

COAST ARTILLERY JOURNAL

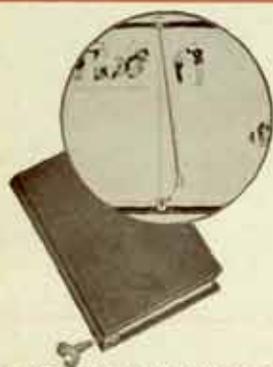


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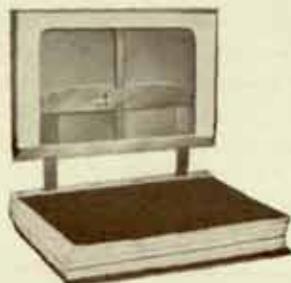


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THE WRONG END

By MAJOR LATHROP R. BULLENE Coast Artillery Corps

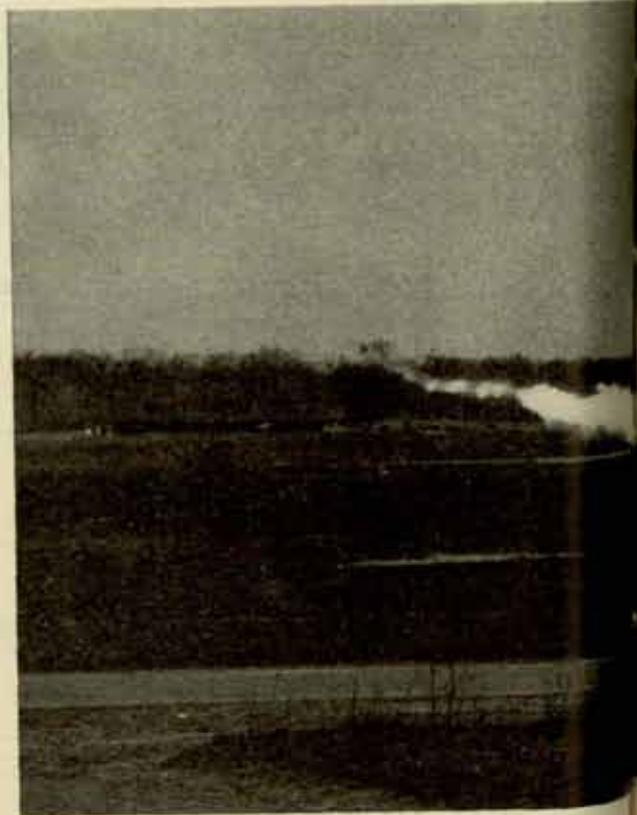
Every trajectory has two ends. This statement might be considered axiomatic, yet how many battery commanders, while calmly working out trial shot data in a comfortable C. P., ever give much thought to conditions on the other end of that near-parabola? Most of us think of counterbattery fire as a problem solely for our brethren of the rolling caissons.

This is true enough if we consider only the technique of firing, for the Coast Artilleryman will have little opportunity to conduct such problems. However, he might profitably devote some thought to what might happen to his battery if it ever got tangled up in the ladder of dispersion of some hostile 155-mm. guns which are doing their best to render him "hors de combat."

This is no idle threat, particularly for an antiaircraft artillery battery, either of guns, automatic weapons or searchlights. Such a battery, when engaged in forward area operations as army or army corps artillery, will occupy a position well within range of hostile counterbattery guns, but even in rear area defense it will have no diplomatic immunity to counterbattery assault. In this day of the blitzkrieg, the range of effective counterbattery operations is no longer limited to that of the medium and heavy artillery. Panzer divisions can and do strike unexpectedly far behind the first lines, while light bombardment aviation rains death and destruction from the skies. The battery commander, no matter where he is, may easily find himself on the wrong end of the trajectory.

Before considering the enemy potentialities, let us take a look at a typical AA gun battery of the present day. The battery commander, a short year ago, was probably wearing either gold bars or civilian clothes. How-

ever strong his interest in the military game, his opportunities for actual command in the field have been very limited. The same is even more true of his lieutenants. He is now somewhere in the field, and immediately responsible for thousands of dollars of Uncle Sam's money in the form of brand-new guns, fire control equipment and motor transportation, together with an amazing assortment of miscellaneous items, covering many pages of memorandum receipt. Furthermore, in his keeping are the lives and well-being of some 174 young men, most of them having been recently called from home and fireside by the mechanism of Selective Service and given basic training by the Replacement Center system. He has a definite mission, which can be briefly summed up as "They shall not pass (the critical zone)." In order to accomplish that mission, the



Major Bullene was born in Missouri, and served as a sergeant in the Missouri National Guard. In February, 1917, he became a member of the 9th Company, CAC, at Fort Monroe, and in June, 1918, he was appointed to the Military Academy. Major Bullene became a second lieutenant in the Coast Artillery Corps upon his graduation in 1920. He is a graduate of the Coast Artillery School's Basic Course as well as the Battery Officers' Course, and has also completed two courses at the Chemical Warfare School. He now commands the 2d Battalion, 67th Coast Artillery. His article in the May-June, 1939, JOURNAL, *With Or Without Mustard?*, attracted much favorable comment.

THE TRAJECTORY

battery must be ready at all times to open fire promptly and effectively on any appropriate target. Furthermore, he is very much "on his own," for the regimental and battalion commanders are miles away. When the lightning strikes it will be too late to start reading field manuals or calling up for instructions, so this is a good time for him to unlimber his brain cells and start thinking about that important function of command, the protection of his personnel and matériel. This problem will certainly be of vital interest to the trainees, and they will expect the battery commander to know all the answers.

Before attempting to suggest any answers, let us see if there is really any problem. We have none too many antiaircraft gun and automatic weapons batteries, and such a battery, with its expensive and complicated equipment, cannot be replaced by merely signing a requisition. Furthermore, its power and precision of fire are such as to constitute a serious threat to hostile aviation. The approved solution, obviously, is to neu-

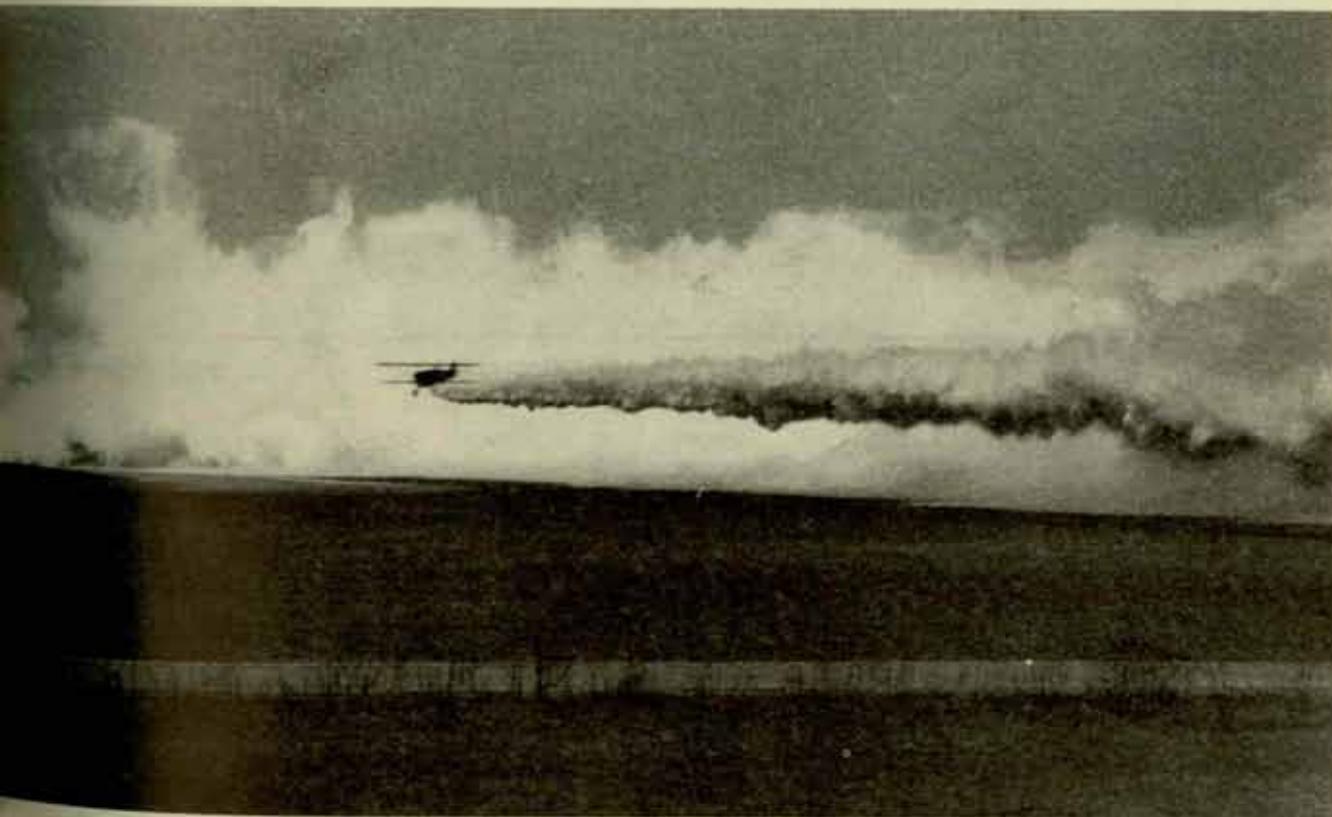
tralize or destroy whenever possible such juicy targets.

Granting the probability of counterbattery assault by some means, what are the most likely agents to be used? The munitions most commonly considered are high explosive shell, fragmentation or demolition bombs and raking machine gun fire. These will probably never be supplanted until we reach the science-fiction days of atomic bombs and disintegrator rays, but they may well be *supplemented* by that offspring of the chemical laboratory—gas.

HIGH EXPLOSIVE

There is no need to dwell on or even attempt to describe the shattering hell of high explosive dropped from above, whether by heavy artillery or bombardment aviation. One has only to see current newsreel or pictorial news magazine to appreciate that, for sheer destructiveness, there is no substitute for HE. Aircraft bombs and high explosive shell, which have demolished the finest permanent fortifications and razed whole sections of modern cities, would require few direct hits to ruin completely a mobile gun battery with its limited protection. The battery commander can glean some comfort, however, from the fact that his position is not

"Even a light haze will seriously impair precision . . ."



likely to be a target for the heavy bombers. First because his battery is naturally well camouflaged and dispersed, and second because of the mission of the bomber, which is to get through the anti-aircraft defenses and destroy some important target. He will probably not fritter away his striking power on wayside targets, hence any of the demolition bombs which do drop on the battery will likely be strays from one end of the ladder of dispersion.

MISCELLANEOUS MUNITIONS

Light bombardment airplanes, on the other hand, will have no scruples against attacking anti-aircraft batteries whenever located. Fragmentation bombs have proved to be terribly effective against simulated personnel targets, demolition bombs can wreak havoc on sensitive instruments, and machine gun bullets cover the beaten zone more or less thoroughly. Artillery shell, particularly in the larger calibers, are by no means gentle when they detonate. A little imagination on the part of the reader will fill in the details of the picture.

