manual operation of controls, continue to track the target as long as the characteristics of the course are unchanged. When the target is first indicated it will be picked up and tracked for a short period by operating the handwheel controls. This operation will cause the regenerative mechanism to function so as to keep the telescope on target without further handwheel adjustment as long as the course is not changed. Manual adjustment of controls will be necessary when the target changes course. (See Figure 4.)

*e. Automatic tracking.* In automatic tracking the tracking telescope is power driven through appropriate mechanisms to follow a target traveling at any speed along any course. Control is automatic and requires no manual adjustments. (See Figure 5.)

**METHODS OF MATCHING.** All of the methods described in the preceding paragraph are applicable also to pointer matching. For example, *direct matching* is employed for the present angular height dial of the Director M-4 when the present range hand crank is used, and *rate matching* if the rate knob is used. *Aided matching* is employed on those directors equipped with range and altitude smoothers. *Automatic matching* for the present altitude and angular height dials of the Director M-4 is under development.

**METHODS OF GUN CONTROL.**

*a. Manual gun control.* Operators match pointers on receiver dials or track the target through a sight mounted on the gun by turning handwheels. This motion is applied through gear trains to lay or aim the piece continuously.

*b. Remote gun control.* An automatic follow-up mechanism, power operated, is employed to lay the

TRACKING METHODS

DIRECT

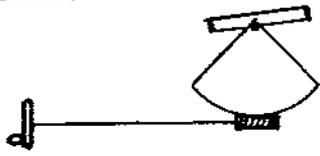
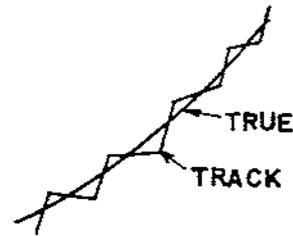


FIG. 1



RATE

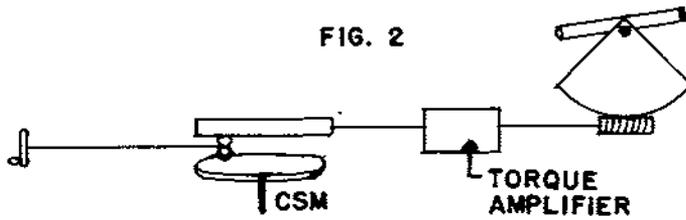
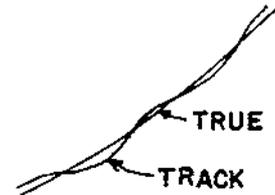


FIG. 2



AIDED

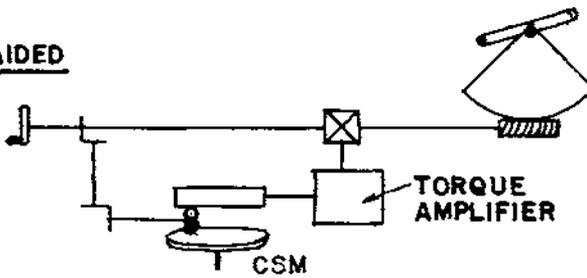
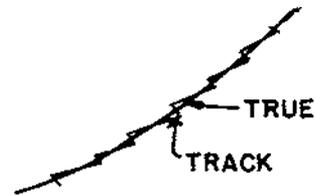


FIG. 3



REGENERATIVE

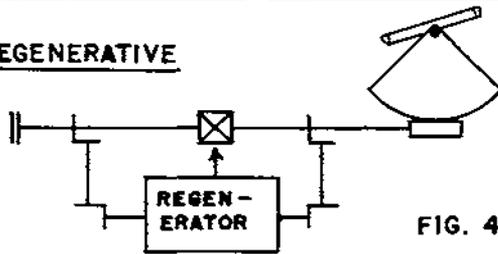
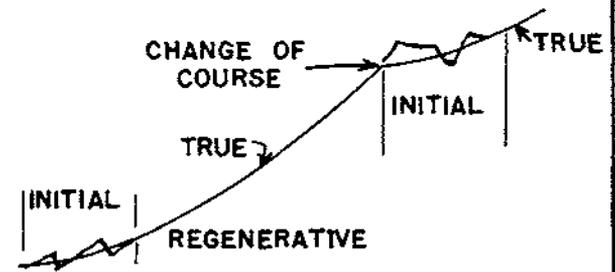


FIG. 4



AUTOMATIC

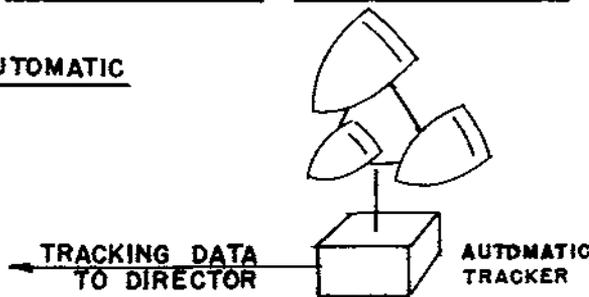


FIG. 5



gun continuously in accordance with firing data received electrically from a director located elsewhere.

Some confusion also has arisen in the designation of gear ratios employed in aided tracking systems. For example, in aided matching as tested in a modi-

fied Director M-4, rotation of the present range handwheel sufficient to change that range setting 800 yards caused a change of range rate of 100 yards per second. The ratio of aided tracking is expressed as the direct component over the aiding component

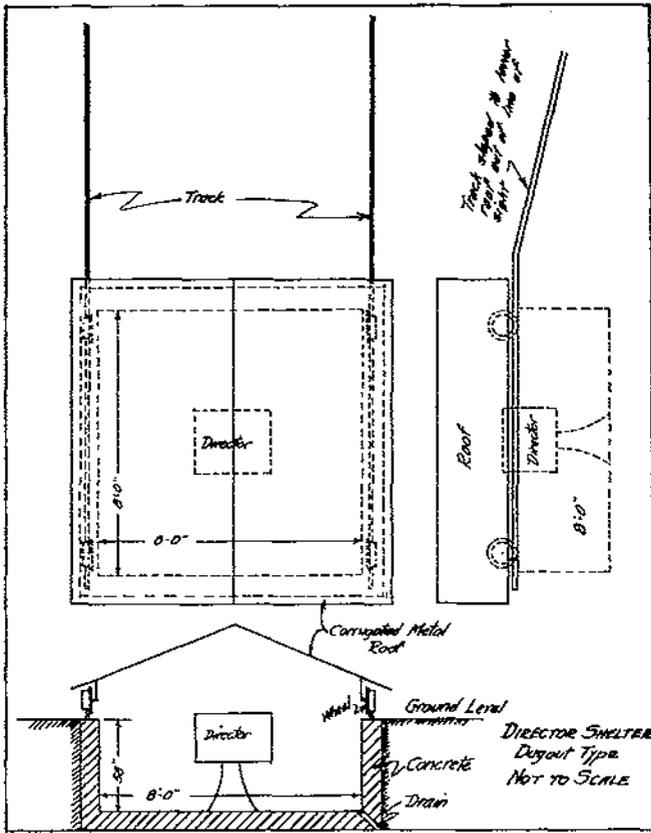


Figure 6

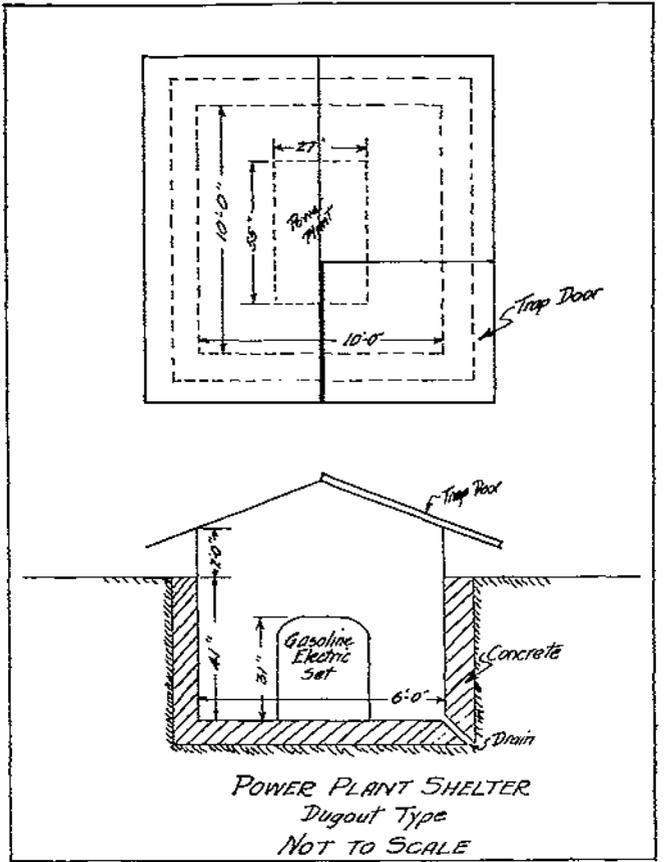


Figure 8

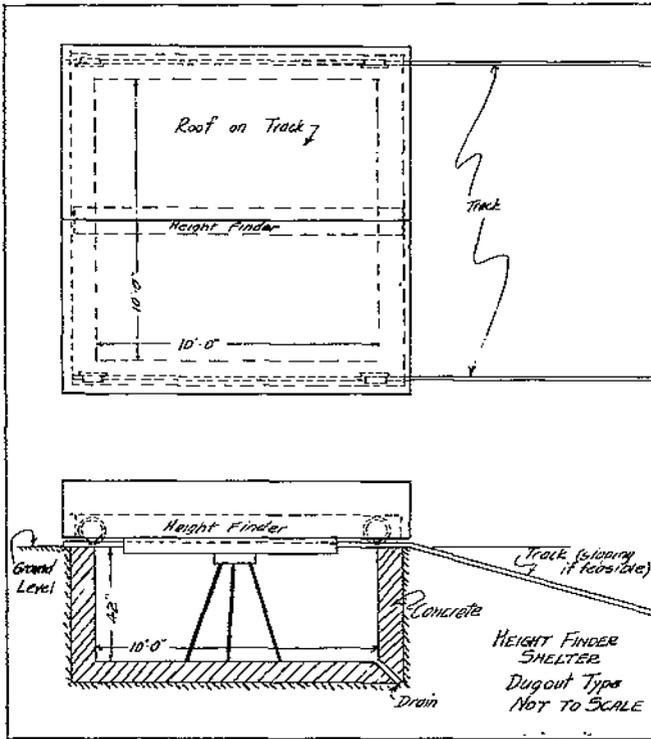


Figure 7

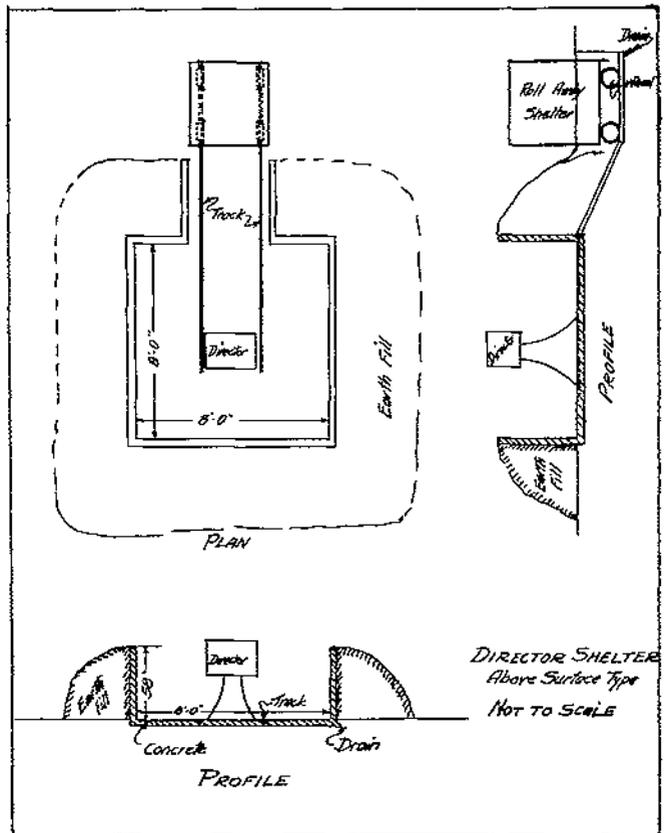


Figure 9

and is stated in seconds. For example, the ratio specified, 800 yards:100 yards per second reduces to 8 seconds as follows:

$$\frac{800 \text{ yards}}{100 \text{ yards/second}} = 8 \text{ seconds}$$

The Board has recommended that the terminology

discussed above be adopted for future use in official publications and correspondence.

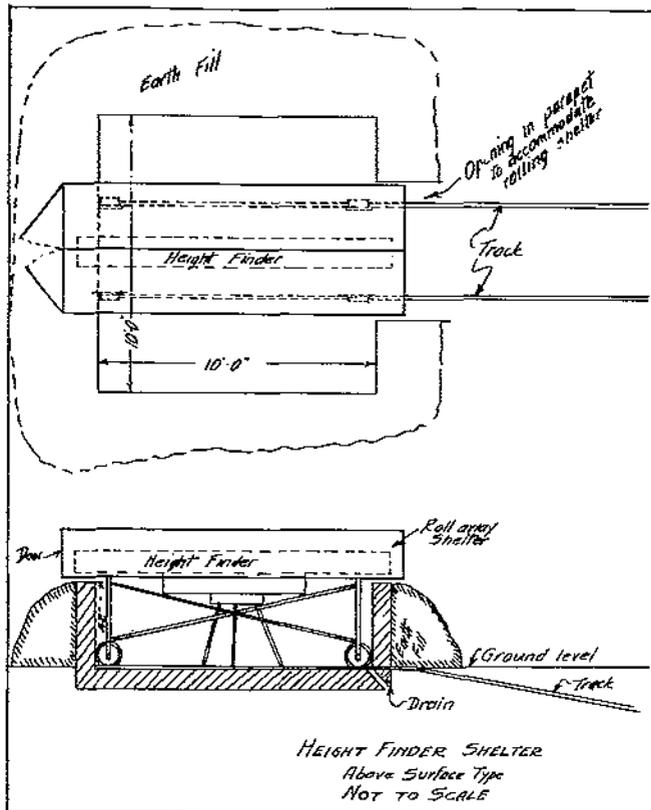


Figure 10

Shelters for fire control equipment of fixed antiaircraft batteries. The Coast Artillery Board has studied various types of shelters for fire control equipment for fixed antiaircraft batteries. It appears that a single type of shelter cannot meet the wide variety of conditions obtaining at different stations. For example, if the gun site were very rocky, excavation would be most laborious and tedious. Again, a low site with high water level might interfere seriously with an effort to excavate suitable pits. Either of the two conditions mentioned might make it desirable to erect shelters above the surface of the ground. The Board therefore suggested two general types of shelters for fire control equipment; the first of the dugout type, the second an above-surface type. However, the need for economy in the construction of these shelters should be emphasized. Work should be performed by troop labor and materials to be used should be selected which do not increase construction costs unduly. If concrete is not readily available for light revetment of walls, bricks, sheet metal, timber and sandbags should then be considered, in the order listed. If sheet metal cannot be obtained readily for roofing purposes, shingles, tar paper, or canvas may be utilized.

The dug-out or pit type of shelter is shown in rough draft form on the sketch marked Figures 6 to 8, inclusive. The above-surface types of shelters are shown in sketches marked Figures 9 to 11, inclusive. Concrete is considered to be the most suitable material for construction of the floors and walls and corrugated metal

appears to be the best type of roof material. Sandbag revetments are considered less desirable but only because of the tendency of bags to rot and require replacement after a fairly short period of time.

Where practicable, the interval between elements of the fire control system should be not less than twenty-five yards. The power plants should be housed in separate shelters.

Inside measurements have been indicated on the shelters suggested. No attempt has been made to design these shelters in detail, since it is believed that the matter of detailed design may require adjustment to fit local conditions. Paragraph 50 of FM 5-15, Engineer Field Manual on Field Fortification, mentions the subject of protective shelters for antiaircraft gun fire control instruments but no dimensions are given. The matter of drainage is covered in paragraphs 36, 48 h, and 59 of the above-mentioned manual.

It should be noted that the roll-away type of shelter must be moved far enough so that it does not interfere with the line of site from the observing telescopes when trained at low angles. In certain cases it is understood that this has been accomplished by running the tracks downhill from the position. On level ground, it may be necessary to roll the shelter a considerable distance or slope the tracks down into a depression dug in the ground in order to lower the shelters out of the line of site.

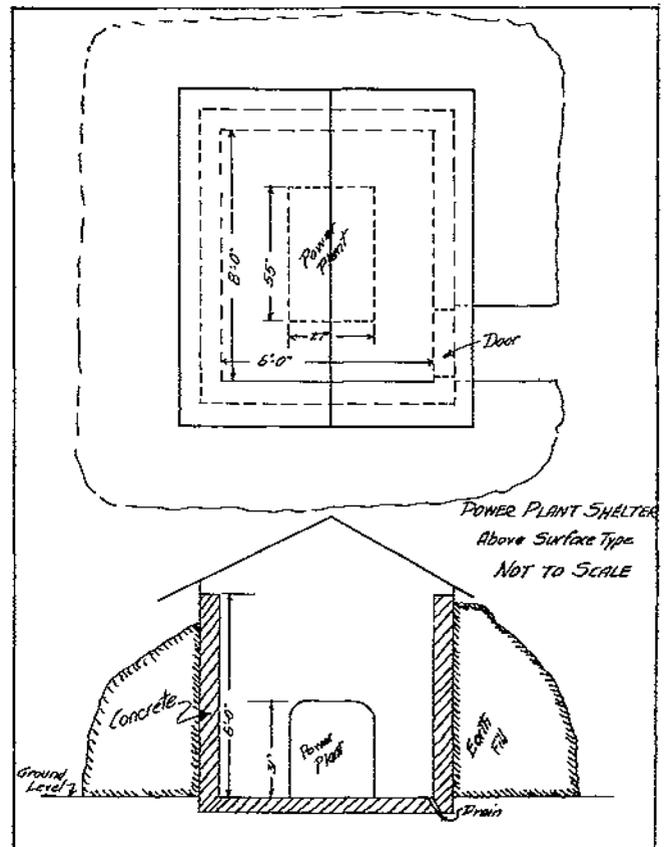


Figure 11

# The United States Coast Artillery Association



*The purpose of the Association shall be to promote the efficiency of the Coast Artillery Corps by maintaining its standards and traditions, by disseminating professional knowledge, by inspiring greater effort towards the improvement of matériel and methods of training and by fostering mutual understanding, respect and cooperation among all arms, branches and components of the Regular Army, National Guard, Organized Reserves, and Reserve Officers' Training Corps.*

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## *The Coast Artillery Journal*

LIEUT. COLONEL W. S. PHILLIPS, Editor  
CAPTAIN ARTHUR SYMONS, Associate Editor

The JOURNAL prints articles on subjects of professional and general interest to officers of all the components of the Coast Artillery Corps in order to stimulate thought and provoke discussion. However, opinions expressed and conclusions drawn in articles are in no sense official. They do not reflect the opinions or conclusions of the Chief of Coast Artillery or any other official or branch of the War Department.

The JOURNAL does not carry paid advertising. The JOURNAL pays for original articles upon publication. Manuscripts should be addressed to the Editor. The JOURNAL is not responsible for manuscripts unaccompanied by return postage.

## News and Comment

### Change in Editors

Colonel Charles Thomas-Stahle has departed from The JOURNAL to become Acting Executive for the Chief of Coast Artillery. Our best wishes go with him on his new assignment. Colonel Stahle left The JOURNAL with a new high in circulation, and high in the esteem of its readers.

In taking over my new duties I pledge my best efforts to continue the rate of improvement in circulation, editorial quality, and business welfare of The JOURNAL, and in general to maintain its reputation for service to its readers and to the Coast Artillery Corps.

W. S. PHILLIPS,  
Lieutenant Colonel, CAC  
Editor.

† † †

### Reading List for Officer Candidates

The War Department has recently released a list of military texts which it recommends for study by enlisted men who have been selected, or hope to be selected, for attendance at Officers' Candidate Schools.

The list of texts follows:

#### BASIC TEXTS, COMMON TO ALL ARMS AND SERVICES:

##### *Field Manuals*

- FM 21-100 BFM Soldier's Handbook.
- FM 21-10 BFM Military Sanitation and First Aid.
- FM 21-15 BFM Equipment, Clothing, and Tent Pitching.
- FM 21-20 BFM Physical Training.
- FM 21-25 BFM (old BFM vol. I, ch. 5), Elementary Map and Aerial Photograph Reading.
- FM 21-30 BFM Conventional Signs, Military Symbols, and Abbreviations.
- FM 21-35 BFM Sketching.
- FM 21-40 BFM Defense Against Chemical Attack.
- FM 21-45 BFM (old vol. I, ch. 9), Scouting and Patrolling.
- FM 21-50 BFM Military Courtesy and Discipline.
- FM 22-5 BFM Infantry Drill Regulations.
- FM 24-5 BFM Signal Communications.
- FM 25-5 BFM Animal Transport.

FM 25-10 BFM Motor Transport.  
 FM 101-5 SOFM The Staff and Combat Orders.

#### Technical Manuals

TM 3-205 (old TR 1120-35), The Gas Mask.  
 TM 10-205 Mess Management.  
 TM 12-250 Administration.

#### Miscellaneous

Manual for Courts-Martial, 1928.  
 TEXTS FOR COAST ARTILLERY CORPS:

#### Field Manuals—Seacoast

FM + 5 CAFM Organization and Tactics.  
 FM + 10 CAFM Gunnery.  
 FM + 15 CAFM Fire Control and Position Finding.

#### Field Manuals—Antiaircraft

FM +105 CAFM Organization and Tactics.  
 FM +110 CAFM Gunnery, Fire Control, and Position Finding, Antiaircraft Guns.  
 FM +111 CAFM Position Finding and Control, Antiaircraft Searchlights.  
 FM +112 CAFM Gunnery, Fire Control, and Position Finding, Antiaircraft, Automatic Weapons.  
 FM +115 CAFM Operation of Matériel and Employment of Personnel, Antiaircraft Searchlight Units.  
 FM +120 CAFM Formations, Inspections, Service, and Care of Matériel.  
 FM +155 CAFM Reference Data.

• • •

#### Violation of Army Regulations

Senator Harry S. Truman, of Missouri, who also is a Colonel in the Officers' Reserve Corps, recently replied to a young Army lieutenant who had written him a letter critical of the Nation and its foreign policy. Such an expression of opinion is a violation of Army Regulations.

The Senator's letter:

"Dear Lieutenant ————:

"While I was a Lieutenant of Field Artillery in training at Fort Sill in 1917 and later as a Captain in France, it would never have occurred to me to write a letter to my Senator and give him my opinions on the state of the Nation.

"First, I was too busy with the job in hand. Second, I didn't feel qualified and, third, there was something in Army Regulations which said that an officer in the Army should not express opinions on political subjects.

"Things may be different now, the younger officers may be smarter; they may have more time, and the regulations may not be enforced. In any case, while I am now a Colonel in the Field Artillery Reserve, I would not presume, were I on active duty,

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**The Coast Artillery Journal**

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to write back to Washington and advise my colleagues on Foreign Policy. I would be too busy training my regiment.

"Sincerely yours,  
(Signed) "HARRY S. TRUMAN."

"I highly appreciate the stand you have taken," General Marshall wrote Senator Truman.

Army Regulations are quite specific on expressions of opinion on political subjects. In AR 600-10, Paragraph 4 states: "Political activities of persons in military service—Except as authorized by the War Department, efforts to procure or influence legislation affecting or to procure personal favor through legislation are forbidden. . . . No person in the military service will use his official authority or influence for the purpose of interfering with an election or affecting the result thereof. Such persons, while retaining the right to vote and to express privately their opinions on political subjects, will take no active part in political management or in political campaigns."

A War Department letter of October 4, 1940, for the information of all Army officers, forbids speeches or articles containing "discussions concerning pending legislation, the foreign or domestic policies of the United States or other subjects of a political nature."

✓ ✓ ✓

#### 40-mm. Automatic Antiaircraft Cannon

The first two 40-mm. automatic antiaircraft cannon ever manufactured in the United States were delivered June 30, less than three months after contracts were signed.

Ordnance Department officers from Washington received the new weapons at the plant of the Firestone Tire and Rubber Company, Akron, Ohio.

Firestone manufactured the carriages and the Chrysler Corporation of Detroit manufactured the guns. Sub-contractors for Firestone are the Marion Steam Shovel Company and Truscon Company of Ohio.

Ordnance Department officers said the 40-mm. automatic cannon can be put in action in a few minutes. Designed for use against low-flying aircraft, the new guns fire 2.2-pound explosive projectiles and will augment the standard 37-mm. automatic antiaircraft cannon.

✓ ✓ ✓

#### Contact Camp

Lieutenant Charles Harband, of San Francisco, has written us concerning a novel contact camp idea that was worked out in the Harbor Defenses of San Francisco during the early part of the summer. Forty-three Coast Artillery Reserve officers on inactive status felt that since 14-day training periods were called off for this summer, they must get their training some other way. Lieutenant Colonel Arthur E. Lindborg, Unit Instructor for Coast Artillery Reserves in the San Fran-

cisco area, made arrangements with the officers of the Harbor Defenses for a two-day contact camp.

The Reserve officers spent the first morning inspecting the forts. At luncheon, the meal was interrupted by the following message:

"An enemy force has been harassing the beaches and batteries of the harbor defense. Our naval forces are out to sea and are steaming to our aid. All available officers of the harbor defense have been put out of service or are too far away to man our equipment. Gentlemen, we need you to stave off this attack. Here are your orders. Good luck!"

With this rather rough introduction to their duties (it was the first intimation the Reserve officers had that they would be required to "get into things"), a group command and two battery commands were established, while another group was taken by a roundabout route to the beaches to act as the attacking force. Smoke pots and firecrackers added to the realism of the problem. A simulated submarine was taken under fire with sub-caliber ammunition while land mines, detonating at odd intervals around the batteries, gave the contact officers an *ersatz* baptism of fire.

About the time the battery officers were getting used to the land mines, saboteurs (armed with flour sacks for grenades and white sticks representing dynamite) attacked the gun crews from the rear.

The Reserve officers got the idea quickly. They organized their defenses, fired a creditable number of well-aimed rounds, and beat off the landing forces and the saboteurs. One battery, however, was put out of action.

A demonstration night firing completed the first day's instruction.

Early the next morning a fleet of navy small craft invaded the harbor, threw up a smoke screen and headed for the southern end of the San Francisco peninsula. The batteries opened fire and the umpires ruled that the craft, representing a division of cruisers and two destroyer columns, had been driven off.

The afternoon was devoted to critiques.

All officers attending, including the Reserve officers and the officers of the Harbor Defenses, expressed satisfaction with the camp and with the results.

✓ ✓ ✓

#### Test to Determine Blood Type

Each soldier on active duty will receive a test to determine his blood type in order that transfusions may be given without the delay required by blood typing at the time of an accident.

By using newly developed dried preparations of blood grouping sera obtained from rabbits, it will be possible to identify the various types of human blood for the entire Army personnel more expeditiously and more economically than with the human blood grouping sera previously used.

### Antitetanus Injections

Upon recommendation of The Surgeon General, the War Department has approved the immunization of military personnel with tetanus toxoid for the purpose of giving them full protection against infection by tetanus during the intensive maneuvers planned for the late summer and fall.

Troops will receive an *initial* vaccination consisting of a series of three injections in the arm. The injections will be administered at intervals of not less than three nor more than four weeks between doses. The preferred interval is three weeks.

The completion of this series of three injections, or *initial* vaccination, increases an individual's immunity. The technique next requires that he receive a *stimulating* injection of toxoid that will produce in his body sufficient antitoxin to protect him against tetanus.

Under normal conditions a full year is allowed to elapse between the time of the initial vaccination and the administering of the stimulating dose.

In case of war another stimulating dose will be administered during the month prior to the departure of troops for a theatre of operations. This will not be done, however, if the departure occurs within six months of a previous stimulating injection.

Additional stimulating doses for emergencies are prescribed in the following situations:

- (1) For any individual who incurs a wound or severe burn on the battlefield.
- (2) For patients undergoing secondary operations or treatment of old wounds, when the additional dose is prescribed by a responsible medical officer.
- (3) To others who incur punctured or lacerated non-battle wounds, powder burns, or other conditions which might be complicated by a tetanus infection.

Permanent records will be kept of each man's vaccination with tetanus toxoid. A record will be made in the Medical Department's Immunization Register and another will be stamped on the individual's identification tag, to the right of his serial number. This will consist of the letter "T" and the date. The date of the stimulating dose is added when it is administered. For example the notation "T40-41" on the identification tag means the toxoid vaccination of three injections was administered in 1940 and that the stimulating dose was given in 1941.

/ / /

### Markings of Air Corps Planes

The letters and numbers on United States Army Air Corps airplanes are the Army's method of specific identification, and, if understood, provide an instantaneous key to the plane model.

The British Royal Air Force gives its planes names, oftentimes dramatically descriptive, as the Spitfire or

Hurricane. But with the exception of the Airacobra pursuit ship (P-39) and the Flying Fortress bomber (B-17-D) American airplanes are identified merely by a cryptic number and letter. The letter symbolizes the function.

The following chart will enable one to recognize the model:

<i>Type</i>	<i>Functional Symbol</i>
Attack	A
Autogiro	G
Bombardment	B
Cargo (transport)	C
Fighter (multiplace)	FM
Observation	O
Photographic	F
Pursuit	P
Pursuit (Biplane)	PB
Rotary Wing	R
Training, Primary	PT
Training, Basic	BT
Training, Advance	AT

The number following the letter is the model number. If a letter follows the number it indicates minor improvements but no radical change in design, succeeding improvements indicated by alphabetical sequence. An X before the model designation shows the plane to be an experimental type, Y shows it to be a service test model, and a Z shows it to be an obsolete model, one no longer purchased.

Thus for instance, through the stages of its development a new pursuit ship would bear the following designations:

<i>Designation</i>	<i>Meaning</i>
XP-1	The Experimental model.
YP-1	Service test models.
P-1	Standard models.
P-1A	P-1, with minor improvements.
P-1B	P-1A, with minor improvements.
P-2	P-1, with a major improvement (or an entirely new model which succeeded the P-1 series)
ZP-1	P-1, now classed as obsolete.

United States Army Aircraft can readily be distinguished from civilian airplanes because the latter all bear a letter N preceding the license number and also do not have the Army's familiar white star in a red circle on a blue circular background, or the two foot U. S. on the underside of the right wing and Army on the under surface of the left wing.

/ / /

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# Coast Artillery Activities



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### Coast Artillery Journal

LIEUTENANT COLONEL W. S. PHILLIPS  
CAPTAIN A. SYMONS



## AA Searchlight Matériel

As is generally known from the publicity attached to the letting of the contract, a new type of transportation is being provided for anti-aircraft searchlight matériel.

Due to the ever increasing floor height of the standard army truck it became necessary to devise another means of transporting the searchlight in order to keep the overall height within permissible limits.

Several types of vehicles were tested in attempting to find a satisfactory solution. Among the vehicles tried were a semi-trailer designed to carry sound locator and searchlight, a four-wheel tow bed standard type trailer and a 6 x 4 wide-tread truck of the general dimensions of the five-man cab trucks. In addition a vehicle known as the Kuester type tilting trailer was tested and adopted.

The tilting type trailer was developed initially by its inventor, Mr. A. F. Kuester of Clintonville, Wisconsin, to transport road building and logging equipment and to facilitate the loading and unloading of this equipment by permitting the entire body to tilt about a horizontal axis and act as its own ramp. A vehicle of this type had been in experimental use by the Corps of Engineers for several months before the application of the tilting principle was made to a searchlight trailer.

A preliminary experimental model of the tilting type trailer was constructed to transport the searchlight only.

As a result of the test of the model a somewhat heavier model was constructed to transport the power plant or the searchlight. Upon adoption of the tilting type trailer a contract for manufacturing the required number of vehicles was awarded The Fruehauf Trailer Company of Detroit. The vehicles will be manufactured at that company's Kansas City plant.

The description below and the accompanying photographs show the principles of operation and the details of construction of the trailer.

Figure 1 shows one of the new type trailers, with the power plant as a load, attached to a 6 x 6 (4 d t) 2½ ton cargo vehicle. Two trailers, one each for the searchlight and power plant, and two trucks will be provided for each searchlight unit. One truck will carry the cable reels on a centrally located frame and all personnel not accommodated in the driver's compartments. The other truck will be provided with hold-down equipment for the sound locator, comparator, tripod, binocular box and spare parts and tool box. There will be little or no room for personnel in the body of this latter vehicle. In addition to the standard towing hook there will be supplied a bracket which will carry the towing ball. The bracket straddles the towing hook and is fastened to the same frame members as the hook.

Figure 2 shows a side view of one of the experimental



Figure 1

trailers and the details of the body suspension. The close-coupled tandem wheels support a longitudinal rocker arm by spindles welded near the ends of the arm. The rocker arm in turn carries a central slide through a "Cyclops" guill bearing. A longitudinal spring is attached to the lower end of the central slide and the ends of the spring support the body. A protection strip below the spring prevents damage to the spring and the central slide.

The body is free to move vertically relative to the wheels but is constrained laterally by means of guides which engage the central slide and the ends of the rocker arm. All guides and the rocker arm ends are provided with hardened replaceable wear strips. Lubrication is provided by pressure type fittings.

Figure 3 shows one of the experimental trailers in the tilted position and shows the operation of the tilting feature. The upper frame work (shown supporting the winch) is rigidly welded to the trailer frame. The lower frame projection, which carries the lunette and ball socket, is fastened to the trailer body by pinned connections. When the upper member is depressed its forward end may be locked to the lower frame projection or tongue to form a single rigid connection between the towing device and the body.

When the forward pin fastening is removed, the trailer body is free to move about the axis of the central slide bearings. If the load is moved to the rear, the rear of the body tilts downward until its rear edge touches the ground. The load will roll out with the body constituting a ramp. The tail gate shown in detail in Figure 1 also acts as a ramp extension, until the movement of the center of gravity of the load is sufficient to tilt the

body. In mounting a load with a high center of gravity one or two men on the winch platform or the rear jacks may be used to throw the body to traveling position.

The trailer will have electric brakes on all four wheels, the wheels are interchangeable with those of the towing vehicle. The brakes will be operated by a hand controller on the steering wheel support.

A retractable caster wheel is provided to furnish a stable front support when the trailer is detached from its towing vehicle. When the trailer is to be stored for some time, the four corner jacks should be lowered to take the load from the tires.

A hand operated winch with a chain is provided to load and unload the matériel. Wheels are used on the winch instead of cranks to eliminate the danger of losing control of the winch. The fly wheel action of the winch is sufficient to prevent the load running away if the winch hand wheel is released.

Covered hand openings are provided in the front bulkhead to permit easy access to the forward turnbuckles from the outside of the trailer. Rubber-in-shear turnbuckles will cushion the shock of metal-to-metal contact between the turnbuckles and the keyhole fixtures.

The hand control bar is carried on the right side of the trailer and may be withdrawn to the front. A small box keeps mud and dirt from the handwheel and gearing.

The low bed of the trailer permits an overall height of the canvas top of approximately nine feet. There should no longer be any difficulty from low underpasses. In addition there should be a great reduction in the hand labor and effort required to load and unload the

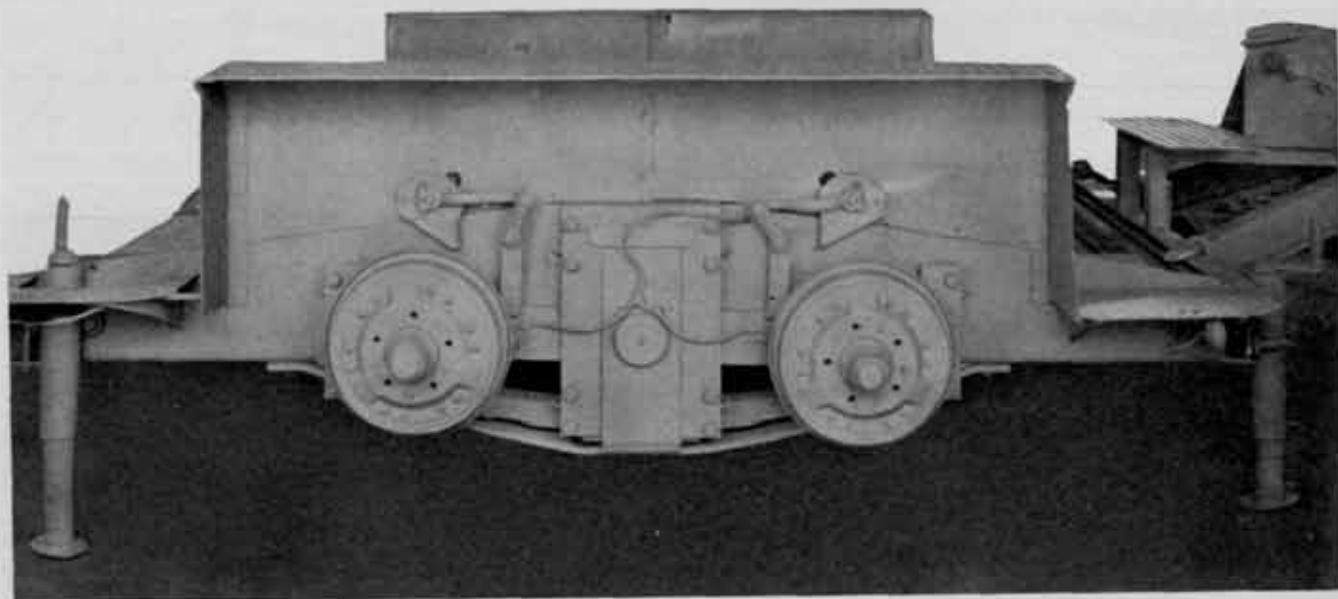


Figure 2

light and the power plant. The sound locator load may proceed directly to its position as soon as the towed load is detached. The cable may be laid by means of the truck after the towed load of that truck is detached.

Figure 3 shows the general arrangement of the lunette and the ball socket. The lunette may be used in emergencies with any standard towing hook on a vehicle of sufficient towing capacity. The change from ball



Figure 3

socket to lunette is made by removing a pin, changing the dual connection to the proper position and repinning. The final form of the combination socket and lunette is somewhat different from that shown in Figure 3 but the principle of operation is the same.

Small compartments for tools and accessories have been provided in the rear fenders. In production the top will be slightly narrower than that of the test model

shown in Figure 1. This will aid the driver's visibility to the rear and make the canvas fastening correspond to that of the truck. The tool boxes and fender bottoms have also been cut at an angle to improve their appearance and reduce the chance of contact with obstructions.

### Qualifications of Specialists

Now that the appointment of enlisted specialists has been decentralized to the field, regimental and other unit commanders have been searching for a basis upon which appointments may be made. It has been suggested that an examination be set up for candidates for appointment.

The Chief of Coast Artillery does not desire to have prepared any examinations by which candidates might be apparently qualified for appointment. The qualities of leadership, reliability and responsibility can not be determined by examination; they must be determined by observation.