The last agent named above—gas—is more difficult to imagine, at least accurately, and will therefore be examined in greater detail.

CHEMICAL COUNTERBATTERY

The reader probably has his own ideas on this subject. He may believe that chemical warfare is as dead as the pterodactyl because neither clouds of phosgene nor pools of mustard have been seen in London's streets—to date. The Panzertruppen swept over France without benefit of lethal gas, hence it is easy to say "they ain't no sech animal." But students of military history can cite many examples of the fallacy of such an assumption. Fear of reprisals may have kept any of the belligerent nations from taking the first step, but the fact remains that gas caused many casualties during the last war, and we have no assurance that it won't be used again. For that matter, the incendiaries and screening smokes, which have been freely used during the present conflict, are forms of chemical warfare, and the difference between HC and HS is only the change of one letter! Certainly no battery commander is justified in closing his eyes and mind to the possibility of chemical attack.

The general subject of defense against chemical attack is covered thoroughly in that excellent handbook, Field Manual 21-40. The writer of this article has no intention of making an extract copy of this manual, but will attempt only to point out some of the applications of chemical agents to counterbattery assault. Casualty agents were first used during the World War I in the form of a cloud of chlorine gas released from portable cylinders installed in the German front-line trenches when the wind was favorable. This attack was far more successful than even the Germans themselves anticipated. Crude as it was, this vast cloud of chlorine almost enabled the Kaiser's army to break

through and reach the sea, for the Allied troops were totally unprepared. No later attacks were so successful, for even the most primitive forms of improvised gas mask gave some protection. The moral is obvious.

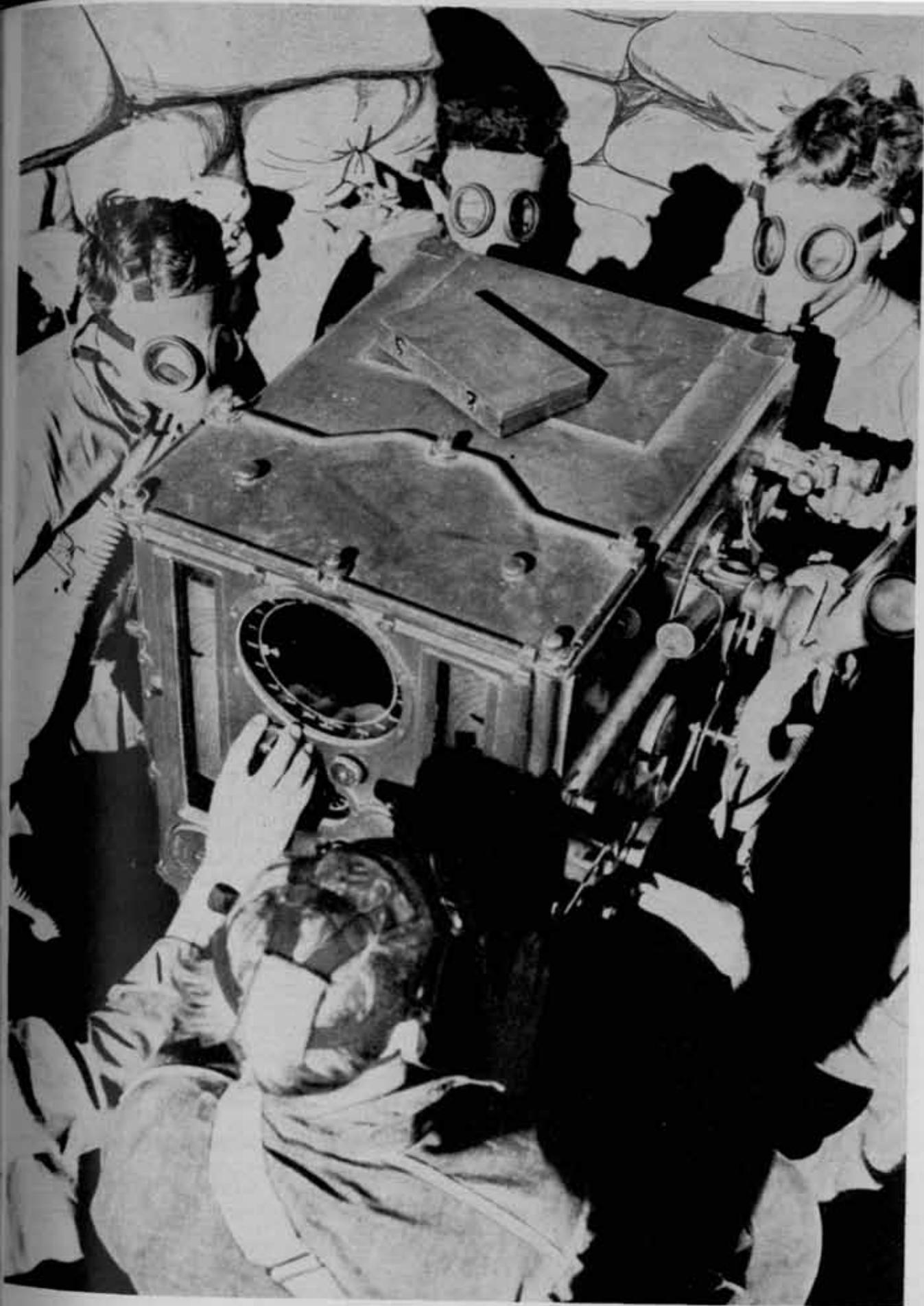
Portable cylinders have been greatly improved, and chlorine has been replaced by its more efficient offspring, phosgene, but the principles are still the same. Secrecy of preparation and favorable weather conditions are requisites, for surprise is most essential to the success of a gas cloud.

This form of attack is obviously best suited for use against large concentrations of troops, such as the bivouac area of a division, hence the commander of such a small unit as a single battery might dismiss it as irrelevant. The gas cloud, unfortunately, is no respecter of targets. Weather conditions being average or favorable, it will not float serenely off into the atmosphere, but will roll for an amazing distance along the surface of the ground, showing a special affinity for low places and an uncanny faculty for seeking out soldiers in dugouts or trenches. Since such a cloud can travel for several miles under favorable conditions, it might easily engulf an entire battery in the course of its stealthy progress. The service gas mask will give complete protection if it is in the proper place, but a mask on the face is worth a dozen in the storeroom.

The chemical mortar and the chemical projector (Livens) are used in like manner to attack troop concentrations by the use of a cloud of non-persistent casualty agent. The cloud is formed at the point of impact of the projectiles, but the effect is the same. Because of their limited range, neither of these weapons is suitable for direct assault on batteries, except possibly automatic weapons in forward areas, but the cloud has the same propensities for drifting with the wind as the one formed by portable cylinders, and is therefore equally dangerous for anyone in its way.

Still another possibility, probably given little consideration by the battery commander is the release of such a casualty agent, probably masked by smoke, from the fast-stepping vehicles of a mechanized force. The commander of a mechanized troop, knowing the horizontal fire possibilities of a gun or automatic weapons battery, might hesitate to make a direct attack. Instead, he could sweep around the battery, upwind and on a defiladed route, and release a cloud of mixed smoke and phosgene which would drift over the battery position. Such an attack, if successful, would accomplish the dual result of blinding the fire control instruments and of causing severe casualties on poorly trained or unwary cannoners. As a minor irritant, any unpainted metal surfaces which happened to be wet at the time would blossom out with a coat of bright red rust, much to the disgust of the next brass hat who inspected the battery.

Serious casualties can be avoided in all forms of attack by nonpersistent casualty agents if the state of training and gas discipline in the battery is high. A few points to bear in mind are: 1st, if the battery position



"Vision curtailed . . . breathing impeded . . . conversation limited . . ."

is on low ground, a lethal concentration of CG may linger for an hour or more after the actual cloud has passed; 2nd, for some time after the passage of the cloud the atmosphere may be so lightly contaminated that the odor of ensilage is scarcely discernible, yet this air, if breathed for any length of time, will produce casualties; 3rd, the characteristic odor of CG may be so covered by the acrid odor of a screening smoke that its presence will be unsuspected, particularly by men concentrating on matching pointers, tracking the target or throwing rounds into the breach. And "a little goes a long way."

The foregoing forms of chemical attack apply only incidentally to anti-aircraft batteries. Weapons which will normally be used for counterbattery work with malice aforethought are field artillery and light bombardment aviation. Possible chemical agents are non-persistent and persistent gases, incendiaries and screening smokes.

ARTILLERY FIRE

The use of high explosive shell in counterbattery fire has already been briefly discussed. The purpose here is to describe a few frills and furbelows that may be added by the judicious use of chemical agents.

Consider first the addition to the HE of a small percentage of persistent tear gas, such as CNS or CA. At first glance this may seem to be an anticlimax and a waste of fire power, but actually the harassing effect is very real. CNS, which is simply a solution of chloracetophenone, will cause nausea and vomiting as well as intense eye irritation, so that every man must wear his gas mask continuously, with resulting reduction of efficiency. Furthermore, its persistency is measured in hours rather than minutes. CNS won't put any of the cannoners permanently out of action, but its effects, like those of the skunk, will still be felt long after the bombardment is over.

We will pass lightly over the non-persistent lung irritants, such as phosgene. The number of guns necessary, to build up a lethal concentration within the two minutes necessary for surprise makes the use of such agents improbable. A moderately persistent lung irritant such as chlorpicrin is a possibility, but the writer is putting his money on the next horse.

Mustard is the one chemical agent that really has what it takes for counterbattery work. Although primarily a vesicant or blistering agent, it is also a peerless lacrimator and, as a lung irritant, is four times as toxic as phosgene. It can be used effectively either alone or in conjunction with HE. It will be worth our while to consider in some detail the possible results on the battery position of a successful mustard shoot.

Assume that the battery has been properly sited, camouflaged and given whatever cover is practicable, all according to the principles expounded in FM 4-105. No matter how good the camouflage the battery may be spotted by the enemy S2 with his stereo photographs.

The target is assigned, a battery opens fire and the fun begins.

As soon as the enemy battery commander gets his adjustment, things begin to get uncomfortable. A few of the projectiles may make direct hits on our matériel, but this is more or less incidental. Each shell contains enough of a bursting charge to shatter the shell case and perhaps blast a small crater in the ground. A portion of the mustard, which is a dark brown liquid in the shell, volatilizes or is atomized immediately, forming the deadly mustard vapor; some is spattered in liquid droplets on the shrubbery in which our guns are emplaced, and some will form pools of liquid on the ground, with resultant slow evaporation. It can be readily seen that this triple threat action produces a most dangerous condition for a long time over a considerable area, for naturally there is dispersion among the impacts. Each burst of a 75-mm. gun shell throws the drops of liquid over an area about fourteen yards in diameter; the 155-mm. shell about fifty yards. The liquid vaporizes slowly, so that the poisonous mustard vapor will be present in the area for days.

The following danger spots may be expected:

1. Direct contamination by splashes of liquid mustard on much of the matériel. The liquid is readily absorbed by paint on wood or metal, films of oil or grease on bright metal parts, wooden or fabrikoid ammunition containers, leather seat covers, canvas paulins and truck covers, burlap on camouflage nets, and by all food and water unless in hermetically sealed containers. There is little or no corrosive action on metal; the danger comes from the evaporation of the liquid, resulting in mustard gas.

2. Direct contamination of ground and shrubbery. This condition is highly dangerous to personnel. Welcome to the man who sits in a pool of mustard!

3. Indirect contamination by vapor. Pieces of equipment which have been untouched by the liquid will absorb vapor from the contaminated atmosphere, thereby forming additional danger spots.

It must be remembered that the vapor alone will penetrate ordinary clothing, causing severe blisters and sores on all parts of the body, the worst ones occurring where perspiration is greatest. In addition, there is always the possibility of inflammation of the eyes and irritation of the lungs. It is true that the physiological effects are delayed for several hours, but the effect on morale will be immediate.

In order to avoid severe personnel casualties, individual protection must be continuously applied, whether the battery must stay in the area or whether it picks up its equipment, complete with mustard, and moves to an alternate position. There can be no relaxing of vigilance until decontamination has been thoroughly completed.

Individual protection: This means, primarily, the continuous wearing, not only of the gas mask, but also of protective clothing, for mustard vapor attacks all



"Gas!"

parts of the body. Each man so equipped is hermetically sealed from head to foot, so that he can neither eat, drink nor smoke. His vision is curtailed, his breathing impeded, his conversation limited, and his perspiration cannot evaporate. From the start he feels completely isolated from his buddies, and as time passes he feels more and more uncomfortable, especially if the thermometer is soaring. Small wonder that he eventually reaches the point where he would rather take a chance on the gas than wear the cussed outfit another minute. What he actually *does* at this point depends on the thoroughness of the gas discipline of the battery. Even if this is such that there are no casualties, the impairment of efficiency can well be imagined.

Decontamination: Colonel Prentiss states* that "the principle of decontamination is simple." True enough, but the actual *operation* is slow, laborious and dangerous. Useful materials are earth, sand, water, bleaching powder, sodium sulfide and lots of grease, elbow, M-1. The battery commander is invited to study paragraph 25, FM 21-40, then to make a careful survey of his guns and fire control instruments and visualize the work of decontaminating this complex apparatus, with its many hard-to-reach nooks and crannies where old paint, grease and dirt make beautiful mustard traps. Then he might consider the effect on the stereo acuity of his highly trained specialist, first class, of mustard vapor released slowly from the rubber eye protector or the painted fabric cover of the height finder. Or, to change the locale slightly, he might listen with his mental ear to the profanity around the rolling kitchen when the cook finds the *wrong* kind of mustard on that choice piece of tenderloin. As a matter of fact, the contamination of food and water by mustard or Lewisite spray or vapor is a most serious problem, and has been thoroughly studied by the Chemical Warfare Service.

After thinking over the potentialities of attack by persistent chemical agents, the battery commander will certainly decide that "something ought to be done," and the best time to do it is before the assault materializes.

SCREENING SMOKES AND INCENDIARIES

Screening smokes and incendiaries can well be considered together, for where there is fire there is smoke, though not always vice versa.

Incendiaries, as the name indicates, are used to cause conflagration. There are several types, such as crude oil used in flame throwers, smokeless powders used as an igniter with Adamsite, and thermit. The latter, a mixture of finely divided aluminum and iron oxide, creates intense heat at the point of combustion, but does not scatter the ignition. Thermit bombs are at present writing causing considerable havoc in London and other English cities. The courageous defense of the Britons against this form of attack, consisting of "a watcher on every housetop," is exciting world-wide admiration. However, the highly localized action of thermit should prevent its effective use against artillery batteries. A few thermit bombs placed accurately on the ammunition dump would certainly cause some fireworks, but we will grant the battery commander enough intelligence to keep his ammunition well protected.

The use of screening smokes in warfare is by no means a "new wrinkle," but has been used at least since the Mongol horde swept over most of the civilized world. The only modern innovation is the manufacture of smoke by chemical agents. Formerly one built a fire and covered it with green boughs, nowadays he opens a can, rubs a match head, and the smoke pours out like the genie out of the bottle. The purpose is the same—obscuring power.

There are several effective smoke mixtures in use, but the two most likely to be encountered by the battery

*"Chemicals and Coast Defense," COAST ARTILLERY JOURNAL, July-August, 1939.

commander are sulfur trioxide (FS) in the form of chemical spray from airplanes, and white phosphorus (WP) in artillery shell or aerial bombs.

FS smoke has quite a marked corrosive action on metal, so much so that great care must be taken with its use in peace time. The purpose of its use against an anti-aircraft battery is not, however, to rust the guns but to make them temporarily ineffective by blinding the instruments. The wild swings seen in a blindfold "battle royal" in the ring is a good illustration of the effect sought for. Whether or not this result can be effectively accomplished is a moot question. The use of smoke to blind field artillery observation posts is standard practice in most map problems, but its use against anti-aircraft artillery is another matter, for the time and space factors are quite different. Many artillerymen believe that this problem cannot be solved except under very favorable conditions. If one insists on a complete coverage of the instruments by an impenetrable fog, this is probably true, but it should not be forgotten that even a fairly light haze will seriously impair the precision of the stereoscopic height finder.

White phosphorus, primarily a screening agent, has incendiary and casualty properties as well. Such a combination should make an excellent counterbattery agent for use by either artillery or light bombardment airplanes. It is a solid, so highly inflammable that W.P. shell must be filled under water. When one of these shells bursts, the solid particles immediately are thrown out in all directions with explosive violence. These flaming particles will not only readily ignite dry grass, shrubbery and wood, but they penetrate clothing and skin, continuing to burn while imbedded in human flesh. The effect on efficiency and morale can well be imagined.

ATTACK FROM THE AIR

Light bombardment aviation may be expected to make frequent and thorough assaults on anti-aircraft batteries that are seriously interfering with the missions of the heavy bombers. They will be employed mostly against batteries protecting vital installations in rear areas, beyond artillery range. In addition to the standard munitions mentioned above, certain chemical agents can be employed with great effect. Those most likely to be encountered are: first, mustard gas in the form of chemical spray or light bombs; second, phosgene or similar agents; third, smokes and incendiaries.

Mustard spray is used most effectively against troops in the open. Normally at least three planes are employed, and the area contaminated is so wide that scattering of personnel is of little value. As compared with artillery shell, the contamination is more widely dispersed, but less concentrated and, because of the fineness of the droplets, less persistent. This form of attack is particularly insidious when employed at night or at other times of poor visibility.

Non-persistent casualty agents, such as phosgene, can be dropped in medium sized bombs, but these

would undoubtedly be saved for large troop concentrations rather than such small and dispersed elements as batteries in position. If there is a troop concentration upwind and not too far away, there is always the possibility of the battery being covered by the gas cloud before it disperses. Although this would be accidental, it would be no less effective on that account.

Light mustard gas bombs can be dropped on or near the battery position by almost any plane that can go overhead, and not very many of them are necessary to set up an effective concentration. These bombs are most effective in wooded areas, so they find their best use against bivouac areas, truck parks, command posts, kitchens, etc.

Smokes and incendiaries to be anticipated are FS smoke sprayed by light bombardment airplanes and white phosphorus bombs. The former has no casualty effect, but is capable of blinding the battery quite thoroughly for a few minutes under favorable conditions. At critical times a few minutes may be vital.

White phosphorus bombs are similar in use and effect to WP artillery shell. No further discussion is necessary, except to remark that the bombs will normally be dropped in rearward areas, beyond artillery range.

PREVENTIVE MEASURES

Since we have painted the offensive picture quite thoroughly, it should not be amiss to consider for a few minutes the possibilities of doing something about it.

If the battery commander is ever so unfortunate as to be caught on the wrong end of the trajectory, he will want to be sure at least that his pants are in the position of propriety, so he will take whatever preventive measures possible. These can be classed as "before and after M-Day."

"BEFORE"

During the period of preparation for active operations, artillery training must include thorough instruction in self-protection of the battery against any form of counterbattery assault.

The groundwork will be laid during the twelve weeks replacement center training, whether conducted at an official replacement center, or, as in many cases, by the battery commander himself under supervision of the battalion and regimental commanders. During this period the trainees receive instruction in Individual Defense (including gas), AA Camouflage, Reconnaissance and Occupation of Positions, Defense Against Ground Forces, and Field Engineering.

After the "yearlings" have graduated from the twelve weeks prep school, the captain should have on his hands a full-fledged battery, the efficiency of which is his responsibility. At this point the organization is apt to go stale unless its training is carried on with intelligence, initiative and enthusiasm. Standing gun drills can become almost as monotonous as "By the number—gas!" Here is a golden opportunity for the develop-



Decontaminating squad at work on a "75."

ment of true leadership. The alert battery commander will think of many ways to introduce variety into his artillery drill; here are a few suggestions.

Gas masks should be worn habitually during the drill and gas alarms sounded at unexpected times while tracking a target. With a stop watch an officer can determine how much time elapses between "Gas!" and "On target!" Announce the elapsed time so as to introduce the competitive spirit. Tracking with an M4 director while wearing a service mask is difficult, but not impossible.

When the novelty of this has worn off, use a mild concentration of CN for your gas alarm. Have four or five men, equipped with CN grenades, in line at 20 yard interval about 150 yards upwind from the battery. Upon signal, have each man fire one grenade and throw it a few yards downwind. The resulting gas cloud may lachrymate a few sleepy cannoneers, but next time they will get into the masks more quickly. Tear gas should never be used in this manner unless all men are equipped with masks. CN is intended for *training*, not for practical jokes.

A smoke cloud demonstration is usually of interest to the men. This can be arranged in a similar manner to the tear gas exercise, substituting HC smoke pots for CN grenades. The exercise is more effective if the pots are wired for electrical discharge. Since the training allowance of smoke pots is small, exercises involving their use should be carefully planned. The smoke cloud should always be released while the battery is tracking a normal target, and every effort made to secure data on the effectiveness of the obscuration.

Smoke and lachrymatory gas can be used to attack the motor column on the road. This should never be attempted on highways where accidents might be caused, but only on little-traveled roads on a government reser-

vation, and then only with due precaution for safety.

"AFTER"

When and if the battery engages in active operations, every effort must be made to minimize the danger of aero-chemical attack. Battery positions and the routes thereto must always be selected with the thought in mind of protection against such attack. In most cases the requirements of field of fire, flash defilade, cover and concealment will be more or less mutually exclusive. There is no such thing as an ideal battery position; the best compromise must be chosen.