The proper basis of appointment would seem to require that enlisted men demonstrating the necessary soldierly qualities be chosen to attend the Coast Artillery School, the Ordnance School, or the Sperry Company School, and then receive their appointments on satisfactory completion of the course of instruction. In exceptional cases, soldiers who by previous training and experience, either in the military service or civilian life, have technical qualifications appropriate to a particular specialty, might be appointed to the grade prior to attendance at the Coast Artillery School.





## Third Coast Artillery District



BRIGADIER GENERAL ROLLIN L. TILTON, *Commanding Third Coast Artillery District, Harbor Defenses of Chesapeake Bay, and Fort Monroe*

*By Major Franklin W. Reese*

A number of "firsts" have shared the limelight during the past two months in the training of the Third Coast Artillery District. The first CPX of the year was conducted by the District for Lieutenant General Hugh A. Drum, commanding the First Army, and the officers of his staff on the 19-20th of May. After subjecting Tidewater Virginia to simulated air and sea attack supported by parachute troops, an invading Black enemy failed materially to pierce the harbor defenses of Chesapeake Bay and was driven off by friendly troops in the two-day attack. At the end of the exercise General Drum stated in a press interview, "I am satisfied that the exercise just concluded was of great benefit to all concerned."

Another first—residents of the Chesapeake Bay area on June 10th heard the deep rumble of heavy artillery. This was the first regular service practice of the heavy armament at Fort Story since 1928 and was fired by Battery A of the 246th Coast Artillery with very satisfactory results. Over 500 spectators including officials, newspapermen, news photographers, and newsreel representatives watched and recorded the firing.

Still another first took place when members of the General Staff, leading ordnance experts and civilian manufacturers' representatives, witnessed America's answer to death from the skies—the new 90-mm. anti-aircraft gun—being fired on June 18th.

The demonstrations of 90-mm., 3-inch and 37-mm. firing were arranged by the Coast Artillery Board for about one hundred representatives of commercial firms having contracts for the manufacture of anti-aircraft equipment. They were also a part of the program for a joint meeting of the Ordnance Engineering Advisory Committee.

*The Chesapeake Bay Defender*, a weekly, 28 to 36 page tabloid size newspaper, published in the interests of the personnel of Fort Monroe, Fort Story, Fort Wool, Camp Pendleton, and Fort Eustis, began publication on May 16th.

Material for the paper is gathered by the men themselves and edited and put in form by a staff of experienced newsmen working closely with the press and with the public relations officers of the Coast Artillery units represented.

The paper has had an enthusiastic reception and is proving to be an excellent builder of morale and extremely useful in the promotion of competition in everything from military training to athletic events

and literary efforts on the part of the enlisted men.

Still another first followed the newspaper. On June 16th a ten-minute Fort Monroe News Program was inaugurated over Station WTAR, Norfolk, once weekly. The news for the program is gathered and edited by the Public Relations Officer of Fort Monroe.

Many of the units stationed at Fort Monroe, Fort Story, and Camp Pendleton have had or are in the midst of their annual target practices. At Camp Pendleton the 244th has completed both sub-caliber and service practices.

After completion of their service shoots the 244th Coast Artillery went to work on standard loading procedure for the regiment. The regiment is now prepared to move on short notice. The 57th Coast Artillery (TD), also at Camp Pendleton, has been extensively trained in the movement and maneuvering of trucks, tractors, and guns, and is scheduled to fire their 155-mm. service practices sometime during August.

The advance units, Batteries G and H, of the 2d Battalion of the 74th Coast Artillery (AA) moved from Fort Monroe to their permanent station at Camp Pendleton on June 25th, and were followed by the rest of the 2d Battalion on July 3d, while the First Battalion is scheduled to complete the transfer of the regiment by the 15th of July.

Colonel Reginald B. Cocroft succeeded Lieutenant Colonel Dale D. Hinman as commanding officer of Fort Story early in May. The past two months for the 71st and 246th Coast Artillery units stationed there have been busy ones. Convoys of the 71st mobile anti-aircraft unit have played an increasingly larger part in its training. An excellent example of the type of training this regiment is undergoing was the 750-mile convoy to Gettysburg, Pennsylvania. Cities "captured" along the projected route were Suffolk, Petersburg, Richmond, Fredericksburg, Warrenton, Middleburg, and Frederick. Families and friends of the men in the regiment were invited to "chow" and to witness the night drills, games, and athletic events.

On May 22nd, Battery G of the 71st Coast Artillery conducted a special exhibition 37-mm. firing for the Coast Artillery Board using a radio-controlled boat as a target. In the last five rounds fired, three hits were scored.

Record practices have been fired by the 246th Coast Artillery with the 155-mm. guns and railway guns at Fort Story.



Action at Fort Story

Newsreel cameras Tuesday, June 24th, recorded a spectacular demonstration of submarine mine planting and firing, conducted by the Coast Artillery School as part of a course for officer students, using the United States Army Mine Planter *General John M. Schofield*. Towed by an Army "L" boat, the target, a miniature warship, was blown high in the air by an electrically-controlled mine as it passed through the mined waters.

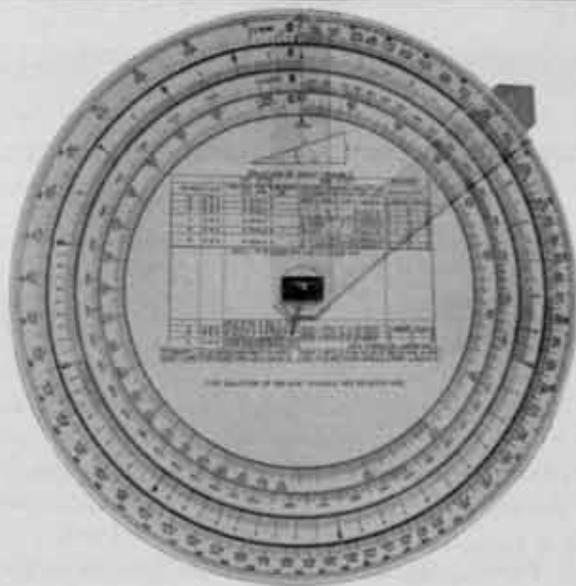
Approximately 370 R.O.T.C. Cadets went into a tent city at Fort Monroe on June 13th for their six weeks' summer training instruction. The cadets were from five colleges, Virginia Polytechnic Institute, Massachusetts Institute of Technology, University of Pittsburgh, University of New Hampshire, and University of Maine.

Recreation facilities at Fort Story and Camp Pendleton were augmented considerably with the opening of

their new 1,038 capacity theaters. A second theater was opened at Fort Story on June 26th in the area of the 2d Battalion to accommodate personnel of the 2d Battalion of the 71st Coast Artillery and the Base Hospital Staff. The two theaters are situated about 3 miles apart and the same show is given at both theaters.

Softball remains the strongest organized sport at the three posts, due in a large part to the keen competition developing in most of the league races and also to the large number of men involved and interested in the sport. Battery A of the 244th Coast Artillery nosed out Battery D of the 57th Coast Artillery for the championship of Camp Pendleton, while Battery B of the 2d Coast Artillery blazed its way to the top in the Fort Monroe circuit. The leader of the softball league at Fort Story is at this time unannounced.





## The Coast Artillery School

BRIGADIER GENERAL FRANK S. CLARK, *Commandant*

Since our last letter to *The Journal*, each of Groups XIX through XXII has entered the School for a ten-weeks' refresher course. Group XXII is pursuing seacoast artillery; the remainder, antiaircraft artillery. Each group numbers about one hundred. Group XX is composed mostly of field officers. In the meantime, Groups XIV through XVIII have graduated, the latter completing its course on July third. The total of all graduates is 517, of which ninety-six are from the course in seacoast artillery. Two small groups of officers are taking the stereoscopic height finder course, and one group of twenty, the course in submarine mining.

A group of six selected non-commissioned officers left the Coast Artillery School early in May for a five-weeks' course of instruction in the operation and maintenance of antiaircraft artillery searchlights and directors at the plant of the Sperry Gyroscope Company, New York City. While on this duty, the detachment, consisting of Staff Sergeants Merle L. Herbig, Louis J. Jurasits, John J. Camalich, Allen J. Ellis, Kenneth W. Janz, and Otto C. Kraus, will be quartered at Fort Jay.

In the first part of May, an initial assignment of eight Staff Sergeants (Electrical) was made to the Barrage Balloon Training Center, Camp Davis, North Carolina, for the purpose of getting this new school under way. Subsequently, the first contingent was augmented with several motor transportation and radio communication men.

One hundred of this year's crop of R.O.T.C. graduates arrived at Fort Monroe on June seventh for a ten-weeks' refresher course in antiaircraft artillery to begin two days later. Upon graduation, these officers will be assigned in groups of twenty to Camps Davis and Hulen, to Fort Bliss, and to the 37th and 101st Coast Artillery Brigades (AA) at Camp Haan.

Beginning July seventh, approximately sixty colored students are expected at the Coast Artillery School, Enlisted Specialists' Division. These students will be

drawn from the colored regiments of heavy and antiaircraft artillery, and upon completion of the twelve-weeks' course, will return to their several regiments.

Major Rupert E. Starr of the Organization and Training Section, Office of the Chief of Coast Artillery, visited the School recently for two days in connection with the development of training films.

Major Austin M. Wilson, of the Staff of the Coast Artillery School, left Fort Monroe early in May for a three months' trip to Hollywood in connection with the preparation of training films to be produced by various motion picture companies. While in Hollywood, Major Wilson will work in close collaboration with the Research Council of Academy of Motion Picture Arts and Sciences in the production of films concerning the 37-mm. Gun Battery (AA), the Machine Gun Battery (AA), the Antiaircraft Searchlight Battery, the Tactical Employment of Antiaircraft Artillery, and the Fire Control and Position Finding for Seacoast Artillery.

A Signal Corps Motion Picture Camera Unit arrived here from Fort Monmouth, New Jersey, along the middle of May to prepare short training films of a highly technical nature, and on subjects whose early dissemination throughout the Coast Artillery Corps is desirable. The unit in time will produce several reels of 16-mm. film. At present, it is working on a film showing the temporary drill for the emplacement of the 37-mm. antiaircraft gun (M-3), the care and maintenance of searchlight equipment, and the use of an automatic weapons trainer designed by Lieutenant Colonel Oscar D. McNeely. With the arrival of additional personnel, the unit will undertake pictures dealing with the emplacement of and march order for the new 90-mm. antiaircraft gun, as well as newsreels showing recent developments in the Coast Artillery Corps.

First Lieutenants Wei Ching Yuan and Ping Tsuan Ho, Field Artillery, Chinese Army, have graduated

from the Coast Artillery School. Lieutenant Ho completed the course of instruction on June twenty-first, and Lieutenant Yuan on July third. Lieutenants Yuan and Ho previously have graduated from the Field Artillery School, Fort Sill, Oklahoma, and from the Royal Military College, Sandhurst, England. In the near future, both officers will report to the Military Attaché, Washington, D. C., to receive orders for their return to China. Lieutenants Yuan and Ho were sent to the United States by the Military Training Department, Chinese Army, at Chungking, China. Upon their return to the Orient, both officers will report to that department, and expect to engage in instruction work.

Since *The Journal* last went to press, the Enlisted Specialists' Division has graduated 282 from various courses. Of this number, 161 were from the Regular Army, 115 from the National Guard, and six from the Marine Corps. Up till now, graduates from the Regular Army have been appointed temporary staff sergeants by the Chief of Coast Artillery. Future graduates, on the contrary, will receive appointments through their organization commanders.

As part of their practical instruction, twenty field officers of Group XX have been detailed to assist the Harbor Defenses of Chesapeake Bay in the capacity of umpires in a CPX to be held July seventh, eighth, and ninth. The CPX provides combined sector-harbor defense operations, involving the manning of all fire control stations and the occupation of battle positions by the 244th Coast Artillery (HD) near Camp Pendleton, both preparatory to the opening of the tactical situation.

The twenty umpires, under Colonel George E. Fogg, 204th Coast Artillery (HD), were divided into five sections, each under a chief of section. Colonel Fogg's section was assigned to Harbor Defense Headquarters, and the remainder to two harbor defense groupments, one a beach defense groupment consisting of the 244th Coast Artillery (HD), and one an antiaircraft groupment consisting of the 74th Coast Artillery (AA), and to two antiaircraft groups, one each at Forts Monroe and Story.

The ranking section was given the general and special situations, and the strength of the attacking forces. It worked up the details resulting from tactical operations, with all necessary messages for governing subsequent operations. The four remaining sections were given appropriate details for developing the action within their respective sections and for controlling it within the limits of the armament assigned. At the close of the CPX, chiefs of sections presented the action as developed throughout the exercise at a critique of all officers who participated in the problem.

First Lieutenant Arnaldo dos Santos, Brazilian Army, a son of the Chief of the Cabinet of the Minister of War, was graduated from the Coast Artillery School on June eleventh, after completing the Antiaircraft

Refresher Course. Lieutenant Arnaldo left a few days later for Fort Totten, New York, where he has been assigned to duty with the 62d Coast Artillery (AA) until July twenty-first. After a ten-day leave, Lieutenant Arnaldo planned to sail from New York to Rio de Janeiro. This plan, however, is being held in abeyance, pending his decision to accept an offer of the Sperry Gyroscope Company to pursue their student course in antiaircraft artillery directors.

Major Donald C. Tredennick has recently returned from extended trips to Camp Edwards, Massachusetts, where he was engaged in the production of the 3-inch Antiaircraft Gun Battery training film. Later he spent about two weeks at Fort Monmouth, New Jersey, editing that film. The picture is a 5-section serial. It is expected that two sections will be ready for showing about August first, the remainder to follow about a month later.

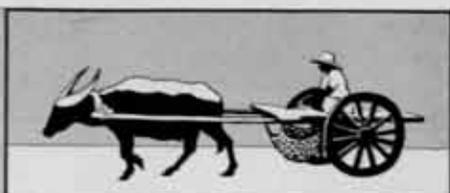
An Officers' Candidate camp begins on July seventh and lasts until October third. Processing of the 200 candidates starts on July fifth, and instruction two days later. The camp functions under the direction of the Department of Enlisted Specialists. Major John H. Madison has been detailed as Commanding Officer. Major Herbert T. Benz is Camp Executive and Commanding Officer, Officers' Candidate Battery. There is a group of seven Reserve Officer instructors drawn from Refresher Course students, who have undergone special instruction in their respective subjects.

The camp is located at the old infantry training area just north of Camp No. 3, and contains a headquarters building, barracks, mess halls, supply facilities, and a large study hall. The candidates have been selected by boards appointed by Corps Area and Department Commanders on the basis of demonstrated ability in leadership. The usual educational requirements have been waived. The first camp has candidates whose education ranges from the degree of Doctor of Laws to one year of high school. The course embraces 360 hours of instruction in gunnery, matériel, and firing, and 144 hours in basic, miscellaneous subjects. Evening study is supervised each evening except Saturday, from 6 to 8 o'clock.

Brigadier General Frank S. Clark, U.S.A., accompanied by Captain H. Bennett Whipple, Aide-de-Camp, recently returned from a six-day inspection of Coast Artillery activities at Camps Davis and Stewart, and at Fort Bragg. General Clark's purpose was to determine whether the work and product of the School was meeting the needs of our field organizations. Besides an inspection of the main camps and the fort, General Clark visited the antiaircraft artillery firing point and the newly formed Barrage Balloon Training Center at Camp Davis, visited Myrtle Beach, where the 67th Coast Artillery (AA) from Fort Bragg was engaged in firing, and at Camp Stewart observed a terrain exercise. The trip was made by motor, and terminated on June fifth.



# Corregidor



BRIGADIER GENERAL GEORGE F. MOORE

*Commanding Harbor Defenses of Manila and Subic Bays*

*By Lieutenant Burton R. Brown*

Although this is one of the hottest hot seasons on record and although the rains are long overdue, activity at Corregidor has not abated in the slightest; in fact, it has increased. The mighty rumble of the seacoast guns heard in the first months of the year is now missing but in its place has come new sounds. The staccato barks of the antiaircraft machine guns, the roar of aeroplane engines, and intermittent cracks of small arms compete with the less usual sounds of incessant hammering on new construction and the commands of noncommissioned recruit instructors. Overshadowing all this activity is the dependents' hurried preparation for and, finally, the actual boarding of the transports.

This last event struck at home more directly to more members of the command than anything else, but the only way an outsider would have known it would probably have been by the unusually strenuous way in which all persons threw themselves into social activities during their spare moments. Two parties at the Corregidor Club, one before the *Republic* sailed and one before the *Washington* sailed, were attended by the entire officer personnel and were reputed to be the liveliest and most enjoyable in years. Frequent shopping tours to Manila and vicinity left most families short of funds but wealthy with Chinese rugs, Oriental rugs, Tinio plates, furniture, linens, and just plain knickknacks. Baguio was filled to overflowing, and Corregidor was always well represented at the Army and Navy Club in Manila. All this feverish activity hit a climax at Pier 7 when the transports sailed. Although these departures were quite tearful formations for the most part they were not without humor. Such events as happened to one wife who received as a parting gift from her husband the book entitled *Live Alone and Like It*, relieved the tension.

However, in true Army style, this loss, instead of bogging down the personnel, has caused this near-bachelor post to concentrate even more time on training. Due to long hours and unstinting work on the part of both officers and men, the numerous recruits who arrived on the last two transports are ready and able to join their organization and engage in the regular training activities. Some organizations were recently activated. During this same period, several machine gun batteries conducted the first phase of their practice in a very satisfactory manner and a searchlight battery conducted an excellent practice. Small arms season was

completed with a commendable number of men qualifying as expert riflemen and pistol experts.

The two transports also increased the officer personnel of all branches stationed at Fort Mills and these new officers plunged right in the midst of all this activity and despite this torrid weather and the fact that a good many of them were last stationed at posts in northern United States, are carrying on in good style. In their spare time they, along with most other officers, are busy attending troop schools.

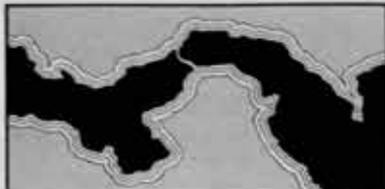
The entire Philippine Department was gratified to hear that one of our regiments had won the Coast Artillery Association Trophy for the target season of 1940. Hearty congratulations were received from Major General Grunert on behalf of the Philippine Department and from Brigadier General Moore on behalf of these Harbor Defenses.

The command was also pleased to receive word that so many batteries here had received "Excellent" ratings in this year's Seacoast Target Practice. Such results speak well for the efficiency and training of the entire command.

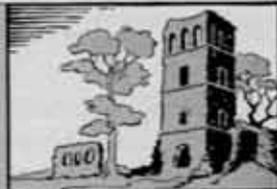
On April 29th, Major General Grunert, Commanding General of the Philippine Department, paid this post a short informal visit. Accompanied by General Moore, he made a general tour of the post and its activities.

Despite the incessant heat for the past two months, the tennis courts, bowling alleys, and baseball diamonds have seen plenty of action. Since the Departmental Baseball league did not materialize this year, Fort Mills formed two teams, named them the Fort Mills Americans and the Fort Mills Scouts and entered them in the fast moving Manila Bay League. They have made a most creditable showing starting out fast, hitting a mid-season slump, and now pushing the leaders for the league crown. Lieutenant F. A. Miller has been managing the Scouts while Lieutenant T. W. Davis, III, a former West Point hurler, has been spark plugging the Americans as player-coach. Interregimental tennis was hotly contested.

Former inhabitants of Corregidor will be glad to hear that the "Rock" is to have another band, which has already started recruiting bandsmen and they expect to have the new band in shape to make an appearance in the near future, probably in time to play the very few remaining women away from the dock on the next transport.