Officers and men must be thoroughly trained in tactical and technical protection. They should know how to recognize chemical agents and conditions favorable for chemical attack. The technique of decontamination must be learned by actual drudgery, not by reading a manual. All personnel should learn by personal experience the hardship of wearing gas masks and protective clothing continuously over long periods of time. Whenever the situation permits, gas-proof shelters should be provided, for the battery may have to stay in contaminated atmosphere for a long time.

Gas non-commissioned officers will have great value if properly trained. Two per battery is by no means enough for searchlights or automatic weapons, with their widely-dispersed sections and platoons.

To sum up, the battery commander must be constantly mindful of the fact that by no means the least of his many responsibilities is the protection of his men and guns against counterbattery assault, whatever form it takes. A battery which has been neutralized is a worthless element of the defense, and the captain of such a battery will be fortunate indeed if he has only his own conscience to remind him that "the battery commander is responsible."

....Streamlining The

Inauguration of the current emergency program has brought to the Army many and diverse problems. Not the least of these has been the finding of time to keep up with normal paper work. The piping days of peace gave battery and detachment, as well as regimental and higher unit commanders, plenty of time to sit at their desks and ponder regulations and necessary reports. The period of expansion and the emphasis on field training have made all office periods necessarily shorter. The War Department recognized this problem by creating personnel and machine record sections, by organizing station complements and Corps Area Service Commands. With the idea of continuing this simplification and coordination, it is well to examine certain related activities, for example our efficiency report for commissioned officers. In the name of efficiency there is presented herewith a streamlined, IQ-type, efficiency report, as nearly fool-proof as practicable. There is nothing essentially *wrong* with the present form; nor should any such assumption be made. There was nothing *wrong* with battery commanders doing their own personnel work. It is simply that, today, a tremendous amount of training and practical work is necessary, and the less time spent on paper work, even on such an essential document as the officers' efficiency report, the better. No changes have been made in the basic thought of the present form nor in the tenets of AR 600-185. The form suggested here can be accomplished by the officer making the report, using his fountain pen and a convenient field desk or table. It will present just as accurate a picture of the officer reported upon—as far as his normal duties are concerned—as the form now in use. It requires no abracadabra in the way of accompanying memoranda. It requires only common sense and observation.

Place Fort McGraw, Idaho
Date April 1, 1941

ARMY OF THE UNITED STATES
EFFICIENCY REPORT—COMMISSIONED OFFICER

(INSTRUCTIONS—Paragraphs 1, 2, 3, 4, to be typed by clerk. Remainder to be entered, legibly, in ink, in own hand, writing of officer rendering report. Consider these definitions, remembering that the officer is being rated against others of the same grade and, where possible, on similar duties: UNSATISFACTORY—Inefficient, incompetent; SATISFACTORY—passably efficient, the minimum standard; VERY SATISFACTORY—slightly above the minimum standard; EXCELLENT—Very efficient, only slightly below the maximum standard; SUPERIOR—Outstanding, exceptional, the maximum; UNKNOWN—to be used where reporting officer has had insufficient opportunity to observe officer reported upon. Abbreviated report may omit paragraphs ④, ⑤, ⑥, ⑦.)

1 OFFICER REPORTED UPON

Smith <small>(Last name)</small>	John <small>(First name)</small>	H. <small>(Initial)</small>	O-00000 <small>(Serial number)</small>
2d Lt. <small>(Grade)</small>	Coast Artillery Corps <small>(Arm or service to which commissioned)</small>	Battery A, 13th C.A. (RD) <small>(Organization to which assigned)</small>	
Officer in my battery <small>(Official status with respect to me)</small>			

2 PERIOD COVERED BY THIS REPORT 4 MONTHS from 12/1/40 to 3/31/41

3 STATIONS DURING THIS PERIOD Fort McGraw, Idaho

4 DUTIES HE PERFORMED

	Unsatisfactory	Satisfactory	Very satisfactory	Excellent	Superior	Unknown
Mess Officer			✓			
Assistant Battery Executive		✓				

5 THIS REPORT IS BASED ON (a) Intimate daily contact
(b) Occasional observation of his work
(c) Previous
(d) Indirect

④ IN MY OPINION, THIS OFFICER IS: (check expressions which apply, add any desired in blank spaces)

attractive	✓ reliable	indifferent	inefficient
alert	polite	✓ tactless	untrustworthy
✓ ambitious	cheerful	lazy	shrewd
practical	honest	lacks confidence	shrewy
efficient	quiet	unattractive	loud
resourceful	pleasant	visionary	conceited
restless	ordinary	indulgent	domineering
brilliant	well-meaning	apathetic	impertinent
loyal	kindly	plodding	self-assertive
dependable	average	moody	subversive
✓ industrious	mediocre	unattractive	over-bearing
tactful	retiring	methodical	respectful
reserved		✓ <i>Impertinent</i>	

The study of the rating of an officer is recognized as essential. It is not new. I have been told that it goes back to Washington and 1776. Following the defeat at Quebec, our first commanding general found that men would not enlist until they knew the names of the officers under whom they were to serve. Supplied by the Congress with commissions in blank, Washington was confronted with the necessity of selecting those to whom he would give the commissions. Accordingly, officers of their commands, and recommendations were called upon his field officers to submit reports on the

Efficiency Report

HE HAS EXHIBITED THE FOLLOWING QUALIFICATIONS AS INDICATED. I HAVE CONSIDERED HIM IN COMPARISON WITH OTHERS OF HIS GRADE AND INDICATED MY ESTIMATE BY MARKING X IN THE APPROPRIATE RECTANGLE.

	Unsatisfactory	Satisfactory	Very satisfactory	Excellent	Superior	Unknown
1. Physical activity (agility, ability to work rapidly)						
2. Physical endurance (capacity for prolonged exertion)						
3. Military bearing and neatness (dignity of demeanor; neat and smart appearance)						
4. Attention to duty (the trait of working thoroughly and conscientiously)						
5. Cooperation (acting jointly and effectively with another or others, military or civilian, to attain a designated objective)			✓			
6. Initiative (the trait of beginning needed work or taking appropriate action on his own responsibility in absence of orders)				✓		
7. Intelligence (the ability to understand readily new ideas or instructions)				✓		
8. Force (the faculty of carrying out with energy and resolution that which on examination is believed reasonable, right, or duty)				✓		
9. Judgment and common sense (the ability to think clearly and arrive at logical conclusions)			✓			
10. Leadership (capacity to direct, control, and influence others in definite lines of action or movement and still maintain high morale)			✓			

I know 15 officers of the same grade in this Assault regiment engaged in similar duties. On this list, I would rate the officer number 10 in my opinion, he is better than LT G. L. Dunst but not quite as good as LT J. R. Lombar. Considering the mark of 67 as passing (SATISFACTORY) and the mark of 100 as perfect, I would mark this officer 78.

During the period covered by this report, it was necessary to take disciplinary action against this officer for serious delinquency as follows:

None

I consider this officer ~~is not~~ qualified for the grade he now holds and believe his general rating should be ~~UNSATISFACTORY, VERY SATISFACTORY, EXCELLENT, SUPERIOR, UNKNOWN~~. If temporary advanced post becomes possible in his case, he is ~~is not~~ qualified to hold the grade of First Lieutenant. I consider him particularly qualified for duty as administrative duty without much contact with men.

REMARKS With further reasoning this officer's objectionable characteristics may disappear.

I certify that I am familiar with the provisions of AR 600-185 and that the statements contained above are, to the best of my knowledge and belief, true, impartial, and in accordance with those regulations.

(Signed) Bude Sumner
 (Printed) Qude Sumner
 (Grade & Org.) Captain, 12th Coast Artillery (HD)
 (Commanding) Battery A, 12th Coast Artillery (HD)
 (Place) Fort McGraw, Idaho
 (Date) April 1, 1941 (Initials) none

(NOTE: In the event of entries under paragraph 9, complete details will be attached. In the event of unfavorable entries under paragraphs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 or 11, this report will be indorsed by regimental or separate unit commander to the officer concerned for comment before forwarding. If no entries are unfavorable (below SATISFACTORY) report will be forwarded. In the case of officers below field grade, directly by regimental or separate unit commanders to Army or Corps Area headquarters. Reports on officers of field grade will be forwarded through channels.)

December 31, 1938. The current form, WD AGO No. 67, was approved, after several years of study, on January 1, 1936.

The purpose of efficiency reports is well covered in AR 600-185:

"(1) To report the duties performed during a definite period, together with the manner of their performance.

"(2) To furnish accurate information as to the degree an individual possesses certain specified qualifications considered essential in the military profession.

"(3) To make of record such special qualifications of use in the military service as an individual may possess, and the extent to which qualified."

The value of efficiency reports, to the service as well as to the officer concerned, is shown in the same paragraph:

"Efficiency reports form the basis of an individual's classification both as to his efficiency in his own arm or service and his qualifications for special duties. It is therefore imperative that reporting officers exercise the greatest care in making out these reports, and that they express accurately and impartially their estimate of the individual reported upon and the manner in which he has performed the duties assigned him."

There is nothing in the suggested form to change anything quoted above. The duties performed, the manner of their performance, information in regard to special qualifications, and a general word-picture of the individual are presented. It is not suggested that reporting officers exercise any less care than the paragraph quoted above requires. It is

retention and promotion. These were the first "efficiency reports."

Our present system has been in use for more than forty years. Naturally, it has been revised many times as conditions have warranted. The current AR 600-185 is dated November 19, 1937, amended by C I, dated

By CAPTAIN ROBERT J. WOOD, Coast Artillery Corps

believed, however, that the form is so presented as to enable them to arrive more quickly at their conclusions and more readily record them.

I suggest no change in paragraph 5, AR 600-185, which prescribes when reports shall be rendered. A full report is required on every officer, (1) on June 30th of each year, (2) when there is a break in the officer reported upon-officer reporting relationship after same has existed for more than three months and (3) in the case of Thomason Act officers. An abbreviated report is required, or a full report *may* be submitted, for periods less than three months and more than one month. In the form here suggested, paragraphs 1, 2, 3, 4, 5, 9, 11, and 12 only are required for an abbreviated report.

There are three other important paragraphs in AR 600-185 which all officers should note and which are not changed by the form suggested. One is paragraph 8, which requires a report containing unfavorable entries to be referred to the officer reported upon for remark. A second is paragraph 10, which indicates what type of entries are expected under the record of disciplinary action. The third is paragraph 15, which requires the reporting officer to forward his report within ten days of the close of the period covered by the report.

An examination of the accompanying form will show that most of the changes proposed involve re-arrangement and simplification. I suggest blocks or squares as more adaptable to handwriting than lines. I have added "arm of service in which commissioned" and "organization to which assigned" so that same may be a matter of record. Many of our reserve officers are on duty in branches other than those in which they were originally commissioned. Furthermore, recent instructions from the War Department limit the designation of branch under an officer's signature to that with which he is currently serving.

Paragraphs 2, 3, and 4 are carried over from paragraphs B, C and E on Form 67. Paragraph D, Form 67, has been included in the instructions at the top of the suggested form. Paragraph 5 contains, in different form the matter previously printed at the top of paragraph E. As suggested, it pertains to the entire report, rather than to paragraph E alone. I have eliminated "Academic ratings" as being somewhat beside the point during the present expansion period. If it is desired to submit re-

ports based on special school courses, they can be so stamped.