# Panama Coast Artillery Command



MAJOR GENERAL SANDERFORD JARMAN, *Commanding*

*By Captain Franklin B. Reybold*

In our past articles we have devoted most of our discussions to the outlying jungle positions. We have not given much discussion to those individuals who have helped to improve the living conditions of the jungle positions. We have not thoroughly covered the small but efficient unit known in the Panama Coast Artillery Command as the Gatun Navy.

When first organized into a group of approximately eight launches back in June, 1940, this small lake Navy was assigned the duty of supplying men at outlying positions. Since that time the number has increased in great strides until now men at some fifty outlying positions are supplied daily with perishable rations, ice, mail, and equipment. One of the models of the launches used in 1940 dated as far back as 1899, some were from 1917 or 1918, others were of a later date. However, with the increasing number of troops and the increased distance from the base of supplies to the newly organized jungle positions later models were acquired and immediately put to use. These later type launches have a capacity of sixty passengers or three tons of freight. In order to supply these outlying positions many hundreds of miles are covered daily. During the first three quarters of the fiscal year of 1941 over 31,000 passengers and over twenty-five hundred tons of freight were transported. The operating and repair costs for the several launches used for this transportation totaled over \$10,000 bringing the average cost per passenger to around ten cents, an average cost per pound to about one cent. The water area covered by these trips is extremely treacherous what with tree stumps, floating logs, and dimly lighted channels as shown in the picture. Many trips are made at night and to date very few serious accidents have occurred. Much credit is due to those enlisted men who make up the crews of these small vessels, and to their non-coms and commanding officers, for the unusually difficult tasks which they have accomplished and for their untiring efforts to supply the personnel of the Jarman jungleers.

On May 14th General Jarman completed the annual inspection of the Coast Artillery Command. Each post together with several outlying positions, was inspected in every minute detail. Traveling with General Jarman were members of his staff. Upon the completion of this annual inspection of his command General Jarman stated that he was well pleased with the excellent condition of all facilities, equipment, and personnel. Considering the many and varied types of tasks performed by the troops during the past year the results of the inspection are particularly remarkable. Each post turned

out all available men and transportation to pass in review before their Commanding General.

Training at Rio Hato continues to move along at a terrific pace. Constant turnover of personnel in order to complete target practice for all organizations of the command has necessitated the use of truck transportation to and from Rio Hato constantly. With the near completion of the concrete road to Rio Hato these trips are being made increasingly smoother and easier. Night runs, however, are still required and the difficult terrain over which the road runs makes careful driving necessary.

Captain M. S. Carter, who has acted as Plans and Training Officer in addition to Records Officer, has done an exceptional job according to all reports. His lectures to young Battery Commanders and his suggestions on conducting target practice have been put to use and have resulted in excellent shooting by all batteries. The enlisted and commissioned personnel at Rio Hato have found some time to use the exceptional facilities of the beach there and gain some recreation and respite from the arduous task of target practice and training in the hot sun. The completion of a new 1,500 man theatre at Rio Hato in the very near future will add greatly to the recreational facilities.

In an attempt to test for the first time in this Department in many years the adaptability and advisability of firing heavy armament against fast moving sea targets without the use of base end stations the Panama Coast Artillery will conduct two shoots at a target towed at a range of over 30,000 yards. Aerial



Navigation problems for the Gatun Navy

location and spotting will be used from start to finish of these shoots and it will be of extreme interest to all Artillery men. Major V. M. Kimm commanding big guns on the Pacific Side and Captain P. V. Doyle commanding railway guns on the Atlantic side will direct the two firing batteries. It is expected that much difficulty may be encountered from the low hanging clouds since aerial spotting becomes increasingly difficult with such cloud formations.

On June 14th General Jarman returned from a five day trip by air to several bases in the Caribbean area. He returned to Panama with a complete picture of the Coast Artillery defenses in this area and with many plans for the improvement of anti-aircraft installations. On the return trip Captain Parks, S-3 of the Trinidad base command, accompanied General Jarman. Captain Parks spent six days in Panama while he made a complete study of our Coast Artillery installations. He returned to Trinidad with new ideas for the emplacement of troops and equipment.

Back in the states much is being done along the line of entertainment for the enlisted men. Here in Panama there are certain limitations in entertainment. However the Coast Artillery is attempting to find suitable types of amusement for all men. Enlisted men's dances are being held with much help being forthcoming from the ladies of the posts and the clubs of the American residents of Panama. These dances are held in the post gymnasiums and attractive decorations predominate. The atmosphere is usually that of a jungle position with palm trees, nipa shacks, coconuts, mangoes, and the like to be found in abundance. The music is supplied by enlisted orchestras and is exceptionally good. Professional entertainment supplied by the several night clubs of Colon and Panama add greatly to making the dances very popular. Not to be outdone by their brother

soldiers in the states the Panama Coast Artillery men have organized amateur shows to demonstrate their talents on the stage before the personnel of the posts. Lieutenant Brewerton of Sherman has started work on a musical show to be given on the Atlantic Side by enlisted personnel. Such a show if successful would be the first step toward organized dramatics in the Coast Artillery here in Panama. Something of that nature would prove most beneficial to the entire command.

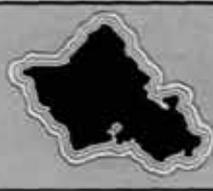
In athletics we find all units actively engaged in the preparation for the forthcoming Department Basketball championship. The Coast Artillery Command has put its best foot forward in an effort to make an excellent showing in this sport. All regiments have organized inter-battery leagues and players for the regimental teams are being carefully selected from the competing batteries. The past showings of the Coast Artillery athletic teams have been outstanding even with the unusual conditions under which these teams were required to compete. The proper training of teams has been hampered constantly by construction work and preparation for target practice, but even with these handicaps, good teams have been turned out and the Coast Artillery is placing well up on the athletic standings. Recently two enlisted members of the Coast Artillery, G. H. Smith and Holck of Sherman, won the Department Junior Doubles Championship in tennis. Sherman has completed a swimming pool for the use of all personnel stationed at that post. Lieutenant Hank Brewerton of West Point fame has started serious and energetic training of his Post Swimming team with a view in mind of topping all teams in the Department meet in October. Several preliminary meets are scheduled for this team at present and ample time is left to round out any flaws.



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# Hawaiian Separate Coast Artillery Brigade



MAJOR GENERAL FULTON Q. C. GARDNER,  
*Commanding*

*By Captain Milan G. Weber, C.A.C.*

The annual Hawaiian Department Maneuvers, conducted from May 12 to 24, 1941, were participated in by all units of this command. Many ships of the Fleet, as well as carrier- and land-based Naval planes, took part in the exercises. During these maneuvers, special emphasis was laid on movement by all mobile units of the command, antiaircraft protection against carrier-based dive bombers, anti-sabotage measures, the use of all troops and armament in the Department in a counter-attack, field fortifications, camouflage, and time and space factors. Practically every mobile unit, that could be moved by tractor, rail or motor, was moved at some time during the maneuvers, and an accurate record of the time and space factors was made for the guidance of all in the preparation of plans for future activities. All units, whether or not directly concerned with anti-aircraft, were given training in protection against dive bombers during all hours of the day and night.

During the anti-sabotage phase, the Red troops attempted to commit innumerable acts of sabotage, and the plans for protection against such acts were thoroughly tested. In the counterattack, Coast Artillery troops and armament could be seen on practically every road on Oahu.

All troops continued to work on their field fortifications. This work is still going on.

A very interesting lecture on camouflage was given on May 10, 1941, by Major John F. Ohmer, C. E. Major Ohmer is a specialist on camouflage methods and has had wide experience on movie sets in Hollywood. He is conducting schools for camouflage personnel and is making a special study of each type of Coast Artillery battery with a view toward drawing up camouflage plans which will accomplish purposes of deception and concealment in a manner which will blend in with the

local terrain. A special allotment of funds was secured for field fortification and camouflage.

## TARGET PRACTICES

The battalion commanded by Lieutenant Colonel C. H. Potts and that commanded by Major O. T. Forman are now on the firing line at Camp Malakole conducting machine gun practices. The battalion commanded by Major E. K. Higgins is now preparing for the conduct of target practices at Fort DeRussy and Sand Island.

## PERSONNEL CHANGES

Colonel H. L. Muller and Lieutenant Colonel J. D. McCain have been assigned to Fort Shafter. Lieutenant Colonel W. W. Rhein has been assigned to Fort Kamehameha.

## PUNAHOU CENTENNIAL

Of interest to officers and their families, who have served in Hawaii, was the 100th Anniversary of the founding of Punahou School, the oldest school west of the Rocky Mountains. On this day, June 25th, the Governor proclaimed a legal holiday. A pageant was held on the nights of June 24 and 25. This pageant included not only the history of Punahou School, but a review of the entire history of Oahu since the arrival of the "haoles" in the Islands. Army participation in this pageant included antiaircraft searchlights, guns for firing the 21-gun salute during the depicting of the annexation, armored cars and tanks. Many members of officers' families participated in the pageant.

Major General Fulton Q. C. Gardner represented the United States Military Academy at several functions which included representatives of more than fifty colleges and universities on the mainland.





## First Coast Artillery District



MAJOR GENERAL THOMAS A. TERRY, *Commanding*

On June 12th and 13th, General Terry conducted a Command Post Exercise in which the tactical units of the District, the First Corps Area Staff, and the Corps Area Service Command participated. A feature of this exercise was the use of umpires who were appointed to perform these functions in the Harbor Defenses to which they are permanently assigned. This innovation enabled the umpires, who had a complete knowledge of local conditions and of the limitations of their respective units, to make the problem more realistic and beneficial. It was the consensus that this type of umpire control was of more value than the use of umpires who are not familiar with local situations.

Several target practices were fired on all major caliber armament and on some of the secondary armament in the Harbor Defenses of Portland with very satisfactory results.

In the Harbor Defenses of Portsmouth, the activation of the remaining units of the 22nd Coast Artillery has been of primary consideration. The batteries took over their cadres on June 15th and trainees began to arrive during the early days of July.

The big guns in Boston Harbor have been booming (depending, of course, upon the weather and shipping) and already two 6-inch and two 12-inch batteries have completed their service practices with the remaining units of the 9th Coast Artillery and the 241st Coast Artillery scheduled to fire during July and August. The mine planter *Baird* has been dropping eggs into the sea and it will soon be the pleasure of Batteries A and C of the 9th Coast Artillery to see T.N.T. explode in the Harbor.

Training continues in the Harbor Defenses of New Bedford toward the goal of target practices which will be held during the summer.

A highlight of the past month's firing in the Harbor Defenses of Narragansett Bay was the recurrence of the bark of the 12-inch disappearing guns at Fort Wetherill which had been stilled since 1911. A formal ceremony marked the breaking of ground for the construction of two chapels, one to be located at Fort Adams and the

Searchlights of 36th CA Brigade (AA) illuminate Logan Field at review for General Woodruff



other at Fort Wetherill. A newspaper staff has been formed to publish the *Rhode Island Defender*, the official organ for the personnel in this Harbor Defense.

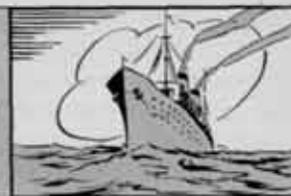
In addition to regular artillery training, all three forts in the Harbor Defenses of Long Island Sound have been united in several Command Post Exercises. Those participating have felt that these "all out" exercises have been very instructive and resolve that previous errors and mistakes will be rectified in future battles with the Black Fleet. At Fort Wright, construction has progressed to such an extent that those who have not seen the post for some time would hardly recognize it . . . blasting operations rival gunfire in sound and intensity. The 242nd Coast Artillery continues the work of refurbishing at Forts Michie and Terry. However,

recent successful firings of the 16-inch "Big Fellow" and other armament demonstrate that artillery has not been relegated to a back seat in favor of paint and polish.

The 36th Coast Artillery Brigade (AA) at Camp Edwards rapidly approaches full strength. Several new officers have been added to the brigade staff and the component regiments have received additional groups of selectees. Assistant Secretary of War McCloy and Lieutenant General Drum visited Camp Edwards on May 16th and 17th. They inspected the new firing point at Scroton Neck and commented favorably on the training activities being conducted by the regiments of the Brigade.



## Second Coast Artillery District



BRIGADIER GENERAL FORREST E. WILLIFORD, *Commanding*

*By Lieutenant Charles F. Heasty*

The Harbor Defenses of the Second Coast Artillery District have had their training intensified with the arrival of the summer months. June activities included mine practices, tactical and field inspections, and joint maneuvers with the Navy.

At Fort Totten the 62d Coast Artillery (AA) was ordered with full equipment to take to the field for a tactical inspection on June 16 and 17. The regiment's mission centered itself around the area of Camp Upton, Long Island and a full defensive position was taken. Brigadier General Forrest E. Williford, commanding the Second Coast Artillery District, inspected the command while in the field and reviewed the entire regiment as it returned to its home base.

Two new officers, Colonel Ralph L. Wilson and Lieutenant Colonel Joseph C. Haw, have joined the Harbor Defenses of Sandy Hook, commanded by Brigadier General Phillip S. Gage. Both officers came to Fort Hancock from R.O.T.C. duty, Colonel Wilson from the University of Pittsburgh and Lieutenant Colonel Haw from the University of Miami. Lieutenant Colonel Haw has assumed command of the 52d Coast Artillery (Ry). Colonel Wilson has assumed command

of the 7th Coast Artillery, the harbor defense regiment.

On June 18 the first of a series of joint maneuvers between the Army and Navy was held in the approaches of New York Harbor. Forts Hancock, Tilden, Wadsworth and Hamilton were placed under conditions simulating a wartime attack for a period of forty-eight hours. Blacked-out ships, pyrotechnics, searchlights, and all the coastal guns of the Harbor Defenses of Sandy Hook and Southern New York were employed in the operation. The Navy represented both friendly and enemy sea forces and conducted its part of the maneuver about fifteen miles to sea. Practical effectiveness of plans for the defense of the Atlantic Coast Line by the joint action of the two services was tested.

Under the direct supervision of Colonel Wilson a practice mine drill off Sandy Hook was held on June 25 from the Mine Planter Ord. This mine practice is among the first of a series of planned drills to be conducted throughout the summer.

Fort Wadsworth was honored last month by a visit from the Chilean Ambassador at which time a monument was unveiled to the famous Chilean show horse, *Chilena*, which is buried at Fort Wadsworth.





## Fourth Coast Artillery District



COLONEL R. M. MITCHELL, *Commanding*

*By Lieutenant Waldemar E. Dietz*

At last the Fourth Coast Artillery District feels able to lean back in its chair, mop its brow, and tell the world what it has been doing.

The business incident to directing and supervising the training of Coast Artillery units along several thousand miles of coast line leaves little time to talk about it, much less to write. The more or less leisurely routine of pre-expansion times left ample opportunity for regular golf and forms of exercise and diversion, but now we plug along through Wednesdays, Saturdays and Sundays just as if they were ordinary days.

We have had our troubles and are proud of the manner in which the personnel of all units of the district have cooperated in overcoming them. There are still a few minor problems to be solved, but since their solution is merely a matter of time and hard work, we feel confident that they will be straightened out shortly.

As this is the 4th C.A.D.'s maiden voyage into the public eye, we shall make an effort to tell the readers of the COAST ARTILLERY JOURNAL just who we are.

The Fourth Coast Artillery District comprises the harbor defenses of the 4th Corps Area. At present we have two National Guard units, the 263d and 252d, and the regular Army unit, the 13th.

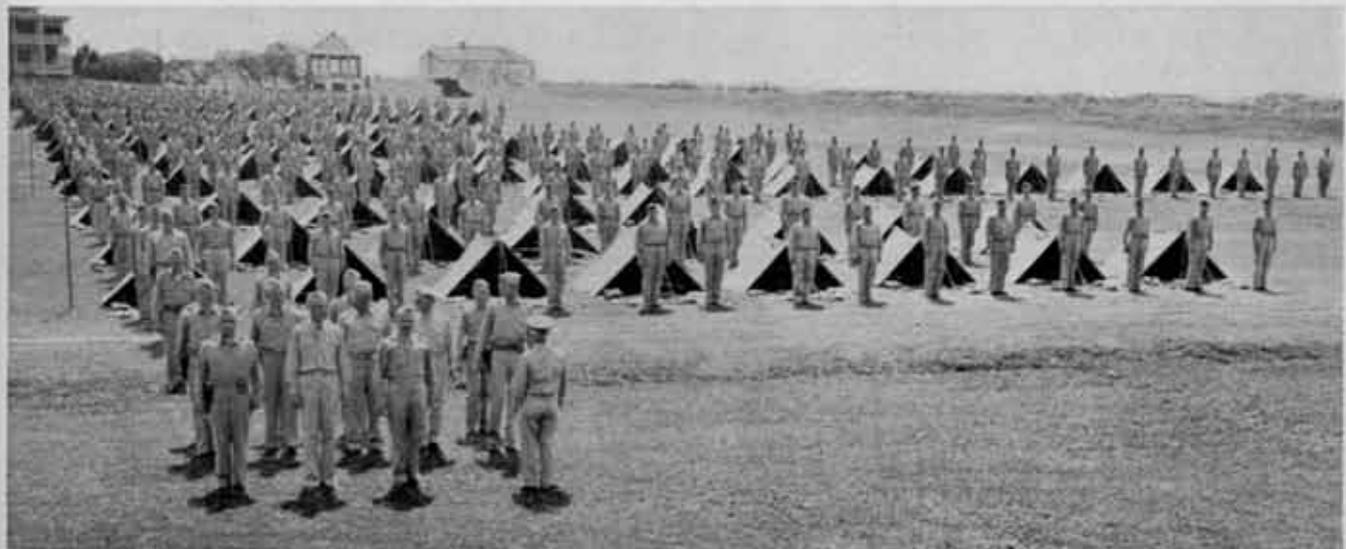
Although the main body of the 13th is stationed at Fort Barrancas, two of its batteries are stationed at other harbor defenses; Battery E at Key West and Battery D at Fort Moultrie, South Carolina. The 263d and 252d are stationed at Fort Moultrie, and Fort Screven, Georgia, respectively. Our headquarters is in the Walton Building, Atlanta, Ga.

Our denizens of the sand dunes of Tybee Island, the 252d, who, since their induction into Federal service last September 16, have seen as many phases of training as most "old Army" regulars, have finally settled in one spot long enough to hold a most creditable practice. The 252d has been pushed around and torn apart ever since its induction. Part of the regiment was even plucked bodily from the nest and sent to foreign service. The remainder has carried on exceptionally well in spite of this shake-up, and is now engaged in tactical motor marches and preparation for combined training.

The 13th, at Fort Barrancas, has sailed through the turbulent waters of producing twenty-seven cadres from three batteries, of the resulting acquisition of a great number of selectees and of the 13-weeks' intensive training program of the MTP. It is riding smoothly enough now to feel able to blast away at the little red targets the first part of July. The 13th also has 202 cadets from four southern universities as their neighbors at the ROTC Camp at Fort Barrancas. The cadets are under the command of Colonel William T. Carpenter, P.M.S.&T. of the University of Alabama.

Fort Barrancas is particularly proud of its elementary school for enlisted men who have not had any educational advantages. These men attend night classes in order to obtain a working knowledge of the three "R's." The school has an enrollment of 120. A number of them did so well that they were graduated before the prescribed date.

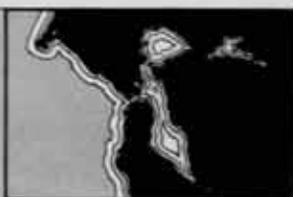
Battery D of the 13th, stationed at Fort Moultrie, held its annual target practice on June 17.