Paragraph 6 is, of course, new and somewhat revolutionary. Here an effort has been made to list all of the adjectives, good, bad, and indifferent, which normally appear as entries under paragraphs I, J, N and P on Form 67. It is believed that the suggesting of these words to the reporting officer will enable him to select those which apply and strike out those which do not, in the least practicable time. Blank spaces are provided in the event the reporting officer desires to make use of some expression which has not been included.

Paragraph 7 is paragraph H from Form 67, retained in its entirety as being the heart of the report. It is already "streamlined" sufficiently to warrant its inclusion without change.

Paragraph 8 is new and also somewhat revolutionary. Here an effort has been made to assist the reporting officer in coming to a definite rating for the officer upon whom he is reporting. By comparing this officer with others known to him and, if practicable, of whom the War Department has records, he is able to furnish to higher authority an invaluable comparison.

Paragraph 9 covers paragraph L and M on Form 67; paragraph 10 covers old G and R, with the addition of the clause regarding temporary rank; paragraph 11 is the same as old P; paragraph 12 is a re-worded version of paragraph S.

I believe no changes in the present system of indorsing are necessary. Paragraph 15 (b) AR 600-185 is clear as to the remarks which should be made. An officer through whom efficiency reports are forwarded usually has the time to write out such an indorsement, and the clerical help to perform the necessary typing.

The suggestions which have been put forth are naturally, the opinions of the writer. They are advanced, less in a critical vein, than with the view of making the efficiency report form easier to understand and more readily accomplished. If they have done no more than to cause the reader to examine Form 67, this piece would be worthwhile. After all, it should be remembered that, although advice from, and the opinions of others may be sought, the rendering of efficiency reports is a highly important function of command, the responsibility for which cannot be delegated.



FIRE CONTROL

Non-Ballistic

By Lieutenant Joe W. Leedom, Jr., Coast Artillery Corps

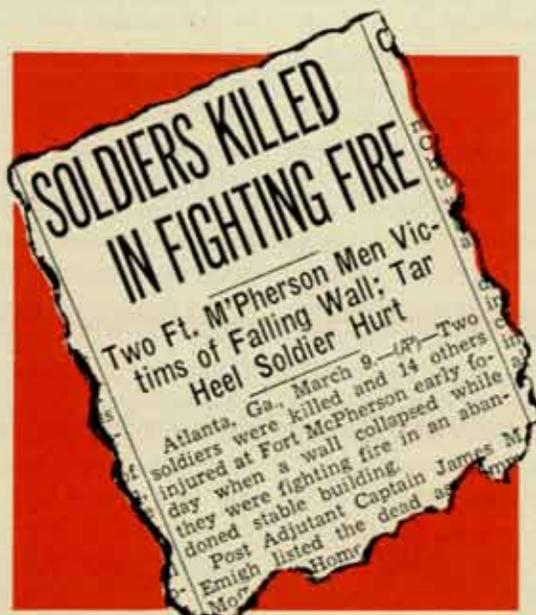
"Fire is a good servant but a poor master," so goes a Chinese proverb. The wise old head who uttered these words was himself a master, in this case, of understatement. Fire can easily be much more than just a "poor" master, it can be a monstrous one. Fire, to give him personality, is whimsical, careless, unafraid, malicious, but obedient . . . if properly controlled.

We have a problem in these days of rapid expansion that has always been with us to some extent, but whose solution is as much more difficult now as a problem in calculus is harder than one in arithmetic. It is the old fire-prevention and fire-cure question, and incidentally, be it trite or not, an ounce of the prevention is worth a pound of the cure. Prior to the present emergency most barracks were of brick or stone, at worst there were but few wood buildings housing troops. All this has changed; our Army has expanded, the National Guard has been inducted into federal service, new units have been activated. To meet the increased demand for housing row upon row of frame barracks stand where shortly before there were parade grounds or prairie. It has become necessary to think of decreasing fire hazards in these wooden cantonments;

we can no longer talk about the problems, we have actually to get into them and do something—the stakes are too high to disregard. Picture the possibilities. See that small flame nibbling at a support in the lower squadroom, racing to the upper floor, spreading to recreation buildings, battery offices, supply rooms, other barracks. Stop treating the matter passively, do something! The first general order in fire prevention is to "Police." Set a high standard and maintain it. Not the superficial get-by-inspection-only kind of policing but honest to goodness cleaning up.

Start a campaign and make it a permanent one. In this problem, let Red be all dirt and trash and inflammable materials. Do not allow trash to accumulate anywhere, don't just rearrange it into neat piles and let it go at that. For your first policing job your regiment (or battalion) can designate one spot, and one only, where easily burnable materials may be taken and fired. The place chosen must be accessible to all the batteries of the organization, close enough to them so that police details, kitchen helpers, supply and maintenance men will use the facility, yet far enough away so that it will not constitute a hazard. A guard should be placed over it during the whole time it burns, and the residue should be cleaned up often. Unburnable trash must, of course, be hauled to your post dumping area. The collection system will necessarily vary for every post and camp. Sometimes post headquarters furnishes collecting details, on some posts nothing may be burned except at a designated dumping area (if this is not so at your station, the firing point mentioned above could become a permanent one)—you must fit your policing scheme into your regulations. Above all have a scheme. In constructing the new housing

units only the very most necessary buildings, the most necessary shelves and partitions have been built. As a result, organizations using this housing have often put up small frame buildings to house equipment that might otherwise go uncovered, have put in their own shelving and partitioning. When your organization builds these shacks, make certain they are kept a safe distance from your other buildings. More fires start in equipment, tool, and paint storage structures than in any other place. Be certain they are well constructed. Don't overlook such buildings in your



preventive measures. Any lumber a unit is saving for projects such as these must be given special attention. Protect it from the weather by a tarpaulin, under no circumstances pile it under large buildings to serve as a focus of flame and heat should a fire start. And keep the lumber out of the small space between buildings for there it might be a link in a chain, carrying flames from one structure to another.

Try to store gasoline, paint, and other combustibles in a building for such alone, apart from all other constructions. If this is impossible . . . it shouldn't be . . . put such materials in a part of the supply room where there is nothing else that burns readily. Put them on the floor, opposite an entrance, to facilitate fighting a fire in them. Treat combustibles for what they are: the most dangerous, most likely source of fire.

Oily rags and waste should be destroyed after use; if for any reason they are saved, keep them in an open container out of doors or in a well ventilated room away from any other fire source. All storage rooms must be ventilated; it is in sealed rooms that spontaneous combustion takes place . . . sealed rooms that are opened and oxygen admitted.

Let us now take a look at the weakest link in our prevention chain. Come into the furnace room where fire is serving so well, but where it is most likely to get its first chance at playing master. The heating plants installed in the new units are good, very good for quickly built cantonments. Like every other thing made, they are not perfect. Here as everywhere else cleanliness is paramount. Clean the walls, clean the heater ducts, clean the smoke flues. A fire-insurance investigator can tell you that certain dusts are inflammable, but which ones or under which set of conditions is practically unknown. The only safe thing to do, then, is to take no chances with any dust. It can be, it has been, that the dust in hot-air ducts has caught fire from a single spark, and has carried fire through the ducts of the system to all of the rooms served by them. Then fire may burst out in all parts of a building at once, the sort of fire a fighter is practically powerless against. Fire can use soot on walls, dust in cracks, fine particles of almost anything anywhere as food and conveyance to materials more to its liking. So clean in the flues, around them, behind them, the walls and ceilings surrounding them throughout all the buildings of your cantonment and check off another flank that cannot be turned. Don't permit your furnace tenders to keep wooden chairs or boxes, anything inflammable, near the furnaces. And tell your junior officers when they are finished with huddling about the stove in the battery office to move their chairs away from it. Apparently there exists such a thing as heat transfer which warms buildings and sets fire to overheated inflammables.

An idea of how your heating plant operates will be your best guide in eliminating its hazards. Simply, the unit works like this: the furnace proper heats air collected in a hood or bonnet above the furnace. A motor-

fan blower withdraws the heated air from the hood and forces it through the heater ducts into the using rooms. Cold air, returning through ducts from the using rooms to the blower, completes the cycle.

There are two thermostatic controls provided, one in a room of the building which controls the furnace draft, another in the bonnet which controls the fan. As soon as a building is occupied the draft-control electrical hook-up should be checked. Have the Constructing Quartermaster, if possible, open the thermostat (it is set at about 70 degrees and sealed), set it at a temperature lower than the temperature in the room at the time and check the furnace draft to see that it closes or remains closed. In the natural haste of installing the units, the motor controlling the action of the draft door has sometimes been hooked in reverse with the thermostat . . . and a call from the thermostat for less heat opened the draft, resulting in more heat and dangerously high temperatures. If you are unable to get a changed setting put on the thermostat, the same result can be obtained by checking to see if the draft closes during the heat of the day and opens at night. There are a few cases on record, also an imperfection of installation, where the motor of the blower unit was not securely anchored. When the bonnet thermostat called for the blower to withdraw heat from the hood the motor slipped loose, the fan belt slackened, the fan did not operate. The bonnet temperature became so intense the thermostat melted and even the furnace room walls caught fire. When you find something of this sort, and be sure you make a check accurate enough to find imperfections, call the Utilities Quartermaster; under no circumstances try to get by. An additional precaution and a good preventive measure is to clean, at regular intervals of a month or so, the filters through which air is drawn into the blower. They become clogged with dust and furnish a great deal of resistance to the passage of air.

About your fire extinguishers: consult regulations as to the number required and see where they should be placed. When you put the number you are supposed to have right where they are supposed to be, use a little common sense. Make them easily available. Put them near an entryway; you can imagine the tremendous usefulness of a fire extinguisher far across a flame-filled room from someone trying to attack the fire from outside. Put them to the left of the entrances. In squad rooms place them near the exterior doors but near to the bunks of the men, too. Turn the stamped instruction side outward. You'll be surprised at the number of persons working or passing by, just living near the extinguishers, who will read the directions—some of it will stick and perhaps be valuable information to one of those men some day. It is a good idea to explain the operation to the men at least once. Then detail one man and select an alternate to have charge of and to operate each extinguisher during fires and fire drills.

Actually training your officers and men in fire pro-

vention is your best offensive weapon. Mass training, lectures on preventive measures and fire drills are invaluable. Show your command your prevention plan, show them the tremendous values in life and property that are at stake. Have fire drills at least once a month, stress orderliness and not speed in clearing the buildings. Just as we simulate an enemy in some of our maneuvers, pretend a fire in one of your buildings and give your drill a little more reality.

Important in attacking fires (isn't it in any fight?) is a plan. Decide right now what your plan is to be and carry it out in your drills. Your local fire marshal can give you the best information on what to do until he and his men arrive to take over a fire fight. Have a talk with him on prevention and cure. Here are a couple of suggestions: when the occupants of a burning building and those surrounding it are all out don't let the men mill around. Hold a predetermined number to do what they can to stop the fire and protect the surrounding buildings. March the rest out of the area; keep them out until the excitement is past. The number you leave on the scene must be held to a minimum, nothing so irks a fireman as too much help in watching a fire burn. Have each guard detail that marches on instructed in the location of fire hydrants. Let the sentries not on post serve as guides to the arriving smoke-eaters and as barriers to incidental traffic in and out the area. Help your men cooperate; furnish them with tin cans to serve as ash stands in the squadrooms; let them know the end you are trying to accomplish and they will accomplish it for you.

Just as we have a general education of our personnel, certain members need some specialization. First: Have one officer in each battery responsible for the care, cleaning, and operation of the heating plants and the training of the firemen operating them. The several officers selected from the entire organization should ar-

range a meeting with the Utilities Quartermaster in order to find out how to use the heating plants properly, how to fire them, what settings to maintain on the thermostats.

The firemen themselves should be responsible men; they have responsible jobs. Give them sole authority to enter the furnace rooms. See that they keep the rooms clean. Make a rule that the fires will never be banked above the lower level of the furnace door, that ashes will never accumulate enough to touch the grate. Another specialist is the noncommissioned officer in charge of the squadroom; in a drill or during actual fire he must rouse all occupants and be the last to leave the squadroom. Give the sergeant and his detail, the group sticking with the fire, a little extra instruction in fire-fighting, a little material to fight with. Gunny sacks and axes are the most necessary and most available tools.

We have said a lot about preventing fires. We probably seem pretty picayunish about this matter, but it pays to be. Some of what we have said sounds little and insignificant but the minor, the petty faults that exist are the ones that are going to make of a tiny spark a wisp of smoke, then a raging inferno. As a case at point let us read from the report of a fire insurance adjuster: "The fire undoubtedly started as a result of a beam of sunlight being focused on a newspaper lying upon a chair in a ground-floor room. There had been a rain of short duration consisting of very large drops shortly before the fire was discovered. One of the large drops, hitting and remaining on the window pane formed a prism through which a beam of intense heat was cast upon the paper. . . ." In battling so cruel a potential master as fire there is no detail too slight to merit attention. We have said a lot about preventing fires. But we are not a bit closer to the solution of the problem. The solution lies not even partly in the saying; entirely in the doing.



He who goes forward into battle *may* die; he who retreats *will* die.
ZULU PROVERB.



Down Mobile

Admiral David Glasgow Farragut



By Lieutenant Colonel A. C. M. Azoy, Coast Artillery Corps

Although he was a sailor—the very first full admiral our Navy ever had—David Glasgow Farragut's finest exploit was carried out with the Army as his ally. Strange as it may seem in this day of highly individualized services, it is nevertheless true that in the hot August dawn when Farragut led his fleet through the gauntlet of Mobile's forts and submarine mines and warships, there were soldiers fighting for him on shore, and soldier-built ironclads following in his wake.

Indeed, it was the Army that had long been setting the stage for the marine drama that has made August 5, 1864, forever glorious in naval annals. As long before as August of '63 a Union general named Grant had begged to be allowed to lead his men south against the great Confederate port of Mobile; instead, a vacillating War Department sent him against Cairo and then over to help Rosecrans extricate himself from the cul-de-sac into which his defeat by Bragg at Chickamauga had forced him. But early in 1864 Grant was given the triple-starred authority of a lieutenant general over all of Lincoln's men; the president called for 500,000 volunteers (and didn't get them); the Bluecoats tangled with the Grayjackets at Wilderness Tavern, Spotsylvania, New Hope Church, Kenesaw Mountain, Cold Harbor; suddenly the Mississippi was in Federal hands from Cairo to the Gulf. Things were looking up. Federal Army headquarters found opportunity to attend to various items hitherto neglected, and at once set to work on two which were of paramount importance to the Union cause. Troops were sent into Texas to intimidate certain Frenchmen in Mexico who were offering to help the Lone Star State free itself from Yankee dominion, and finally, it was determined to make the long-delayed move to blockade

important southern ports, the obvious chief of which was Mobile.

To accomplish this there was formed the Western Gulf Blockading Squadron and to head it was called Rear Admiral Farragut who already had experience in fighting on the Mississippi, and entertained a low regard for the Confederate navy. It was his theory that the Gray ships could be generally disregarded as a serious menace to Union plans, and the most effective way to blockade the harbor of Mobile was to get in the harbor itself and thus make it impossible for anyone else to enter or leave it. To put this plan into execution the Yankee admiral swung the prow of his flagship *Hartford* out of snowbound New York early in January and after stops en route at Pensacola and New Orleans, came breezing onto his new station near the end of the month.

To say that his advent was enthusiastically greeted is to put it mildly. Although the United States was as yet anything but a naval power, here was a seadog with a salty background worthy of the fabled mossbacks of foreign armadas. Born in Tennessee, young David Farragut had shipped for a sailor at the tender age of nine and a half, when he was granted a midshipman's ticket by Admiral Porter on the *Essex*; two years later he had discovered and quelled a mutiny, and sailed around Cape Horn. For such a man there could be only one reply when, at the outbreak of the Civil War, Farragut's friends warned him he would have to leave his native Southland if he persisted in his ill-advised loyalty to his government. "Very well," replied David Glasgow. "Then I'll leave!" And he did. Here he was back again, his graying hair marking only slightly his sixty-three years, his eye as keen as ever and his courage

as undaunted as when he had calmly stood up the Mississippi River in 1862 and tossed more than one thousand shells into New Orleans to take that proud city.

High-ranker though he was, Farragut always asked of himself as much as he did of his subordinates, so no one thought it unusual when the admiral took a small boat and two of his aides and made his own personal reconnaissance, rather than relying on staff reports. He found plenty to interest him.

The defenses of Mobile Bay, that stretched thirty miles inland from the Gulf of Mexico to the city of Mobile itself, were concentrated at the bay's entrance between Mobile Point on the east and Dauphin Island on the west. The actual distance separating these two spots was about three miles, but a long shoal extending from Dauphin Island to the east and south reduced the navigable waters to a narrow channel that hugged the shore of Mobile point.

Fort Gaines on Dauphin Island and Fort Morgan on the Point guarded this access to the inner harbor; Gaines was too far away for her guns to be much more than a mental liability to hostile approaches, but Morgan presented a very formidable obstacle to any attacker. The fort's position directly commanding the channel was exceptionally advantageous and this natural defensive strength was further enhanced by a water battery that offered its gunners almost point blank range at passing ships. In casemates and barbets Morgan was armed with more than sixty-five smooth bore and rifled guns of varying calibres; in the waters that swirled by her frowning emplacements were the equally deadly weapons that were just beginning to play their continuing rôle of increasing terror in marine warfare—submarine mines, or "floating torpedoes."

These newly-invented engines of destruction were of two kinds. One type consisted of an ordinary barrel or keg tarred inside and out, and fitted with flanges under each end to assure freedom from tumbling. This was filled with black powder and had a row of five sensitive contact primers attached to the top. The other variety was made of tin in the form of a truncated cone, the greatest diameter being uppermost in the water. This was divided into an air chamber to give buoyancy, and a powder chamber. On top was a cast iron cap, so arranged that a blow by any passing vessel would knock the cap off; the weight of its fall pulled a trigger that actuated a primer and this in turn detonated the explosive charge. The mine defenses of Mobile Bay consisted of forty-six barrel torpedoes and 134 of the tin cone type; all were anchored so that they floated with their tops almost level with the water.

Stretching from the point of Dauphin Island across the sandy shoal towards Morgan a line of piles had been driven, denying passage even to shallow draft vessels at high tide. Where this line of piles ended and the channel proper began was anchored one end of a string of torpedoes and this stretched out into the channel

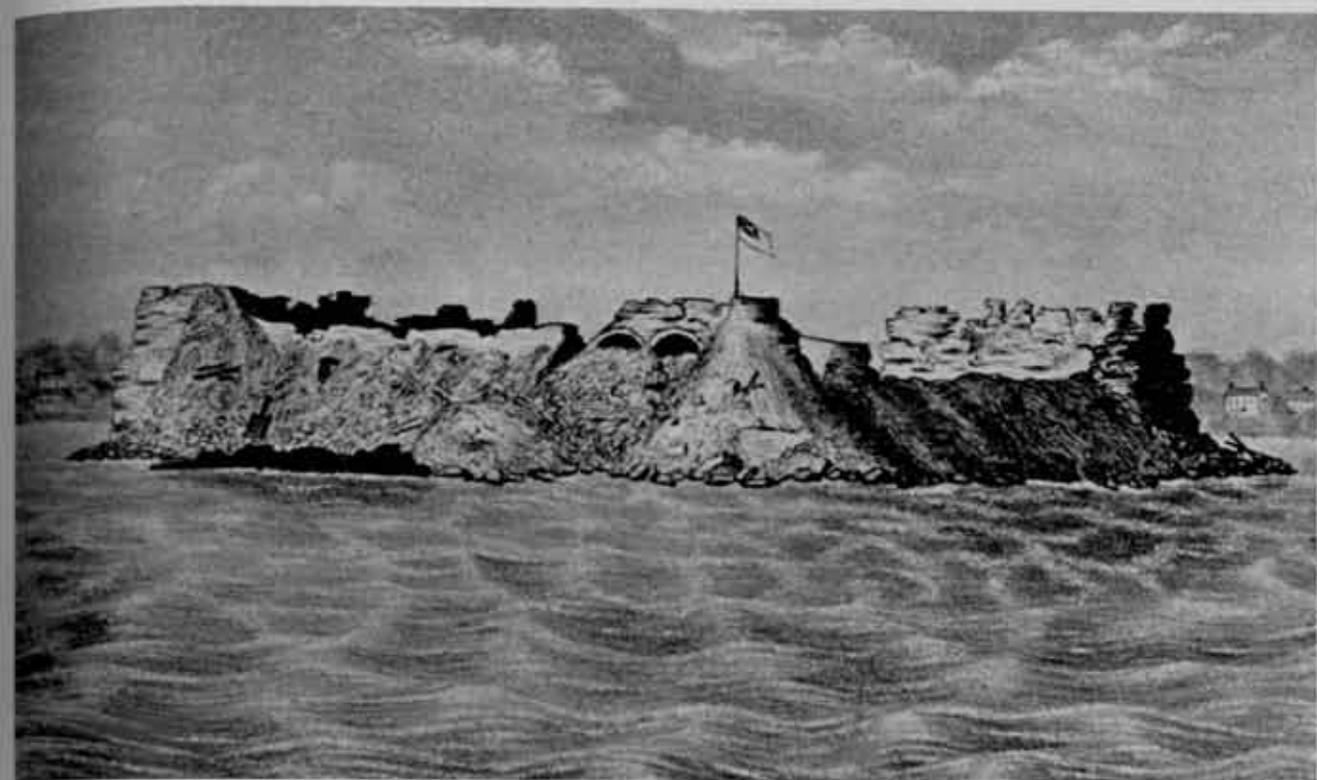
more than two hundred yards. A red buoy marked the further terminal of this mined area, and between it and Fort Morgan's water battery there were scarcely more than a hundred yards of open water. But it was enough for the Yankee admiral, and Farragut rowed back to the *Hartford* to give his entire attention to planning his attack which would be made in supreme disregard of Morgan's guns and torpedoes alike.