Full field inspection of 263d Coast Artillery



# Ninth Coast Artillery District



MAJOR GENERAL HENRY T. BURGIN, *Commanding*

*By Major Randell Larson*

Since the last letter, there has been considerable expansion of organization and personnel in the Ninth Coast Artillery District. Extensive improvements are being made in all of the Harbor Defenses of this District. In the Puget Sound Defenses rehabilitation of buildings and utility systems and the improvements of roads are being made. At Camp McQuaide eleven recreation halls and a radio station are building, and an officers' clubhouse and a Post Chapel will rise soon. At Fort Rosecrans a new hospital is now under construction, with other buildings, including a post exchange, post office, and recreation building, to be built.

Education and recreation of a wide variety have their place in "the scheme of things" throughout the Ninth Coast Artillery District. At Fort Worden a roller-skating rink was opened on May 21 and an outdoor boxing ring is now under way. At Camp McQuaide the "McQuaide Bowl" for open air boxing and wrestling shows opened on June 19, and The Hobby Club held an army photo salon on June 14.

Many of the units throughout the district have had service practice and training generally has progressed. Some of this activity as reported from the various Harbor Defenses, is the following:

*Harbor Defenses of Puget Sound.* The month of May saw the completion of annual practices for the 248th and 14th Coast Artillery regiments. July and August will bring another series of practices for the batteries which were activated in February.

With the arrival of about 600 selectees all units of the Harbor Defenses of Puget Sound have now been activated.

*The Salvo*, a weekly publication, is now published under the direction of the Public Relations section of the Puget Sound Harbor Defense staff. Volunteer reporters from each battery prepare the copy and the printing is done by a Port Townsend publisher. No paid advertising is accepted, all space being devoted to Post and Army news.

Fort Worden was saddened with news of the sudden death of Major Frederick F. Scheiffler who died on June 9th as a result of an automobile accident near King City, California. Major Scheiffler was formerly Plans and Training officer of the 248th Coast Artillery at Fort Worden.

*Harbor Defenses of San Francisco.* Batteries K, D and B of the 6th Coast Artillery and Batteries F, D and E of the 18th Coast Artillery have fired target practice. The firing of Battery E gave results that may bring a red E on all cuffs. The conduct of the personnel, which in-

cluded many who were experiencing their first major caliber shoot, was good and the results of the target practice, on the whole, were very creditable. Night firing by F battery gave nearby San Francisco an unexpected thrill.

The Harbor Defenses had the pleasure of welcoming a new regiment to its rolls when the 56th Coast Artillery (155-mm. gun) was activated on June 20. The first cadres arrived on June 7th. The entire regiment will be housed in recently completed buildings at Fort Cronkhite. The personnel of the 56th have had their initial recruit training at the replacement center of Camp Callan. Most of them are selectees from Michigan and Illinois.

The 6th Coast Artillery has added to its strength with the activation of its Third Battalion. Camp Callan Replacement Center again supplied the new soldiers.

*Camp McQuaide.* The 250th Coast Artillery, "San Francisco's Own," has divided its forces between Alaska and sunny Monterey Bay.

Camp McQuaide's five man team established a new world's record with the .22 caliber pistol over the National Match course in the California State Pistol Matches held in Oakland, California, on June 22. The new world's record is 1,440 x 1,500, an average of 288. The team was composed of First Lieutenant G. W. Curo, Colonel D. P. Hardy, Sergeant M. Marelich, Staff Sergeant D. R. Mehegan and First Lieutenant W. A. Hancock.

*Harbor Defenses of Columbia.* Prior to a ten-day war condition period the latter part of June, service target practices were held by the 249th and 18th Coast Artillery regiments. This was the first opportunity for selectees of 18th Coast Artillery to get a crack at firing seacoast guns. June 12 marked the first night firing by the 18th Coast Artillery. Railway mortars were fired.

A group of over 100 selectees, having completed their basic military training at Camp Callan, California, arrived at Fort Stevens in June and were assigned to Battery G, 18th Coast Artillery, recently activated searchlight unit.

*Harbor Defenses of San Diego.* All members of the 19th Coast Artillery with the exception of two small recruit detachments, have completed the 13 weeks intensive training period. Batteries A, B, C, E and F have completed their service practices. Battery C was rated "excellent" by the Commanding General, Ninth Coast Artillery District, and members of the organization are now wearing the coveted "E" on their coat sleeves.

The Third Battalion of the 19th was activated in

June and is now preparing for an early service practice.

Troop schools include a refresher course for new officers with recent Coast Artillery School graduates as instructors.

The regiment plans to organize a band, beginning with the new fiscal year.

Fort Rosecrans has just completed a successful bowling tournament with ten teams competing. Battery F bowlers under Sergeant Potts were winners. A regimental baseball team is leading in a sandlot league. Inter-battery games of softball are played regularly.

*Harbor Defenses of Los Angeles.* Colonel William W. Hicks, recently on duty in the Hawaiian Department, assumed command of the Harbor Defenses of Los Angeles at Fort MacArthur on June 18.

Service practice at Fort MacArthur was completed on June 18.

The 3rd Coast Artillery was ordered from Fort MacArthur to strike duty with the 15th Infantry at the North American Aviation plant at Inglewood, California, where it remained from Monday morning, June 9th to Tuesday night, June 10th.



Camp

Haan

BRIGADIER GENERAL E. B. COLLADAY, *Commanding*  
By Lieutenant Erwin Clement

Lieutenant Colonel James Graves Scrugham, Representative in Congress from Nevada and Reserve officer in the Coast Artillery Corps, arrived at Camp Haan on June 18. The colonel, who is chairman of the Naval appropriations sub-committee and member of the appropriations committee handling defense measures, was in camp for a 14-day inactive status training period.

Major General John F. Williams, Chief of the National Guard Bureau, visited Camp Haan on June 23 and was shown about the 101st Coast Artillery Brigade area, federalized National Guard brigade from Minnesota, by Brigadier General Donald B. Robinson, commanding officer of the brigade.

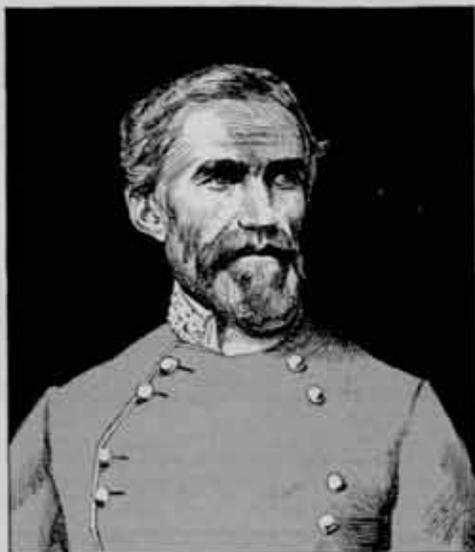
General Robinson returned to Camp Haan on June 2 to assume command of the 101st Coast Artillery Brigade, after an absence of over two months at the Coast Artillery School. During his absence the brigade was

under command of Colonel W. D. Frazer, 215th CA (AA).

The 78th Coast Artillery (AA) is on the desert firing range 150 miles northeast of Camp Haan for a 10-day stay. The movement followed the return of the 65th Coast Artillery (AA) from a two-week stay at the range camp on the Mojave desert.

A ring of guns and searchlights has been thrown around the key Lake Matthews reservoir in Southern California by Camp Haan men—but it's only for the movies. Units of the three regiments of federalized Minnesota National Guardsmen and selectees at the antiaircraft artillery training center have been mimicking antiaircraft defense work at the reservoir for an army training film. The film is being prepared by Warner Brothers studios with the aid of Camp Haan officers.





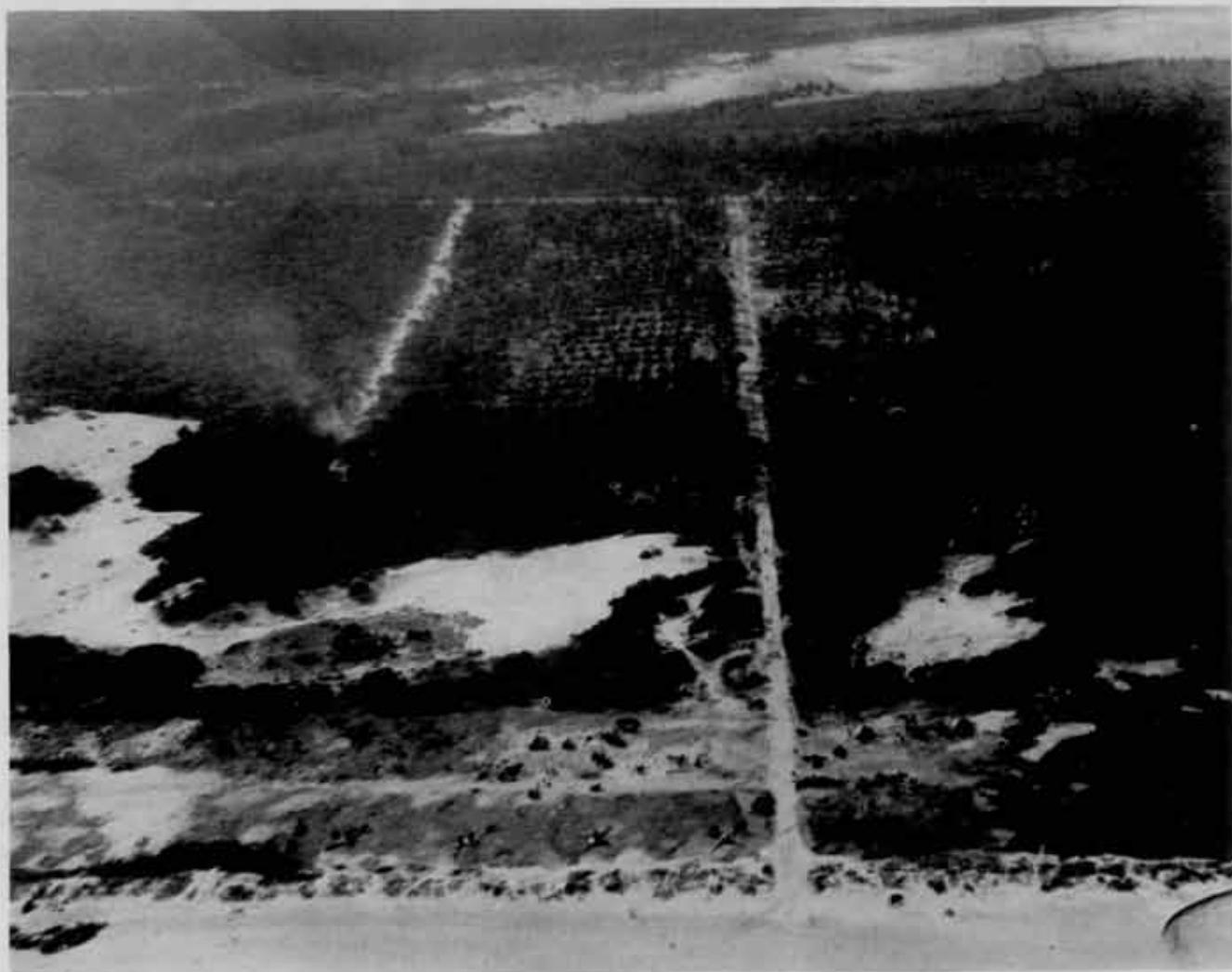
Fort

Bragg

BRIGADIER GENERAL CLAUDE M. THIELE  
*Commanding 34th Coast Artillery Brigade (AA)*  
*By Lieutenant William D. Workman, Jr.*

With initial mobilization training completed for all except recently arrived selectees, units of the 34th Coast Artillery Brigade (AA) are engaged in target practice and an increasing number of field exercises.

Focal point of brigade activity is the firing site at Windy Hill, S. C., thirteen miles north of Myrtle Beach. There, the 67th Coast Artillery, under the command of Colonel James P. Hogan, effected a remark-



The 34th CA Brigade firing center north of Myrtle Beach, South Carolina



Worship under unusual surroundings. Colored troops of the 76th, away from Fort Bragg for practice at the 34th CA Brigade firing range north of Myrtle Beach, South Carolina

able transformation of the coastal jungle to a well-arranged camp site. In clearing the matted undergrowth and in laying out a tent area, the officers and men of the 67th confronted problems usually experienced by workers on Canal Zone projects. During the latter part of their month's stay at the beach, however, the men found time to improve the camp considerably, resulting in an appearance similar to a well-kept state park.

Target practice for the 67th went well, according to unofficial reports, and the regiment returned to Fort Bragg pleased with itself, its firing and its reputation for good behavior generally. Moving in as the 67th moved out, the 76th Coast Artillery, commanded by Lieutenant Colonel Harry R. Pierce, made camp and began its target practice about the middle of June. It will be followed by the 77th Coast Artillery, commanded by Lieutenant Colonel Riley E. McGarraugh.

The biggest single undertaking of the brigade as a unit to date has been participation in the I Army Corps Command post exercise held on the Fort Bragg reservation June 17-18. With the 8th, 9th and 30th divisions simulated on the ground, the 34th Coast Artillery brigade went into the field and established command posts down through battalions, with headquarters commissioned and enlisted personnel on hand.

The Corps CPX gave added stimulus to the series of battalion, regimental and brigade problems being conducted throughout the brigade and provided valuable experience for both officers and men. Intelligence officers of brigade, regiments, and battalions attended a

post camouflage school during late June and increased the efficiency and effectiveness of camouflage in their respective units on their return. Officers and noncommissioned officers who have completed courses at the Coast Artillery School are now being returned to their assigned units, with the result that their up-to-date knowledge and technique are being integrated into the training programs.

Battery A of the 77th has completed record service practice (searchlight) at Fort Bragg. The regimental records section, a height finder section and a director section of the 77th have gone to Windy Hill to take advantage of the 76th's target practice to provide additional training.

All units are rounding out a complete athletic program, with baseball and swimming holding the spotlight at the moment. The two regiments of colored personnel the 76th and the 77th, are participating with other colored units of the post in athletics and entertainments.

Tragedy struck the brigade May 14 when Major John E. Mortimer, plans and training officer of the 67th and a moving spirit in the organization of the Windy Hill camp site, was fatally burned in his tent at the camp. He was buried with military honors at the National Cemetery in Arlington.

Colonel Charles A. French, who had been on duty with the R.O.T.C. at the University of Minnesota, reported to the brigade for duty and was assigned as brigade executive.

Camp



Hulen

BRIGADIER GENERAL HARVEY C. ALLEN, *Commanding*

*By Major Glenn Newman*

Camp Hulen, the home of the AA Training Center and the 33d Coast Artillery Brigade, is located on the shore of Matagorda Bay about midway between Galveston and Corpus Christi on the Texas Gulf Coast. The camp was named in honor of Major General John A. Hulen of the Texas National Guard and is normally the scene of the annual encampment of the 36th Division.

Here at Hulen the Mason and Dixon Line has been bent if not definitely broken. We have the 197th from New Hampshire; the 211th from Massachusetts; the 203d from Missouri; the 204th and 105th from Louisiana; the 69th composed to a large extent of selectees from New York; and the 106th from Kentucky. The 105th and 106th are Separate Coast Artillery Battalions.

The 33d Coast Artillery Brigade consists of the 69th, 197th, and the 203d Coast Artillery regiments.

Camp Hulen is a tent camp. All personnel from Commanding General to buck private live under canvas. The natural air-conditioning provided by a pyramidal tent probably accounts for the exceptional health record of this command. The hospital, headquarters buildings, Post Exchanges, recreation buildings, mess halls, etc., are of wooden construction.

At the present time two firing points are in operation. The Turtle Point Firing Point for 3-inch guns is located on the shore of Matagorda Bay about 1½ miles from the Camp. It is easily accessible by concrete road and was designed and constructed so as to provide all the facilities a Coast Artilleryman has often wanted but never found at a firing point. It will accommodate one battalion on the firing line and four battalions on the tracking line simultaneously. The Indianola Firing Point for automatic weapons is also located on the shore of Matagorda Bay and is about forty-two miles by road



Aerial view of Camp Hulen



Turtle Point Firing Point, Camp Hulen

from the Camp. This site is of some historical importance as it is located amidst the ruins of the old city of Indianola which was destroyed with a great loss of life by a hurricane in 1886. The superstitious are marking all tents "FINDER PLEASE RETURN TO CAMP HULEN."

During April and May a Provisional Searchlight Battalion, commanded by Major William H. Papenfoth, and composed of the searchlight batteries of the 197th, 203d, and 211th Coast Artillery regiments went to Midland, Texas, for the annual searchlight practices. A 360° defense of Midland was set up and after a short period of intensive training the battalion was able to handle three planes simultaneously. The record practice results were excellent.

It is believed that Battery B, 197th Coast Artillery, set some kind of a mark in a record practice this spring. On one course, due to the fact that the line of metal officer gave "Cease Firing" as soon as the Battery Commander had given "Commence Firing" one shot only was fired and this was a hypothetical hit and also shot the target down.

During these days of "controlled items" and "priorities" many things had to be simulated. But no such simulation was necessary in those conditions which tend to harden a man and make him fit for field service. Nature provided for this in a generous and unstinted manner and we feel certain that the Camp Hulen soldier not only can take it—but has!





## Fort Bliss Anti-aircraft Training Center

BRIGADIER GENERAL O. L. SPILLER, *Commanding*

*By Lieutenant Bernard M. Nagel*

In a land steeped in military traditions, the Anti-aircraft Training Center at Fort Bliss, Texas, sits on the foothills of the jagged Franklin mountains, overlooking the border city of El Paso. Lodged in the southwest corner of Texas, the country offers an ideal year around training ground for anti-aircraft soldiers. This tent city of six regiments and a Headquarters Battery houses approximately ten thousand men.

The units which comprise the Training Center are the 63rd Coast Artillery (AA), the 79th Coast Artillery (AA), the 200th Coast Artillery (AA) out of New Mexico, the 202nd Coast Artillery (AA) from Chicago, the 206th Coast Artillery (AA) from Arkansas, the 260th Coast Artillery (AA) from Washington, D. C.; and Headquarters Battery, 39th Coast Artillery Brigade (AA), activated at Fort Bliss.

The 79th Coast Artillery (AA), commanded by Colonel Monte J. Hickok, is the latest addition to the Training Center. Activated on June first with a cadre of 167 men from the 63rd Coast Artillery (AA) our youngest member has now received 1,453 Selective Service men from Camp Wallace, and is rapidly taking its place in the Training Center.

Climate not only provides seasonable training weather twelve months out of the year, but atmospheric contortions caused by the intense heat in the high altitude, provide practically every difficulty the 3" anti-aircraft battery is likely to meet in actual combat. Intense training in methods of clearing these obstructions is invaluable. Rapid and frequent changes in meteorological conditions are due to the fact that the firing point is on the desert which is surrounded by lofty mountains, and the effect of the sun and the wind on climatic conditions is a constantly changing one.

Almost daily the convoys roll from the Training Center, bound for the 300,000 acre Dona Ana range for target practice and Artillery drill. The desert sky is honey-combed nightly with the searchlight beams as they track ships from the 120th Observation Squadron, also stationed at the post. Through the acquisition of thousands of acres of this unproductive land the anti-air-

craft gunners can fire at eight towed targets simultaneously, eliminating the waste of precious time.

For antitank firing there is an ingenious and practical method. The small simulated tank is carried up the mountains by truck and assembled, placed on a narrow gauge track, and allowed to run down the mountain side and out into the desert. Since this track is constructed with dozens of curves and bends a zig-zagging target, traveling at from thirty to forty miles an hour, offers a thorough test for marksmanship. Against these targets, from ranges varying from 1,200 to 600 yards, the men of Batteries F, G, and H of all regiments, using both individual tracer control and central tracer control, have found that the 37-mm. cannon is a most effective weapon.

Searchlights and heavy cannon are new to this section, and night after night a steady stream of cars flows to the practice fields and target ranges where the people of the southwest thrill at the performance of these new weapons and accessories.

Along with the military training, an extensive program for entertainment and athletics, functions in high gear.

The enlisted men's basketball tournament was taken by the quintette from the 202nd Coast Artillery (AA), captained by Tech. Sgt. Edwin Arundell. The Chicago lads whipped every outfit they met. In seventeen games they chalked up seventeen wins.

Every battery in the AATC has volley ball teams and horseshoe pitching crews. Inter-regimental competitions and inter-battery tournaments have produced a spirit



seldom seen in organizations gathered from the four corners of the country.

With the soft cool spring nights came the haymakers in tights, to slug their way through one of the most exciting tournaments ever seen in these parts. The 200th Coast Artillery (AA) romped off with four of the eight titles, winning the admiration and respect of the entire command.

Baseball, both hard- and soft-ball teams, has been organized into regimental leagues, AATC league and the Fort Bliss Post league. Battery G, of the 202nd, has clipped championship ambitions from under all contenders for the soft-ball championship to date. They have a clean slate, winning every game by a comfortable margin. Hardball teams haven't played many games outside of the area, but there is a fast semi-pro league in this locality that promises some exciting games on its schedule.

Swimming pools make possible inter-battery or inter-troop matches and an organized swimming league is in the process of formation.

The social side of the AATC soldier is not neglected and the men consider themselves fortunate in being stationed here. The downtown Recreational Center, a huge club offering the latest and best in entertainment, was recently donated by the citizens of El Paso. Regimental dances, as well as general entertainment, are held here regularly.

The AATC has under construction two theatres each seating 1,300. The massive outdoor theatre, canvas

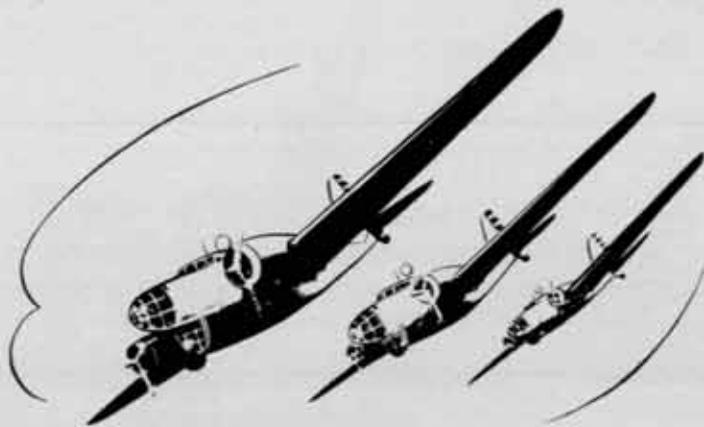
covered, was unable to withstand the desert windstorms, and while it operates nightly, without the canvas top, the theatre proper will be converted into an arena as soon as the new buildings are ready for occupancy.

A new Service Club, centrally located, for the benefit of all AATC regiments, has just been opened. With a sleek and shining ballroom, library, facilities for writing letters, stocked with the latest and best magazines, lounge rooms, the place is a veritable mecca for the men. Adjoining the ballroom and part of the building, a cafeteria and soda fountain is always filled with hungry troopers. Meals are served all day and late into the night.

Nearby is a guest house, with twenty-four double bedrooms and four single rooms, for the accommodation of visitors. Rates are very reasonable and the quarters rival the best in metropolitan hotels for comfort and service.

To further dispel the possibility of loneliness of the enlisted men, each battery has completed or under construction, a battery recreation room, a miniature club in itself. Each regiment has a centralized recreation hall, where movies and entertainment are regularly scheduled. The entertainment is mostly provided by civilian talent.

Tennis courts dot the area surrounding the Training Center, and a public golf course stretches out just east of the camp.





Camp

Callan

BRIGADIER GENERAL F. P. HARDAWAY, *Commanding*  
*By Captain William J. Hauser*

The Camp Callan Coast Artillery Replacement Training Center graduated 4,890 Selective Service trainees in June. These men had previously activated twenty-three training batteries in March.

Camp Callan has received an excellently trained military band. The services of the famed Leopold Stokowski were made available to select the trainees going through the induction center, then train and

coach the West Coast Replacement Training Center bands. After this mission was accomplished, the bands were sent as units to their respective stations.

Late in the training program of the graduating selectees at Camp Callan, two large reviews were staged in honor of the neighboring communities. The first was in honor of La Jolla, followed a week later by "San Diego Day." These ceremonies attracted hundreds of visitors



and guests to the camp that they had been observing for months. The review of the six training battalions inspired the visitors and impressed them with the training attainments of men who, for the most part, were civilians only a few short months ago.

With the completion of this first period came also the completion of the program of battalion dance parties at the Service Club of Camp Callan. With the careful planning of the fullest use of facilities, the Service Club was made available each week for the battalions, in turn. These social events created great interest to the soldiers who were able to enjoy an evening of dancing with attractive young ladies sponsored by civic groups and organizations from San Diego and the San Diego State College. Music, entertainment, and refreshments for these occasions were provided by the battalions.

An event of particular interest to the entire command was the visit of Bob Hope and his troupe of broadcasters. The National Broadcasting Company moved into the United States Army Motion Picture Theatre at Camp Callan, and set up their equipment for the release of a nation-wide broadcast of the Bob Hope Radio Show.

These radio artists and performers featured Bob Hope, Mary Martin, Jerry Colonna, Brenda and Cobina, the Six Hits and a Miss, David Butler, Skinny Ennis and his orchestra, Bill Goodwin, and Art Baker.

With such a list of features, it is easy to understand that the troupe received a very hearty welcome, and applause both for the broadcast and for the outdoor program which followed for the benefit and entertainment of the thousands that could not be admitted to the Theatre.

Following the completion of the first twelve-week training period, the trainees were transferred to permanent Coast Artillery stations along the entire Pacific Coast from Fort Worden, Washington, to Fort Rosecrans, San Diego, California. Trainees were transferred to activate other units as follows: one searchlight battery of the 3d Coast Artillery at Fort MacArthur; three batteries of the 6th Coast Artillery at San Francisco; four batteries of the 14th Coast Artillery at Fort Worden, Washington; one battery of the 18th Coast Artillery at Fort Stevens, Oregon; one battalion and one searchlight battery of the 19th Coast Artillery at Fort Rosecrans; one Coast Artillery regiment (TD) at Fort Cronkhite, Harbor Defenses of San Francisco; 354 men were transferred to the 40th Division, San Luis Obispo, California; seventeen to headquarters Ninth Coast Artillery District, Presidio of San Francisco, California, and five to the Army Mine Planter *Niles*.

The activation of the seven new antiaircraft training batteries and the reactivation of the former twenty-three batteries was accomplished in June, with troops who began to arrive before the former trainees were transferred out. The new trainees came primarily from Reception Centers in the Fourth, Fifth, and Sixth Corps Areas; some came from the Seventh, Eighth, and Ninth Corps Areas.

This entire change of trainee personnel was accomplished with comparative smoothness and satisfaction.

With the new period of training well under way the fruits of the experiences of the first group have made it possible to conduct the training and administration of this second activation with increased ease and smoothness. The process will be repeated again in September.



It is no exaggeration to say that I have filled twenty wagons with useless rubbish which I have found in the review of a single regiment.—MARSHAL SAXE.

# Camp



# Davis

BRIGADIER GENERAL JAMES B. CRAWFORD, *Commanding*

*By Captain E. Jeff Barnette*

After two months of arduous clearing, digging, dredging and building, Camp Davis, the Army's new anti-aircraft training center in North Carolina, is linked directly with the Atlantic Ocean, and troops have access to a firing point with virtually unrestricted range.

The five miles of heavily wooded marshland that lay between the camp and ocean presented a formidable challenge to engineers who sought to establish by the seashore a firing point for 3-inch, 37-mm., and machine gun practice. And even after workmen surmounted the solid wall of pines, it was necessary to span the In-

land Waterway, yet another barrier between Camp Davis and the sea.

Although the firing point project involved considerable planning and effort, it was recognized as being indispensable to the training program. Contracts were let, and while 21,000 workmen toiled day and night building the Coast Artillery and Barrage Balloon Training Center at Camp Davis another corps of employes was constructing a road that extended east from the reservation toward the Inland Waterway.

Simultaneously, dredging of the Inland Waterway



Spanning the inland waterway to the Sears Landing Firing Point, Camp Davis

at Stump Sound was carried out under the supervision of War Department engineers. Tons of wet sand pumped from the sound formed a road bed, jutting out approximately 3,500 feet from the west bank of the waterway.

If the road were to extend all the way across the sound, a drawbridge would be necessary to accommodate traffic on the waterway. Accordingly, the fill was terminated 110 feet from the east bank of the sound. Approaches were erected on each side of the water. A 75-foot steel barge fitting under the approaches is the means of transit from shore to shore. The barge is operated by a set of electrically controlled steel cables. When not in use, it is swung to the side to facilitate traffic through the waterway.

Thus, Sears Landing, as the firing point area is known, was for all practical purposes moved right into Camp Davis' front yard. Vehicles and guns could be moved from camp to firing point in a few minutes. The pontoon bridge, with a 30-ton capacity, was more than equal to the burden it would bear. The next step was to equip Sears Landing, which is two miles long and slightly more than a quarter mile wide.

Included in the building program were three latrines and septic tanks, three first aid buildings, one safety tower, an assembly building, two meteorological stations, two radio buildings, a photo laboratory, a guard house, and eight regimental storerooms. The firing point will accommodate two battalions of 3-inch guns or of 37-mm. guns. However, facilities can easily be

expanded by use of tractors to install firing battalions farther up the beach.

Officers at Camp Davis are unanimous in the belief that Sears Landing is ideally arranged for antiaircraft artillery. Good visibility is the rule. Firing will be directly over the ocean. Interference by shipping should be negligible, since the shipping lane is almost 30 miles out to sea.

Camp Davis' other antiaircraft firing point will be constructed soon at Fort Fisher, famed Civil War blockade fort located approximately 50 miles south of the Army post. This point will compare in size with the one at Sears Landing. A small arms firing point has been completed immediately south of the camp. This modern range consists of four butts with facilities for 40 targets apiece. It is a land range; the safety zone is ample.

Most of the 20,000 troops at Camp Davis are assigned to antiaircraft artillery units, although the 54th Coast Artillery, manning 155-mm. guns, also augments the garrison. The Army's only Barrage Balloon Training Center occupies an important place in the organization. Until recently the Air Corps had the entire responsibility for barrage balloons, but now the Coast Artillery is officially the using arm for that defensive weapon. The Air Corps retains its procurement and development responsibilities. It is understood that eventually the Barrage Balloon Training Center will be moved from Camp Davis to a new camp which has not yet been constructed.



Ruses of war are of great usefulness. They are detours which often lead more surely to the objective than the wide road which goes straight ahead. Animals have only one method of acting, but intelligent men have inexhaustible resources.—FREDERICK THE GREAT.

# Camp Stewart



MAJOR GENERAL WILLIAM H. WILSON, *Commanding*

*By Lieutenant Walter H. Dustmann, Jr.*

Actual firing of various types of antiaircraft defense weapons has been begun in earnest by the personnel of this fast-maturing south Georgia firing center.

With the six regiments and three separate battalions of the camp brought to full strength by the arrival of hundreds of selectees in recent weeks, this antiaircraft post hewn out of the thick pine and cypress forests of coastal Georgia only eight months ago now has passed its "growing pains" stage and is buckling down to the real thing in defense tactics preparatory to active participation in the First Army field maneuvers late this fall.

Lieutenant General Hugh A. Drum, commanding general of the First Army, recently toured the camp on an inspection trip and commended the progress of the units stationed here. The Camp Stewart command consists of the following regiments: The 70th of the Regular Army; the 207th, 209th, 212th, 213th, and 214th, all federalized National Guard units; and three separate battalions, the 101st, 104th, and 107th, also Guard units. These are implemented by the necessary camp overhead units.

All the regiments and battalions of the post, with the exception of one separate battalion, have engaged in initial firing practice at Fernandina, Florida, or in the heart of the vast Okefenokee Swamp of far-south Georgia. Fernandina, tiny isle off the north Florida coast, is being utilized as a temporary firing point pending acquisition of the entire camp firing area.

Work has already been started, however, on nine huge firing ranges which are to serve as the post's regular firing area.

Approximately 150,000 acres of the projected 360,000 acres which will make the Camp Stewart reservation the greatest in the nation in point of area have already been acquired either by purchase or condemnation proceedings. The entire area is expected to be secured to the United States Government by October 15.

Firing practice has been reported highly satisfactory by Camp Headquarters. The regiments have engaged in service firing with the 3-inch antiaircraft guns and the .30 caliber machine guns; some units with the .50 caliber machine guns.

Firing practice has progressed to the point where the



The 207th provides a Guard of Honor for General Drum

regiments are starting "antimechanized" firing and making return trips to Fernandina for additional antiaircraft firing. Trial shot problems for the 3-inch guns and use of small balloons released from the ground as targets for the other antiplane weapons have been the most-used types of practice firing to date.

Regular firing trips to Fernandina are supplemented by day and night tracking missions over the post itself. Every week-day morning for a two-hour period a plane from the 105th Observation Squadron at Columbia, South Carolina, either flies at the regular 10,000 feet tracking distance or spirals down over the camp parade grounds in mock bombings of antiaircraft gun crews who in turn practice simulated firing at the attacking aircraft.

Every Tuesday and Thursday night, antiaircraft searchlights flash into action over a wide portion of the camp area. The plane tries to avoid the beams and close in for a theoretical bombing attack. It is seldom, however, that the darting plane succeeds.

Another important phase of the antiaircraft training here consists of maneuvers designed to follow actual war conditions in occupation and defense of selected points designated as powder and chemical plants, bridgeheads or supply depots. These are usually staged against theoretical enemy forces which have effected invasion landings against the Atlantic coast and have set up bombardment airplane bases north and south of the Camp Stewart reservation.



## Camp Wallace

BRIGADIER GENERAL JOHN B. MAYNARD, *Commanding*

To a bride baking biscuits, a manufacturer making planes, or a general training soldiers, the first dozen is the hardest. The first selectees arrived at this replacement training center shortly after March 15. The men were new, the camp was new, and well, some of the officers were new, too. How many bugs would show up in the production line? Would the first graduates leave the place with a moderate minimum of soldierly sophistication, or would long-suffering B.C.'s in a hundred orderly rooms the country over invoke large, dark maledictions on the place that sent 'em such men, anyway.

The week of June 23, some 3,500 of the student body shoved off. Sun-tanned and husky, they swung down the road and climbed on trains—selectees no longer, nor veterans, either; but young soldiers who can hold down their jobs. It was the proof of the pudding. Camp Wallace was over the hump, in business.

The "first class" were guinea pigs in many ways—they saw the training program start slowly, and speed up to the accelerated tempo that General Maynard insists on now. They also saw the camp grow up around them. Painters and carpenters put the final

touches on buildings; Major Silas Cruse opened up the post exchanges, oyster shell was plentifully distributed on roads and walks, and at length two post theaters and the service club were opened. The service club is now in full swing, with a cafeteria, a library, lounges with tables for reading and writing, and a large dance floor where selectee "hep-cats" and "Minute Girl" guests are frequently beguiled by the strains of the camp's orchestra. The orchestra also uses the service club as a studio for radio broadcasts. In the meantime, as the camp recreational program proceeds, Soldiers' Service Bureaus in Houston and Galveston, assisted by recreational coordinators of the Federal Security Agency, are expanding their programs and facilities. The Army has also erected a recreational tent camp on East Beach in Galveston, in which soldiers on week-end pass in the resort city can find free lodging, and a round of hospitality.

Virtually complete, with a staff of 37 medical officers, the station hospital was officially opened on June 16. The Camp Surgeon is Lieutenant Colonel Edwin B. Maynard, brother of the Camp Commander. The hospital is of modern, one-level construction, and con-



#### FIELD DAY FOR THE 27TH COAST ARTILLERY TRAINING BATTALION

*Top*—Bunk-making contest. *Bottom*—Speed with the 37's

sists of thirty-eight separate buildings connected by covered ramps. It has a capacity of 416 beds. Rigorous mosquito control and strict sanitary regulations have helped keep the health of the command at an unusually high point.

An interesting outfit activated on the post in June is the 2d Signal Armored Battalion. Destined to become a component of still another "Hell on Wheels" force, similar to those publicized in the current "Battle of Tennessee," the battalion will be fully equipped to carry out all field services, yet will be fully armed for its own protection. A part of the Armored Force, the organization will carry telephone, telegraph, and radio communication on the very heels of the "Bayou Blitz" tanks.

At the end of the first training period, officers of the 6th Training Group took a deep breath and a step backward to survey the situation so far. The result was some shifting of personnel, and further streamlining of the training program.

The staff was further strengthened by the arrival of Colonel Robert P. Glassburn, C.A.C., who took over as Sixth Group executive, relieving Lieutenant Colonel Aaron Bradshaw, C.A.C., plans and training officer, who has been acting executive. Colonel Glassburn is the only full colonel on the post.

The replacement training center is to have a distinctive insignia, with a motto "Fit to Fight!" Everyone here is determined to make the phrase an accurate description.

# COAST ARTILLERY ORDERS

(Covering period May 1 through June 30, 1941)

Colonel Malcolm P. Andruss to duty in connection with recruiting, Wilmington, Delaware.

Colonel Karl F. Baldwin to H.D. of San Francisco, Fort Winfield Scott.

Colonel Thomas C. Cook to CARTC, Camp Callan.

Colonel Matthew A. Cross detailed at Logan High School in addition to other duties.

Colonel Frank Drake to H.D. of San Francisco, Fort Winfield Scott.

Colonel Charles A. French to 34th CA Brigade, Fort Bragg.

Colonel Robert P. Glassburn to CARTC, Camp Wallace.

Colonel William W. Hicks (IGD) to H.D. of Los Angeles, Fort MacArthur.

Colonel Allen Kimberley to 4th CA District, Fort McPherson.

Colonel Rufus F. Maddux to Fort Lawton.

Colonel Hollis LeR. Muller to Hawaiian Department, sailing San Francisco, June 12.

Colonel Randolph T. Pendleton to General Staff with Troops, Hq. Panama CA Command, Quarry Heights, Canal Zone.

Colonel Donald B. Sanger to University of San Francisco.

Colonel Charles H. E. Scheer, CA-Res., to active duty Office of the Administrator of Export Control, Washington, D. C.

Lieutenant Colonel Marvel G. Armstrong to AATC, Camp Haan.

Lieutenant Colonel Harry C. Barnes, Jr., to General Staff with Troops, III Army Corps, Presidio of Monterey.

Lieutenant Colonel Abraham L. Bullard to 79th, Fort Bliss.

Lieutenant Colonel Gordon DeL. Carrington, to General Staff Corps, Washington, D. C.

Lieutenant Colonel Albert D. Chipman to CARTC, Fort Eustis.

Lieutenant Colonel Harrington W. Cochran to BBTC, Camp Davis.

Lieutenant Colonel Nelson Dingley, III, to IGD, Hawaiian Department, sailing San Francisco, July 8.

Lieutenant Colonel Alva F. Englehart to Hq., 9th CA District, Fort Winfield Scott.

Lieutenant Colonel Louis D. Farnsworth to Hq., IX Army Corps, Fort Lewis.

Lieutenant Colonel William M. Goodman (GSC) to War Department General Staff.

Lieutenant Colonel Charles S. Harris to GHQ, Army War College.

Lieutenant Colonel Joseph C. Haw to H.D. of Sandy Hook, Fort Hancock.

Lieutenant Colonel Edward W. Hendrick to General Staff Corps.

Lieutenant Colonel Daniel W. Hickey, Jr., to Office of the Chief of Coast Artillery.

Lieutenant Colonel Dale D. Hinman to duty with Organized Reserves, Third Corps Area, Norfolk, Virginia.

Lieutenant Colonel Willard W. Irvine to General Staff Corps, Washington, D. C.