February saw the first action when some of the Union fleet tried out their guns against one of the forts on Mississippi Sound. It proved nothing and Farragut bided his time until he could work out a scheme of co-operative attack with the Army, and be reinforced by a flotilla of the new-fangled ironclads designed and built by the Quartermaster Corps especially for river fighting. Winter waned, spring's buds blossomed and the enervating heat of summer shut down over the Southland. In July there came first, assurances that General Gordon Granger's troops were on their way to help their blue comrades in arms and second, not merely rumors of ironclads but the ironclads themselves. One of the ungainly monsters, the *Manhattan*, arrived on July 20th; two more, the *Winnebago* and *Chickasaw* puffed up to the fleet anchorage the next day bringing word that still a fourth, the *Tecumseh* would be along shortly.

These ancestors of our modern "battlewagons" were aptly likened to forts on rafts. In outward design they consisted simply of a long, low deck on which were placed one or more turrets, each mounting two 11- or 15-inch guns. These were capable of being run in and out of their turrets and of being moved in elevation, but traversing was accomplished by turning the entire turret. The pilot house was perched concentrically atop one of the turrets, and deck, turrets and pilot house were completely armored. Motive power was supplied by four screws, one placed at each corner of the shallow hull; the average speed of the ironclads was never more than seven knots.

Since July 12 Farragut's orders for the attack had been ready and waiting; now all that remained to be done was to put them into execution. The advance past Fort Morgan would be made in two columns, the ironclads to the starboard nearest the fort, and the wooden ships to port. Each frigate was to be lashed to one of the smaller river steamers in the fleet, the steamers on the left; this close-coupled formation would be retained until the main passage had been forced. Ships would be stripped of all superfluous spars and rigging. Splinter nets would be rigged to starboard; steersmen protected with piles of sails and hammocks. The decks over the engine rooms were piled with sandbags and chains. All the small boats on the starboard sides of the ships must be transferred to the port sides and all the movable guns on the port side would be brought over to bear on the fort from the starboard side. Shell, shrapnel and grape were to be used freely. The United States ensign would be flown at every masthead on each ship.

To accomplish the mission Farragut had set for him-



Fort Morgan after the bombardment

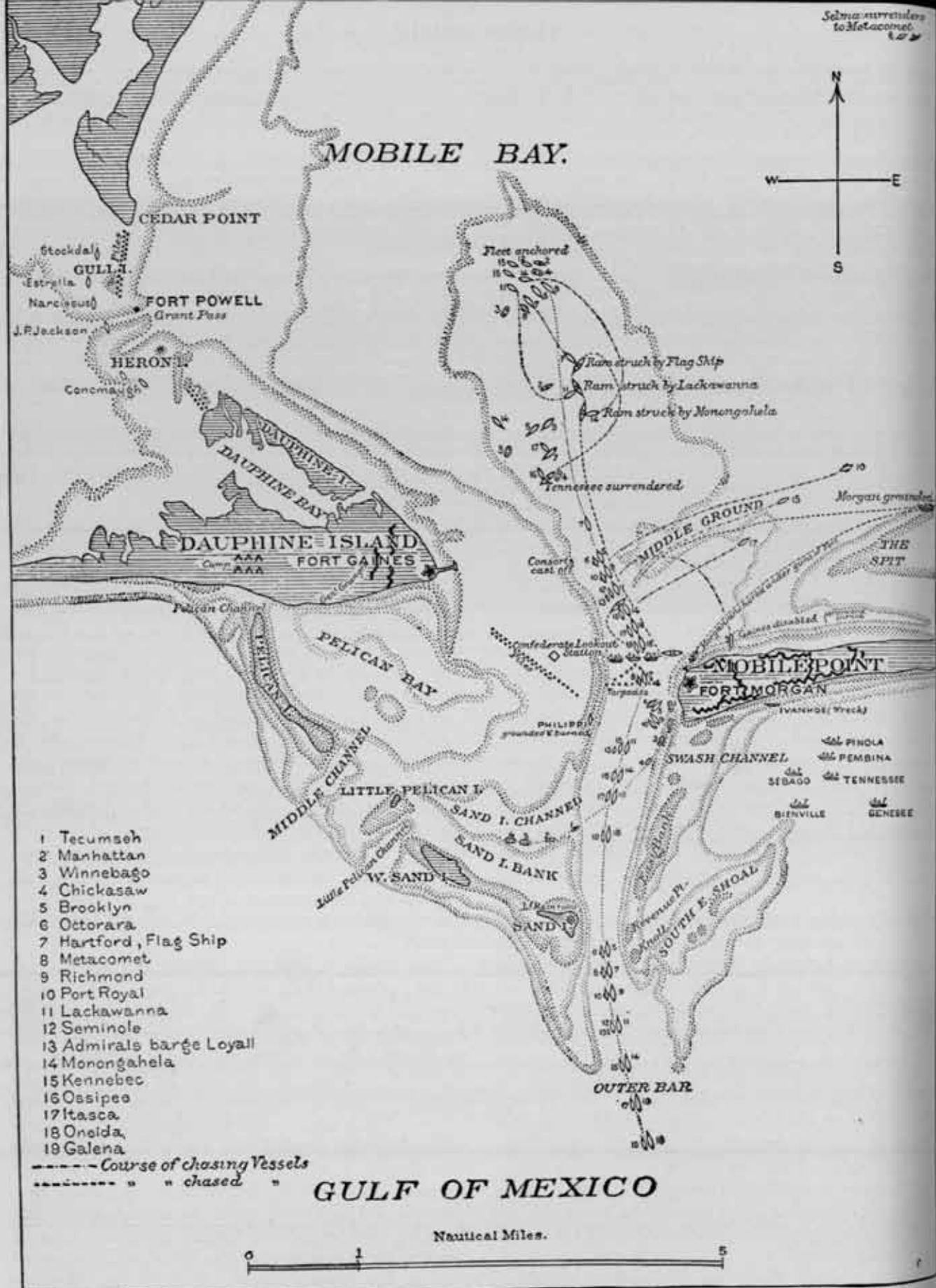
self he needs must wait for the combination of a flood tide and a west wind; this would insure disabled ships being carried into the harbor if other locomotion were denied them, and would cause the smoke from their broadsides to blow directly in the eyes of the Morgan gunners. Such a happy combination occurred on August 4th, but the expedition could not start because of the tardy return of some of the ships that had gone down to Pensacola for supplies. All of that hot summer day Farragut paced the quarterdeck, scanning the southern horizon for the missing units of his fleet. Word came that Granger's men had landed on Dauphin Island and were proceeding against Fort Gaines, and then, just as eight bells were echoing across the twilight water, faint smudges of smoke back on the Gulf showed that the anxiously awaited vessels were on their way and the admiral gave orders to be ready for the morrow.

Rain came with the darkness, but by midnight the downpour had changed to a close, humid calm. Tossing restlessly on his bunk, Farragut gave up all attempts at testing against the activities the new day might bring and at three o'clock sent his orderly for a weather report. The Marine returned with word that a fresh westerly breeze was springing up. The admiral swung off his mattress with a grunt of satisfaction. "Good! Then we'll go in this morning!"

Bosuns whistled shrilly for all hands to rouse and move their hammocks; galley fires roared under forced draught for hurried breakfasts; one by one the paddle wheels of the river boats thrashed the sluggish water into foam as they slid forward to be lashed to their

larger consorts. By five-thirty, messages received by the flagship announced that everything was in order for the morning's program. Still sipping his breakfast tea Admiral Farragut turned to Fleet Captain Drayton. "Well, Drayton," said he, "we might as well get under way." Drayton nodded and stepped out on the deck. Signals flashed; there was an echoing roar and rattle of anchor chains snaking up from the muddy bottom of the roadstead. In little more than a minute the Yankee flotilla was in motion, just as the rising sun slowly threw its beams across the ramparts of Fort Morgan to pace the Confederate banner crawling to the top of the garrison's flagstaff.

The column of ironclads, nearest Morgan, was led by the *Tecumseh*, followed by the *Manhattan*, *Winnebago* and *Chickasaw*. To their left steamed in order the wooden *Brooklyn*, *Hartford*, *Richmond*, *Lackawanna*, *Monongahela*, *Ossipee* and *Oneida*, shepherding in the lee of their port sides the smaller *Octorara*, *Metacomet*, *Port Royal*, *Seminole*, *Kennebec*, *Hasca* and *Galena*. The better to survey his flotilla and its movements, Farragut stepped into the ratlines of the port main rigging, a few feet above the bulwarks; Freeman, a trusted pilot, was in the fighting top above him. Drayton and the staff, with Signal Quartermaster Knowles, stood on the deck beneath him, with Captain Jouett of the *Metacomet* on the latter's wheelhouse almost at the admiral's level. At 6:55 the *Brooklyn* crossed the bar just below Fort Morgan and Farragut eyed his leading ship anxiously. Now was the time before the Johnny Rebs could get in the first shot—twin flames flared across the waves from the *Brooklyn's*



CEDAR POINT
 GULF I.
 Stockdale
 Estrella
 Narcissus
 J.R. Jackson
 FORT POWELL
 Grant Pass
 HERON I.
 Concomaniga

DAUPHINE I.
 DAUPHINE BAY
 DAUPHINE ISLAND
 Camp AAA
 FORT GAINES
 Pelican Channel

PELICAN BAY
 PELICAN I.
 MIDDLE CHANNEL
 LITTLE PELICAN I.
 SAND I. CHANNEL
 SAND I. BANK
 W. SAND I.
 SAND I.
 PHILIPPI grounded & burned
 Confederate Lookout Station
 Consorts cast off

- 1 Tecumseh
- 2 Manhattan
- 3 Winnebago
- 4 Chickasaw
- 5 Brooklyn
- 6 Octorara
- 7 Hartford, Flag Ship
- 8 Metacomet
- 9 Richmond
- 10 Port Royal
- 11 Lackawanna
- 12 Seminole
- 13 Admirals barge Loyall
- 14 Monongahela
- 15 Kennebec
- 16 Ossipee
- 17 Itasca
- 18 Onondaga
- 19 Galena

--- Course of chasing Vessels
 - - - - - " " chased "

GULF OF MEXICO

Nautical Miles.