Lieutenant Colonel John T. Lewis to Office of the Chief of Staff.

Lieutenant Colonel Joseph D. McCain to Hawaiian Department, sailing San Francisco, June 24.

Lieutenant Colonel Watson L. McMorris to 9th CA District, Fort Winfield Scott.

Lieutenant Colonel Edwin C. Mead to CARTC, Camp Callan.

Lieutenant Colonel Reinold Melbert to 57th, Camp Pendleton.

Lieutenant Colonel Howard H. Newman to Fort Lawton.

Lieutenant Colonel Wilmer S. Phillips to Office of the Chief of Coast Artillery.

Lieutenant Colonel Wade W. Rhein to Hawaiian Department, sailing San Francisco, June 24.

Lieutenant Colonel Carl J. Smith to H.D. of Sandy Hook, Fort Hancock.

Major Winfried B. Arens to Hawaiian Department, sailing San Francisco, June 12.

Major Charles J. Barry to Office of the Adjutant.

Major Herbert T. Benz to instructor, Coast Artillery School.

Major Orley D. Bowman to 62d, Fort Totten.

Major George R. Burgess to H.D. of Portsmouth, Fort Constitution.

Major Walter H. Carlisle to H.D. of Charleston, Fort Moultrie.

Major Theodore J. Dayharsh to Hq., III Army Corps, Presidio of Monterey.

Major Henry H. Duval to 54th, Camp Davis.

Major Parmer W. Edwards to 34th CA Brigade, Fort Bragg.

Major Max D. Emmanuel to Hq., 39th CA Brigade, Fort Bliss.

Major Albert J. Engelberg to Air Corps Advanced Flying School, Albany, Georgia.

Major Bonner F. Fellers to General Staff with Troops, Cairo, Egypt.

Major Andrew S. Gamble to 40th CA Brigade, Fort Sheridan.

Major Charles W. Gettys to 34th CA Brigade, Fort Bragg.

Major Gerald G. Gibbs to H.D. of Sandy Hook, Army Base, Brooklyn, N. Y.

Major Edgar M. Gregory to CAUTC, Camp Davis.

Major Clem O. Gunn to instructor, Coast Artillery School.

Major Melton A. Hatch to CAUTC, Camp Davis.

Major Frederick L. Hayden (GSC) to Office of the Chief of Staff.

Major George F. Heaney, Jr., to 79th, Fort Bliss.

Major Everett K. Higgins to Hawaiian Department, sailing San Francisco, June 7.

Major James F. Howell, Jr., to instructor, Command and General Staff School.

Major John J. Johnson to BBTC, Camp Davis.

Major James S. Keller to BBTC, Camp Davis.

Major Lyman L. Lemnitzer to General Staff Corps, Washington, D. C.

Major Edward L. Littleton (QMC) to Fourth Corps Area Service Command, Camp Wheeler.

Major Harold A. Maxfield, CA-Res to active duty Instructor, Coast Artillery School.

Major Gay E. Miller to Hawaiian Department, sailing San Francisco, June 7.

Major Floyd A. Mitchell to Philippine Department, sailing San Francisco, July 7.

Major Frank F. Miter to 54th, Camp Davis.

Major Samuel T. Moore, AC-Res., to active

duty with Coast Artillery Corps, BBTC, Camp Davis.

Major Allen M. Murphy to Hq., H.D. of Sandy Hook, Fort Hancock.

Major Driscoll A. Otto to Office of the Chief of Staff.

Major Douglass G. Pamplin to BBTC, Camp Davis.

Major James F. Pichel to Sacramento High School.

Major Montgomery B. Raymond to 71st, Fort Story.

Major John E. Reierson to 68th, Camp Edwards.

Major Grayson Schmidt to 36th CA Brigade, Camp Edwards.

Major Charles E. Shepherd to Hq., First Army, Governors Island, N. Y.

Major Alba C. Spalding to General Staff with Troops, Panama CA Command, Quarry Heights, Canal Zone.

Major Harry F. Townsend to BBTC, Camp Davis.

Major Donald B. Wilson to Office of the Chief of Staff.

Major Daniel McC. Wilson to CARTC, Fort Eustis.

Major Walter J. Wolfe to BBTC, Camp Davis.

Major Willard L. Wright to 71st, Fort Story.

Captain Roger S. Benson to Philippine Department, sailing San Francisco, July 17.

Captain Frank A. Bogart to General Staff Corps, Washington, D. C.

Captain Paul R. Bravender to Air Corps Advanced Flying School, Phoenix, Arizona.

Captain Henri B. Brunet to Air Corps Advanced Flying School, Mather Field.

Captain Preston C. Clayton to Recreational Area, Panama City, Florida.

Captain Keith F. Cordrey to Staff and Faculty, Coast Artillery School.

Captain Richard S. Crowder to Hawaiian Department, sailing San Francisco, June 12.

Captain George M. Davis to instructor, Coast Artillery School.

Captain Fred G. DeBerry (QMC) to Ninth Corps Area Service Command, Camp Roberts.

Captain Ralph W. Farrar to BBTC, Camp Davis.

Captain Frederick P. Fein to Manchester Air Base, Manchester, New Hampshire.

Captain Austin E. Brigrance to Coast Artillery Board, Fort Monroe.

Captain Robert E. Gullette to BBTC, Camp Davis.

Captain William L. Hall to Air Corps Advanced Flying School, Phoenix, Arizona.

Captain Theodore F. Hoffman to United States Military Academy, West Point, N. Y.

Captain Ellie B. Jones to BBTC, Camp Davis.

Captain William H. Jordan to H.D. of Charleston, Fort Moultrie.

Captain Lloyd B. Knutsen to Hawaiian Department, sailing San Francisco, June 7.

Captain Gerson L. Kushner to 36th CA Brigade, Camp Edwards.

Captain Reece H. Lewis to Hawaiian Department, sailing San Francisco, June 7.

Captain Harold E. Linderson to Panama Canal Department, sailing New York, May 15.

Captain John R. McCrory, CA-Res, to active duty, Office of the Under Secretary of War.

Captain William F. McKee to 71st, Fort Story.

Captain Oswald H. Milmore to BBTC, Camp Davis.

Captain Clyde R. Nichols to instructor, Coast Artillery School.

Captain Charles G. Patterson to 39th CA Brigade, Fort Bliss.

Captain James W. Phillips to BBTC, Camp Davis.

Captain Victor A. Rappoport to duty in the office of the Under Secretary of War.

Captain John R. Richards, Jr. (QMC), to CAUTC, Camp Davis.

Captain Anton J. Richetta to Air Corps Gunnery School, Las Vegas, Nevada.

Captain John B. Richmond to Panama Canal Department, sailing New York, May 15.

Captain Andrew Samuels, Jr., to United States Military Academy, West Point, N. Y.

Captain David S. Satterwhite to Philippine Department, sailing San Francisco, July 24.

Captain Charles H. Scott to instructor, Coast Artillery School.

Captain Henry M. Spengler to AATC, Camp Haan.

Captain Roland W. Stoebe to Office of the Chief of Staff.

Captain Walter T. Stone to instructor, Coast Artillery School.

Captain John N. Storry to instructor, Coast Artillery School.

Captain Myron B. Tauer to Puerto Rican Department, sailing New York, July 26.

Captain Merle R. Thompson to 39th CA Brigade, Fort Bliss.

Captain Oscar H. Thompson to Air Corps Advanced Flying School, Maxwell Field.

Captain Harrison F. Turner to CAUTC, Camp Davis.

Captain Stuart C. Westerfeld (QMC) to Puerto Rican Department, sailing Charleston, May 26.

Captain Clifford J. Woodley to Air Corps Basic Flying School, Taft, California.

First Lieutenant William J. Adams to Puerto Rican Department, sailing New York, June 4.

First Lieutenant Roger A. Amiot to BBTC, Camp Davis.

First Lieutenant Ralph T. Balsly to BBTC, Camp Davis.

First Lieutenant James G. Barr to BBTC, Camp Davis.

First Lieutenant Russell D. Barros to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Martin D. Bates to BBTC, Camp Davis.

First Lieutenant Charles J. Bekaert to Panama Canal Department, sailing New York, July 23.

First Lieutenant Harold F. Bishop to BBTC, Camp Davis.

First Lieutenant Kenneth L. Boggs to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Thomas S. Bryan to Philippine Department, sailing San Francisco, June 5.

First Lieutenant Charles A. Bucher, Jr., to Philippine Department, sailing San Francisco, June 5.

First Lieutenant George G. Bull to instructor, Coast Artillery School.

First Lieutenant John J. Burke to 40th CA Brigade, Fort Sheridan.

First Lieutenant Henry B. Burkes to BBTC, Camp Davis.

First Lieutenant Clarence E. Burnett to instructor, Coast Artillery School.

First Lieutenant Earl R. Carle to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Luvern J. Carrier to BBTC, Camp Davis.

First Lieutenant Duane L. Cosper to Philippine Department, sailing San Francisco, June 5.

First Lieutenant Fred L. Coward, Jr., to BBTC, Camp Davis.

First Lieutenant Donald B. Cruikshank to instructor, Coast Artillery School.

First Lieutenant John S. Croll to BBTC, Camp Davis.

First Lieutenant Paul W. Daley to BBTC, Camp Davis.

First Lieutenant Albert C. Darcy, Jr., to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Paul R. Davis to BBTC, Camp Davis.

First Lieutenant William V. Davis to instructor, Coast Artillery School.

First Lieutenant Edmund B. Eaman to BBTC, Camp Davis.

First Lieutenant John T. Evans to instructor, Coast Artillery School.

First Lieutenant Fred B. Flocken to BBTC, Camp Davis.

First Lieutenant Ronald B. Grebner to Air Corps Basic Flying School, Taft, California.

First Lieutenant Benson Gayton to Philippine Department, sailing San Francisco, July 7.

First Lieutenant Dallas F. Haynes to 39th CA Brigade, Fort Bliss.

First Lieutenant Raymond W. Hoag to instructor, Coast Artillery School.

First Lieutenant Jethro T. Hudgins, CA-Res., to active duty instructor, Coast Artillery School.

First Lieutenant Robert H. Hutcheson to BBTC, Camp Davis.

First Lieutenant William H. Jeffress to instructor, Coast Artillery School.

First Lieutenant William S. Johnson, Jr., to BBTC, Camp Davis.

First Lieutenant Harry C. Johnston to instructor, Coast Artillery School.

First Lieutenant Lawrence Kanters to Panama Canal Department, sailing New York, June 5.

First Lieutenant John P. A. Kelly to 71st, Fort Story.

First Lieutenant Donald E. Killmer to instructor, Coast Artillery School.

First Lieutenant Joseph D. Kwiatkowski to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Eugene B. Lanier to BBTC, Camp Davis.

First Lieutenant Cecil G. LeBrun to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Robert G. Liebhardt to instructor, Coast Artillery School.

First Lieutenant Harry C. Loudenslager to instructor, Coast Artillery School.

First Lieutenant Donald MacGrain to Puerto Rican Department, sailing New York, June 4.

First Lieutenant William F. Madison to Hq., H.D. of Narragansett Bay, Fort Adams.

First Lieutenant Guilford L. Mattern, CA-Res., to active duty, Office of the Chief of Coast Artillery.

First Lieutenant Max McCord to instructor, Coast Artillery School.

First Lieutenant John L. McMahon to Panama Canal Department, sailing New York, July 23.

First Lieutenant Allen E. Mayhew to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Howard E. Michelet to instructor, Coast Artillery School.

First Lieutenant Harry C. Minsker to Philippine Department, sailing San Francisco, July 24.

First Lieutenant Cloris R. Molineux to BBTC, Camp Davis.

First Lieutenant Charles R. Murphy to BBTC, Camp Davis.

First Lieutenant John M. Nutt, Jr., CA-Res., to active duty instructor, Coast Artillery School.

First Lieutenant Roger B. Payne to Air Corps Advanced Flying School, Maxwell Field.

First Lieutenant Linton W. Pound to BBTC, Camp Davis.

First Lieutenant George W. Race to instructor, Coast Artillery School.

First Lieutenant Lyman H. Robertson to instructor, Coast Artillery School.

First Lieutenant George E. Rogers to BBTC, Camp Davis.

First Lieutenant Dorell W. Ryker to instructor, Coast Artillery School.

First Lieutenant Arthur L. Sanford, Jr., to BBTC, Camp Davis.

First Lieutenant Edwin E. Schaefer to BBTC, Camp Davis.

First Lieutenant Kenneth J. Schultz to Air Corps Gunnery School, Las Vegas, Nevada.

First Lieutenant Edward R. Seyburn to St. Augustine Recreational Area, Florida.

First Lieutenant Edward Silberman to BBTC, Camp Davis.

First Lieutenant William H. Smith to instructor, Coast Artillery School.

First Lieutenant Homer J. Stockwell to Air Corps Gunnery School, Las Vegas, Nevada.

First Lieutenant Harold T. Theinhaus to 9th CA District, Presidio of San Francisco.

First Lieutenant Joe F. Thompson to BBTC, Camp Davis.

First Lieutenant William L. Timmerman to BBTC, Camp Davis.

First Lieutenant Linn P. Towsley to instructor, Coast Artillery School.

First Lieutenant John J. Wald to 57th, Camp Pendleton.

First Lieutenant Frank P. Warren, CA-Res., to active duty instructor, Coast Artillery School.

First Lieutenant Alan B. White to 57th, Camp Pendleton.

First Lieutenant Edwin C. Whitney to instructor, Coast Artillery School.

First Lieutenant George L. Williams to Philippine Department, sailing San Francisco, June 5.

First Lieutenant Harold C. Williams to Hq., II Army Corps, Wilmington, Delaware.

First Lieutenant Robert L. Yoder to BBTC, Camp Davis.

First Lieutenant Basil B. Zeran to Air Corps Advanced Flying School, Phoenix, Arizona.

Second Lieutenant Charles R. Arvin to Philippine Department, sailing San Francisco, July 14.

Second Lieutenant Thomas R. Baines to Panama Canal Department, sailing New York, July 17.

Second Lieutenant Tom W. Barnett to BBTC, Camp Davis.

Second Lieutenant Stanley Biesack to BBTC, Camp Davis.

Second Lieutenant Raymond W. Bliss to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Judson K. Burch to BBTC, Camp Davis.

Second Lieutenant John P. Crandell to Philippine Department, sailing San Francisco, July 14.

Second Lieutenant Jack P. Crawford to

Philippine Department, sailing San Francisco, July 24.

Second Lieutenant James R. Dawson to Air Corps Advanced Flying School, Mather Field.

Second Lieutenant David A. Dillard to BBTC, Camp Davis.

Second Lieutenant Byron L. Ertsgaard to instructor, Coast Artillery School.

Second Lieutenant Walter G. Efrd, Jr., to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Theodore R. Esatow to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Eugene H. Field to Air Corps Advanced Flying School, Phoenix, Arizona.

Second Lieutenant John F. Freund to H.D. of Chesapeake Bay, Fort Monroe.

Second Lieutenant Stanley Friedline to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant William E. Gamble, Jr., CA-Res., to active duty instructor, Coast Artillery School.

Second Lieutenant George K. Gutterman to Panama Canal Department, sailing New York, July 23.

Second Lieutenant Thomas A. Hackett to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Ernest S. Haile II to

Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Arthur L. Hecht to Panama Canal Department, sailing New York, July 23.

Second Lieutenant Melvin H. Herr to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Frank M. Hines to Panama Canal Department, sailing New York, July 23.

Second Lieutenant Selgie V. Himson to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Walter S. Housman to Panama Canal Department, sailing New York, July 17.

Second Lieutenant William F. Kennedy to Air Corps Advanced Flying School, Mather Field.

Second Lieutenant Robert A. LeClair to BBTC, Camp Davis.

Second Lieutenant Gareld E. Marsh to instructor, Coast Artillery School.

Second Lieutenant John I. Moore III to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Thomas H. Ohl to Panama Canal Department, sailing New York, May 15.

Second Lieutenant Lester L. Peterie to Philippine Department, sailing San Francisco, June 5.

Second Lieutenant Eugene F. Rausch to

Panama Canal Department, sailing New York, July 23.

Second Lieutenant Herman C. Robinson to BBTC, Camp Davis.

Second Lieutenant Edwin G. Schuck to instructor, Coast Artillery School.

Second Lieutenant Oliver K. Smith, CA-Res., to active duty instructor, Coast Artillery School.

Second Lieutenant Jefferson W. Speck to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Daniel J. Stanton to Air Corps Advanced Flying School, Barksdale Field.

Second Lieutenant Edward A. Stewart to Panama Canal Department, sailing New York, July 23.

Second Lieutenant Martin F. Sullivan to Panama Canal Department, sailing New York, July 23.

Second Lieutenant Harold Tivey to instructor, Coast Artillery School.

Second Lieutenant William L. Wadsworth to Panama Canal Department, sailing New York, June 5.

Second Lieutenant Carl G. Weeks to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Roderick P. Whittier to BBTC, Camp Davis.

Second Lieutenant John W. Zschoche to Fourth Corps Area Service Command, Atlanta, Georgia.



# BOOK REVIEWS



## What Makes Italy Tick

**SPURS ON THE BOOT.** By Thomas Morgan. New York: Longmans, Green and Company, 1941. 346 Pages; Index; \$2.50.

Many of us have wondered, without actually learning anything definite, just what is the story in Italy. Mussolini and Fascism have interested us, but the manifestations of these two phenomena seemed so inconsistent and so divorced from anything logical that we have turned from the study with a weary sigh.

*Spurs On the Boot* is the story of modern Italy, and what has happened to it. Thomas Morgan was an American newsman in Italy, assigned to the Vatican, from 1921 to 1938. He was in touch with events as they happened—and what events! To the American, Italy's internal affairs and her foreign relations as delineated by Mr. Morgan take on the aspect of a comic opera being played "for keeps."

There is many a chuckle in this book, but they are interlarded with the tragedy of the betrayal of a fine nation. Mr. Morgan believes in Italy—he does not believe in Fascism or Mussolini. He says of the Italians:

"Aspersions have been cast upon the common soldier of Italy. The terrible defeats suffered were not due to lack of fighting fiber in the men. The peasant and the mountaineer are as hardy a stock as is found anywhere in all the world. Our everyday life in America uncovers constantly before us in commerce, in pioneering and in sports that the hardworking Italian is not a coward. Much discredit has been laid upon the common soldier for the failures of the staff and the government. At Caporetto, the fighting men had neither food, ammunition, nor clothing. Guadalajara was not their cause and neither were Greece and Egypt. Bravery showed out in relief at the Battle of the Piave where an Italian army, greatly outnumbered, routed the flower of the Austrian Empire. I heard the late Major General Allen, U.S.A., say that it was the greatest display of heroism in the whole war."

Speaking of Mussolini, the author says, ". . . He ranted over the air. He sent pictures of tanks and artillery, of airplanes in combat and of battleships in action in the bays of Naples and Taranto. His loud talk was published in the newspapers of the world. It was not the military men who were fooled. They knew. But in times of peace the democracies spurn a soldier. . . . And with his unconquerable legions, with their tanks, airplanes and battleships, he met the Greeks. He met the Army of the Nile. He met the British Navy. . . ."

We recommend this book without reservation. Not only is it a picture of a dictator and a dictatorship which will make us proud of democracy, but it will give the serious student of history excellent source material.

## Democratic America

**THE PATRIOTIC ANTHOLOGY.** Introduction by Carl Van Doren. New York: Doubleday, Doran and Company, 1941. 514 Pages; Index; \$3.00.

This is a collection of most of the patriotic poems and bits of prose that we read during our school days, and since. Patrick Henry, *The Declaration of Independence*, Joyce Kilmer, Grantland Rice, *The Epitaph on the Alamo*, and *America, the Beautiful* are here, along with *Sheridan's Ride* and most of the other gems that have kept some of us believing that America and its traditions are worth defending. There are poems and other selections that the reviewer, who claims at least a nodding acquaintance with American literature, never heard of, but is pleased to have found.

The book is divided into eight sections, each section fitting one of the periods of United States history.

From Mr. Van Doren's introduction, we quote:

"Meanwhile here is a panorama of American patriotism chosen to illustrate high moments in American history, high thoughts, high emotions, high hopes. . . . Men do not live merely day by day, self-centered and isolated. They live also in the guiding shadow of the past in which they have been associated, in the beckoning light of the future toward which they must advance together. And patriotism, while often at fault, is at its best their simplest and most natural bond of union."

This book belongs in the library of every parent, every person whose activities bring him in contact with characters to be formed, and every American weary of the attacks on our democracy.

### The Philippines

**CROSS WINDS OF EMPIRE.** By Lieutenant Colonel Woodburn E. Remington. New York: The John Day Company, 1941. 279 Pages; Illustrated; \$3.00.

Colonel Remington paints a dark picture of the Philippines' future after 1946, when the present plans call for Philippine independence. The plans of Japan, the racial antipathies of the many Filipino groups, the ineptness and self-seeking of the Islands' politicians, the tariff barriers that will be raised by the United States, and the very nature of the Filipinos themselves promise chaos and suffering, according to Colonel Remington.

Throughout the book, the author reveals his liking for certain of the Filipino races, especially the Moros. The reader feels that the natives are very fine people—within the limits imposed by their background. Their weaknesses are the result of coming too far too fast, as well as their Oriental heritage.

Aside from the political import of the book, the reader will find a wealth of information about the lesser known peoples of the Islands. Colonel Remington is not only observant, he has the knack of picking out the trivial incident that indicates the scope of the entire picture. He has traveled extensively in Malaya, and has put down his observations in a meaty, entertaining style.

† † †

### Official History

**THE BATTLE OF BRITAIN.** Official British Air Ministry Record. Garden City: Garden City Publishing Company, 1941. 56 Pages; Illustrated; Maps; Paper Bound; 25c.

In spite of the necessity of keeping secret any information which might help the enemy, the Air Ministry has done a masterful job of telling just enough to make the story of those summer and autumn days of 1940 intelligible and interesting. The tactics of an air-raid defense are almost as interesting as the technique, both of which are touched upon in this pamphlet.

For those of us who have been following the progress of the air war over Britain either from a professional viewpoint or the viewpoint of spectators, this book strips out the nonessentials and gives us the basic story, well-written, and with enough specific detail to remove it from the category of the usual dull official report.

On this edition, no royalties are being paid, and the entire net profits of the publishers are being donated to the R.A.F. Benevolent Fund.

† † †

### America: Conception to Adolescence

**THE MORNING OF AMERICA.** By Frank J. Klingberg. New York: D. Appleton-Century Company, 1941. 464 Pages; \$3.00.

Professor Klingberg has presented a really encyclopedic survey of the background and early history of our country. He has given a mass of fact in pleasing narrative style which will delight those who prefer their history the easy way. His book is one which should especially be read by those who have not been too well grounded in American his-

tory. It is voluminous not only as to fact but also exhaustive in its presentation of factors affecting the political, social, physical, and cultural development of American life. For students who feel already qualified it is a well-stocked thesaurus of character sketches, incidents, and familiar quotations and will probably yield treasures hitherto unsuspected even by them.

*The Morning of America* is not entirely accurate as a title, for chronologically, Professor Klingberg goes back to the earliest tinges of colonial dawn. He prefaces his subject proper with a complete picture of the British Empire under George III in 1763 and follows our country's growth to the Jacksonian Era of 1829. Achieving an obvious purpose to demonstrate the inevitable influence of the Anglo Saxon element in our national make-up, he still allots proportionate credit to other racial elements.

Not content with charming character studies of beloved American heroes, the author recapitulates in careful analysis the progress achieved in our country at each milestone, surveying the manners, thought, predilections, problems, business and social life then prevalent. His portrayal of our forebears makes a convincing reaffirmation of American ideals in days when this attitude must remain a deep and cherished conviction in the hearts and minds of all true Americans.

† † †

### Survey of Grand Strategy

**BATTLE FOR THE WORLD.** By Max Werner. Translated by Heinz and Ruth Norden. New York: Modern Age Books, 1941. 383 Pages; \$3.00.

After reading this book, which treats exhaustively of the conduct of modern war, one is impressed by the changes which the so-called total war efforts are making in present-day civilization. It appears that the individual or human element, on which these war efforts must ultimately rest, has attained a paradoxical position. Although increased mechanization, fire power, and dependence on material resources seem to minimize the importance of the individual soldier, the concept of modern war transcends even the idea of the "nation in arms," and makes its impact felt literally on the lives of all citizens of the nation.

The author analyzes the experience of the present war to date in a sort of master critique. He points out that everything must be subordinated to the successful prosecution of the struggle and that diplomacy and politics must be the handmaidens of the military effort. It is discouraging to read of the Machiavellian perfection of the German grand strategy as contrasted to the comparative ineffectiveness of the democracies' policies. Werner's exposition of the differences in attitude and method as concerns the efforts of Germany, and those of Britain and France is convincing in its frank approval of the former and its castigation of the latter. In large measure this is a recital of the oft-repeated instances of German thoroughness on one hand and democratic self-complacency and lack of purpose on the other. In his critique, the author occasionally indulges in "I told you so" references to predictions in his *Military Strength of the Powers*.

Considerable space is devoted to the position and importance of Russia in the political picture. Surprising facts are set forth by Werner as to her military potentialities.

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His survey of the Finnish War may upset certain ideas of Russian inefficiency hitherto entertained.

In addition to analysis and critique, the author embarks on a remarkable prognosis of things to come, discussing the position of America and advocating steps we should take in this ever-expanding struggle. Factually replete with statistics and quotations from leading military sources on both sides in this conflict, *Battle For The World* should furnish nourishing food for thought for all students of the present metamorphosis of grand strategy.

## Science and Warfare

**MILITARY SCIENCE TODAY.** By Lieutenant Colonel Donald Portway, Royal Engineers. New York: Oxford University Press, 1941. 154 Pages; \$1.75.

This treatise, written by the senior tutor and University Lecturer in Engineering of St. Catherine's College, Cambridge, surveys the application of mechanical and scientific developments to modern warfare.

The author begins by discussing the place of science in the history of warfare and then shows how modern tactical ideas have been affected by the perfection of today's machinery. He stresses the importance of research and experiment in the development of all scientific advances and drives home the importance of the time element in the adaptation of such advances to military use. Also emphasized are difficulties of standardization, procurement funds, and priorities. These are problems which complicate greatly the task of equipping modern armies.

Colonel Portway follows up this background with a step-by-step treatment of mechanization problems, present-day artillery, and signal communications. With the emphasis on mobile forces in contemporary military operations, he properly devotes considerable attention to the analysis of progress in field engineering, pioneer methods, fortification, and mining and demolitions; in short, means to abet and to frustrate the potency of the *blitzkrieg*. Chemical warfare, so little exploited to date, is not neglected by the author and due credit is given to the Air Force Component, that echelon of aerial forces organically assigned to the ground force command.

This book is primarily of interest to the soldier and is well provided with illustrations of matériel and methods now employed by British forces. However, it is clearly written and should be instructive to everyone. The scholastic background of the author sometimes manifests itself in classical quotations, chosen with true felicity to illustrate a point in his exposition.

**MILITARY LAW AND COURT-MARTIAL PROCEDURE;** Army Officers' Blue Book. By Colonel F. Granville Munson and Major Walter H. E. Jaeger. Washington: National Law Book Company, 1941. 126 Pages; Index; Appendix; \$1.50.

Here is a handy little pocket-sized, notched-indexed book on military law that should be of assistance to any member of a court-martial. There is a rather complete discussion, in language that does not require a lawyer to understand it, of the conduct of courts-martial and of mili-

tary law generally. Perforated pages in the back of the book may be removed and used as a step-by-step guide in the conduct of a trial.

A foreword by the Judge Advocate General of the Army expresses the desirability of resorting to company punishment whenever possible, rather than courts-martial.

The only adverse criticism this reviewer offers is that statements are made on points of law without reference to decisions that might back up the assertions. It is possible to visualize instances where an officer may proceed on the basis of a statement in this book and be at a loss when the time comes to prove the correctness of his procedure. On the whole, it is believed that the book is well worth the purchase price to every officer, and even more so to junior officers and officers of the Reserve and Guard called to Federal service.

\* \* \*

**THE NINE DAYS' WONDER.** By John Masefield. New York: The Macmillan Company, 1941. 60 Pages; \$1.25.

This is a compendium of first-hand accounts of the epic evacuation from Dunkirk, abstracted from diaries and officials' accounts of the work of moving the 316,000 trapped soldiers. Surprisingly factual for a work by a distinguished poet, it is movingly written as a fitting tribute to the resourcefulness and tenacity of the British Navy, the harbor boatmen, the fishermen, and the small boatmen who contributed unstintingly to the salvaging of the BEF and the 1st French Army from the débâcle of Flanders.

As might be expected, Mr. Masefield has included several verses, written as only he could write them, to provide the spirit of living heroism that was Dunkirk.

\* \* \*

### A Guide for Social Case Work

**SOCIAL CASE WORK IN NATIONAL DEFENSE.**

By Pauline V. Young. New York: Prentice-Hall, 1941. 292 Pages; Appendices; \$2.50.

Dr. Young, author of six previous works on social problems, presents in this book a clear analysis of the increased need for social normalcy during the present period when so many readjustments are required in millions of lives by the National Defense effort. Against a background of experience in nation-wide field work as well as in research and study, she evaluates the psychological changes in the nations' homes and the repercussions such shake-ups may produce in the temperamental equilibrium of the nation as a whole.

Case workers are urged to interpret the need for the regulation and restriction which are necessary concomitants of military service, and to smooth as much as possible the disruption occurring in many homes subsequent to the departure of male members of the family.

Provided with appendices of real use for reference as to regulations concerning benefit rights of service individuals, this book should prove of interest and value to all social field workers, Red Cross workers, teachers, and welfare organizations. For those in the military service charged with cooperating with social agencies in problems of enlisted men, this volume should provide valuable insight into the nature and treatment of these problems.

# Map and Aerial Photograph Reading

By LIEUTENANT COLONEL W. F. HEAVEY,  
Corps of Engineers, U. S. Army

This manual is written primarily for the combat officer and noncommissioned officer. It is profusely illustrated with forty-five drawings. The text on the important subject of Aerial Photograph Reading features twelve full-page reproductions printed on enamel stock (to bring out all details) and a four-color map carrying an overlay in a fifth color indicating the location on the map of various aerial photographs.

All problems have been based on the same map, and a four-color reproduction, size 31" x 34", is included with each copy of this text. Also included are two protractors, one graduated in degrees, the other in *mils*, and a photo *coördinate* and *grid coördinate* card.

"Its chief value is that it is simple and clear cut, excellently illustrated with diagrams and with twelve of the clearest representations of aerial photographs which it has been our pleasure to see in a printed textbook. . . . This is the kind of text I should like to use to train my soldiers."—*The Military Engineer*

#### CHAPTER:

- I. INTRODUCTION.
- II. LOCATION AND COÖRDINATES.
- III. DISTANCE AND TIME.
- IV. DIRECTION AND AZIMUTHS.
- V. ORIENTATION.
- VI. ELEVATION AND RELIEF.
- VII. MAP READING IN THE FIELD.
- VIII. READING AERIAL PHOTOGRAPHS.
- IX. APPENDIX.
- INDEX.

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TORY OATH. By Tim Pridgen. New York: Doubleday, Doran and Company, 1941. 371 Pages; \$2.50.

Students of Revolutionary War history have always been more than casually interested in the Scots of the Cape Fear country. With every reason to hate the Hanover King by whose order many were slaughtered and many were driven from Scotland, they stood by the oath they took after Prince Charlie's uprising was crushed. They were "unreconstructed" Tories throughout the whole Revolution, with the stubbornness that reputation attributes to the Scot.

*Tory Oath* is fiction with the background of those turbulent times in North Carolina. Duncan Stuart, the central character, is far from a brilliant man. He is honest, stubborn, and rather slow-witted, and quite a man physically. Although the Whigs are his friends, his loyalty is to the Scots and the oath the Scots took after Culloden—to the king.

What follows is good blood-and-thunder. Battles, individual fights, a horse race with death for the loser, and many other stirring events make good light reading, with the historical interest thrown in for good value.



BRITISH CITIES AT WAR. Report of the American Municipal Association, by James L. Sundquist. Chicago: Public Administration Service, 1941. 110 Pages. Paper Cover. \$1.00.

A report, in eleven chapters, telling what appears to be the complete story of air-raid organization in British cities. Much of the material is from British newspapers and other periodicals, with the resultant flavor of authenticity and familiarity with immediate problems.



SAFETY IN FLIGHT. By Assen Jordanoff. New York: Funk & Wagnalls Company, 1941. 371 Pages; Over 325 Illustrations; Index. \$3.00.

This new Jordanoff book, the third of a series on civilian flying, is an advanced course for airmen who contemplate cross-country flying. Weather conditions, navigation and related subjects are treated in a thorough manner, and in language and form that should be understandable to any literate person. Well-planned and well-executed pictures and drawings illustrate the points. The whole book is done in a homely style, as far removed from textbook dryness as is seemingly possible.

Even non-flyers who are interested in the problems and activities of airmen will find much that is instructive.



LEGAL EFFECTS OF MILITARY SERVICE. By Hanson J. Baldwin Assisted by John Kirkland Clark. New York: S. Ward, 1941. 61 Pages; Buckram binding, \$2.00; Paper binding, \$1.00; Pocket edition, without text of laws, \$0.50.

This book discusses the legal effect of military service under the Soldiers' and Sailors' Civil Relief act of 1940, the Selective Training and Service act of 1940, and the National Service Life Insurance act of 1940. It is prepared in clear language, but is by no means exhaustive.

**MATHEMATICAL RECREATIONS AND ESSAYS.**

By W. W. Rouse Ball. Revised by H. S. M. Coxeter.  
11th Edition. New York: The Macmillan Company,  
1941. 409 Pages; Index; \$2.60.

For the mathematician, practicing or amateur, who likes to play with figures, this book will while away many an evening. Fourteen chapters, all on varied mathematical subjects, provide wit-sharpening exercise for the person who likes to make figures behave.

Most of the well-known problems are here, along with many that will be new to all but the most rabid slide-rule manipulators. Map-coloring problems (not as easy as they would seem), chess-board problems, games with polyhedra, and hundreds of other brain-twisters assure interesting evenings ahead.



**DEFENSE OF THE AMERICAS.** By André Chéradame. New York: Doubleday, Doran and Company, 1941. 304 Pages; \$3.00.

M. Chéradame has distrusted Germany all his life, and has lived to see his prophecies of German ambitions come true. His first book, published in 1901, pointed out the dangers of a militant Germany. His present status as a refugee in Canada bears out the validity of the opinions he has set forth in a long series of books.

The author believes that we are in real danger from totalitarian ambitions. To avoid defeat, military and political, he advocates a guerrilla army of our whole able-bodied male population, backing up our regular army. The advantages are obvious—we would have a huge, effective fighting force to aid our effective striking force, at little or no expense. Cantonments, uniforms, messing, and the thousands of other items that make armies expensive would not be required. Armbands for identification, and professional instructors, would be the only expense of such a secondary army. Aid to the subjects of the totalitarian conquests is another measure advocated by the author. He believes that with financial and moral assistance, the citizens of the "slave nations" will wreck the dictators' military machines without armed intervention on our part.



**HOW TO SAY IT IN SPANISH.** By Gwynn, Canova and Webb. Harrisburg: Military Service Publishing Company, 1941. 143 Pages; Leatherette Binding (Flexible); 75c.

Western Hemisphere Defense will sooner or later bring us in close contact with our Spanish-speaking neighbors to the south; a working knowledge of Spanish might be very helpful. Three Army officers have collaborated to remove much of the pain from our first steps in that language.

*How To Say It In Spanish* has been put together with thoughtful care to give the soldier a minimum vocabulary of Western Hemisphere Spanish. Pronunciation is marked clearly, the vocabulary and the phrases in the book have been hand-picked for usefulness to the soldier, and a few handy rules for catch-as-catch-can conversation are included.

The division into chapters and the subdivision into sections is particularly well done. For normal purposes, even without study the average American should be able to open the book to the proper chapter and make his wants known.

## Coast Artillery Field and Technical Manuals

These Coast Artillery training publications may be purchased direct from the Superintendent of Documents, Government Printing Office, Washington, D. C., or from the JOURNAL.

FM 4-10	Seacoast Artillery—Gunnery .....	\$ 25
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TM 4-205	Coast Artillery Ammunition .....	15
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The following training publications are Restricted, and therefore are not for sale, but must be requisitioned through channels, if desired.

FM 4-5	Seacoast Artillery; Organization, Training and Tactics.
FM 4-110	Antiaircraft Artillery; Gunnery, Fire Control and Position Finding.
TM 4-210	Coast Artillery Weapons and Matériel.
TM 4-250	Stereoscopic Range and Height Finding.

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# Are You Professionally LITERATE?

We make no claim that reading, or even memorizing, these books will qualify you as the present-day Clausewitz, but we are sure that every Coast Artillery officer needs at least some of the volumes listed on this page to round out his military education, and for reference.



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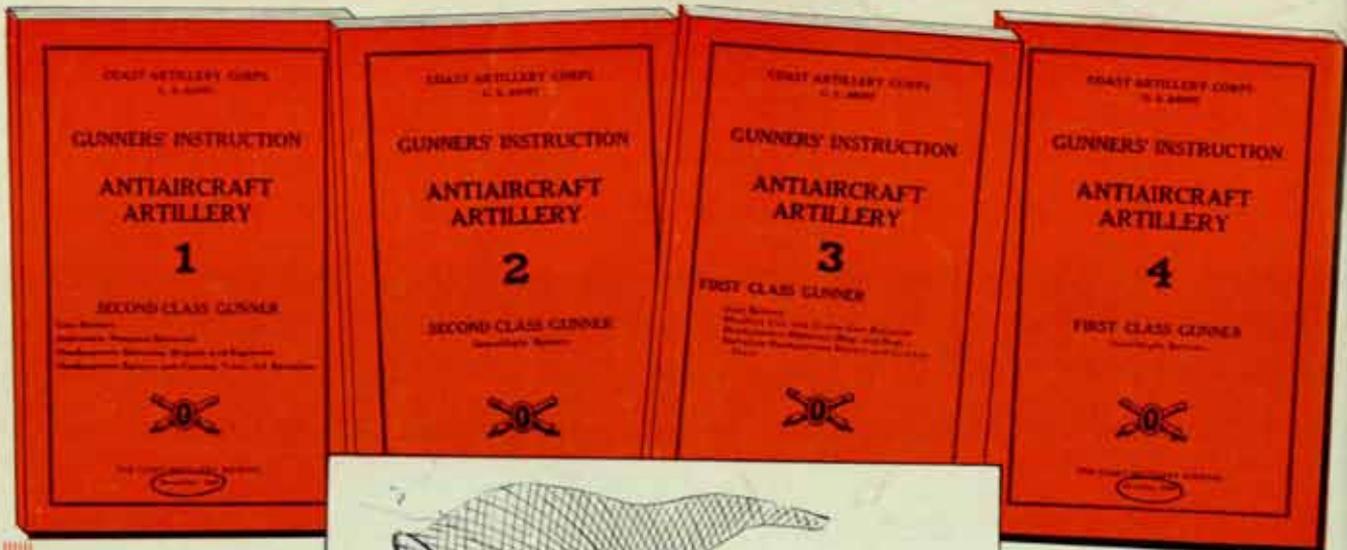
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