The *Tecumseh*, the leading monitor, moved from the position under Fort Morgan, to the left toward the right of the line marked "Torpedoes" where she was blown up. The distance traversed by the *Metacomet*, after casting off from the *Hartford* and until she came up with the *Selma*, is estimated by Admiral Jouett at nine miles. The time elapsed, as noted in the various reports, sustains this estimate. Owing to the limited size of the page, the map fails to show this distance, but it indicates the direction of the course of the gunboats. The capture of the *Selma*, as well as the grounding of the *Morgan*, occurred some distance to the northeast of the edge of the map.

forward battery as her bow was swallowed in smoke. The admiral bobbed his head gleefully as if he were ducking the detonations that came roaring back to him; the *Brooklyn* knew her business and had forced the fight. Now what would the fort do?

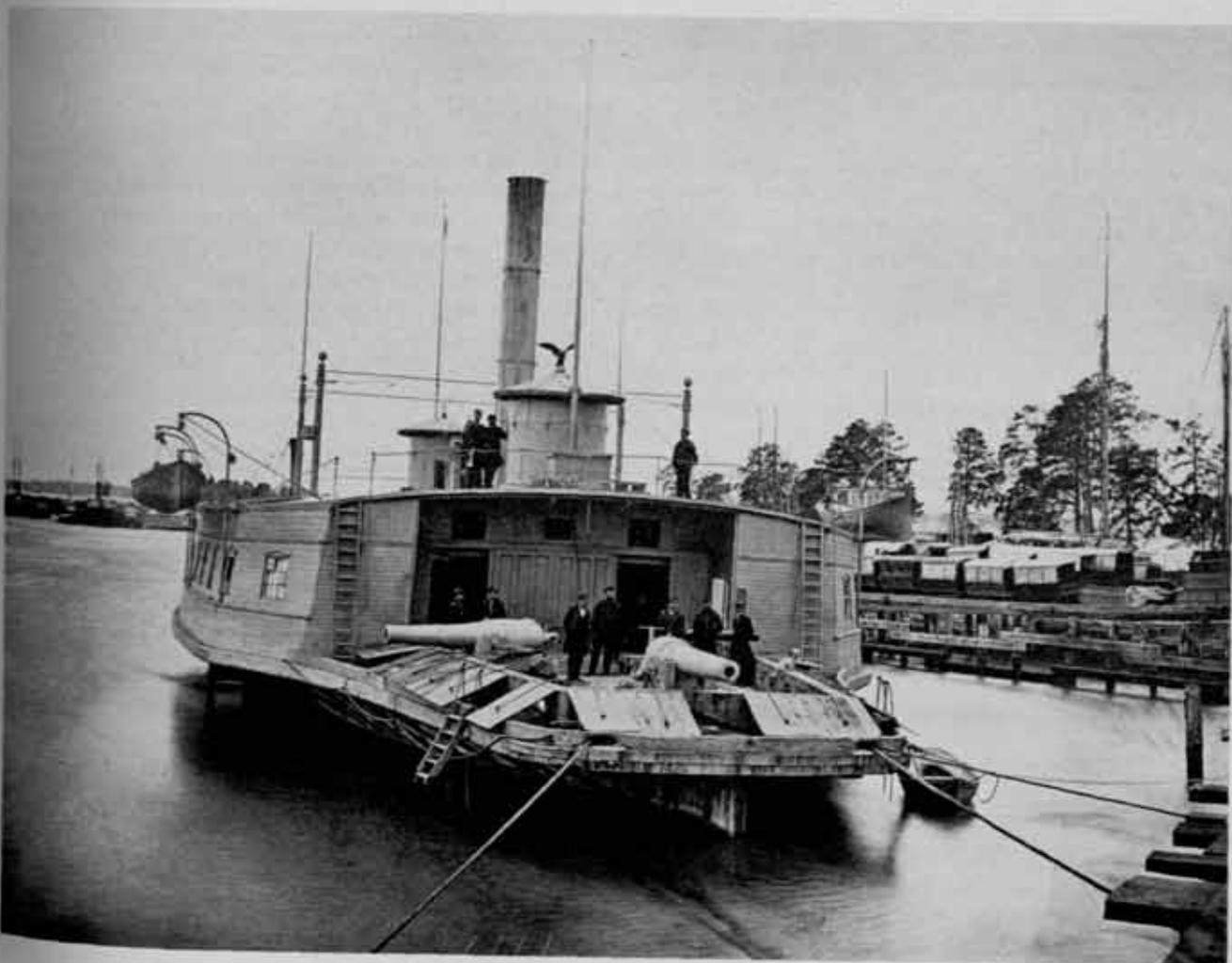
For twenty-five long minutes the fort did nothing as the Yankee armada swept slowly into range. Then a single gun boomed out from the water battery, and simultaneously the fleet of Confederate gunboats that had been waiting under the protection of the fort's walls slid into open water, forming line ahead from east to west across the channel, inside and beyond the torpedo line. One after the other they opened a raking fire on the Union ships; battery by battery Morgan's armament came to life, and the bottleneck passage between the fort and the mined area became choked with rolling clouds of white smoke, through which Farragut's fleet pushed on at a pace so slow it seemed as if the double column must be drifting.

Holding tenaciously to her course while the balls from the land guns bounced off her iron skin, the *Tennessee* singled out the Confederate ram *Tennessee* for special attention, as she was the most powerful unit in the entire Gray navy. The other ships were small paddlewheel steamers, unarmored except around their

boilers but the *Tennessee* was a far different proposition. Two hundred feet long, forty-eight feet in beam with a draft of fourteen feet, she represented the South's ultimate bid for sea supremacy.

Her armament of six guns—two 7½-inch and four 6-inch rifles, throwing ninety and 110 pound shot—was housed in a casemate some eighty feet in length, situated equidistantly from bow and stern. This casemate had sloping sides and was sheathed in protective layers of yellow pine, oak and iron to a depth of thirty inches; the gun ports were closed by sliding shutters of iron, five inches thick. The *Tennessee's* deck was also sheathed in iron, and although she was incapable of speedy maneuvering she must have presented the ideal of invulnerability to her designers and builders, to say nothing of her foes. There was just one flaw in her planning; by some queer oversight her steering chains were carried above deck from her stern to the wheel within the casemate and were thus completely exposed to enemy fire, an incredible error of design for which she would pay dearly before this day of battle was done.

Seven-thirty, and the ships were getting their broadsides to bear on Morgan. As fire runs down a fuse, the gun ports of the passing vessels break into successive



Converted ferry, used as a gunboat



Crew of a Federal monitor

fountains of flame that leap and lose themselves in the smoke that shrouds everything and dulls the answering flashes from the Confederate ramparts.

Captain Craven of the *Tecumseh* and his pilot strain their eyes through the slits of the conning tower for a glimpse of the *Tennessee*. Finally they see her, lying off to the westward of the column the *Tecumseh* is leading. Craven frowns; the Gray ram is on the far side of the red buoy which the Union skipper knows marks the eastern extremity of the torpedo line. To get to her antagonist the *Tecumseh* will have to swing almost ninety degrees in the narrow channel between the buoy and the fort; is there room enough for the maneuver? Craven shakes his head at the pilot. "It is impossible that the admiral means us to go inside that buoy; I cannot turn my ship. Ram the *Tennessee* from here!"

The pilot nods and spins his wheel. Slowly the iron shod nose of the *Tecumseh* swings around to the left of the buoy and heads straight for the *Tennessee*, slowly she gathers momentum for the charge with which she is to crash and perhaps sink the Confederate. Slowly she reaches and passes over the line of ominous black barrels that bobble and slip silently beneath her keel. Suddenly the ironclad's stern is raised high on a column of roaring white foam; it settles momentarily and is flung up on another column, and then another. The broken water falls back on the broken boat, ca-

reening in the maelstrom she has wrought. The *Tecumseh's* stern rises high once more. A few figures leap from her sloping deck, but not many; there are not many of her crew left alive. Up in the pilot house the pilot and captain collide as they start together for the door that leads to the turret and perhaps to safety. Craven draws back and smilingly motions his subordinate forward. "After you, pilot," he says. The pilot jumps, but there is nothing after him. Even as he hits the water he feels the rush of the *Tecumseh* sliding down through the warm waves; when he shakes his wet hair out of his eyes and looks about him there is nothing of his ship to be seen except a few bits of wreckage to which some half-dozen survivors are clinging. Ensign Niels of the *Octorara* sees their plight and puts out in a small boat to their aid. He is under constant fire, but coolly sets up the Stars and Stripes in the stern sheets and proceeds to haul in ten of the *Tecumseh's* company, bringing them unharmed back with him. It is a deed of glorious bravery, but passes unnoticed at the moment; the Union fleet, suddenly bereft of one of its most important members, is running into fresh difficulty.

Because of the thickening smoke that lessens visibility, Farragut has climbed higher in the rigging until he is nearly up to the cross-trees; Quartermaster Knowles follows to lash him fast. Farragut protests. "Never mind; I am all right!" Knowles pays no at-

ention as he passes a line around the admiral's body, and the admiral is too busy with his battle to argue further.

There is trouble of some sort ahead, where the *Brooklyn* and her consort *Octorara* have unaccountably lost headway. They stop entirely; they are backing! The *Hartford* and *Metacomet* give way to starboard as they bear down on the two leaders; astern come the *Richmond* and *Port Royal*, and then the rest of the dual column. A bad traffic jam is in the making directly before the guns of the combined Gray forces and the Grays make the most of it. Salvo after salvo rips into the leading ships; their foreworks become shambles of splintered oak and riven iron and torn bodies. Farragut fumes from his perch. "What's wrong with the *Brooklyn*?" he shouts to his pilot. "What's the matter with her anyway? There must be plenty of water there!"

"Plenty and to spare, sir!"

The admiral calls down to Knowles. "Hail the *Brooklyn* and find out what is the trouble with her!" The signal quartermaster runs forwards and is back in a moment at the admiral's feet. "Sir," he reports, "she says there are torpedoes there!"

Farragut snorts. "Damn the torpedoes! Four Bells!" He motions to his staff captain. "Captain Drayton, go ahead!" And to the captain of the *Metacomet*, "Jouett, full speed!"

The two ships surge forward past the still-hesitant *Brooklyn*, and as they pass the fatal red buoy the semi-submerged mines roll raspingly along their hulls. White-faced, the crews stand to quarters as they literally heat death knocking at their doors. By great good luck the first torpedoes fail to explode; surely they can't escape them all. But they do. Possibly because of faulty construction or, more probably, to salt water corrosion of their metal primers, not a mine is detonated.

Behind the *Hartford* there is a sudden increase in the intensity of the firing. Anxious to catch up with her leader the *Brooklyn's* blind plunge forward into the smoke-fogged fairway only results in running her bows on to a shoal facing the fort. The *Richmond* coming fast in her wake backs hurriedly which has the unplanned but fortunate effect of bringing her broadside to bear closely on Morgan's water battery. Her starboard guns speak in one mighty chorus and the battery is blasted out of action. While the *Brooklyn* struggles free, her sister ships echo the *Richmond* as they pass the fort and Morgan becomes momentarily silent. But when the larger vessels have gone by, the fort opens with renewed vigor on the small gunboats, notably the *Oneida*, last in line. She gets a 7-inch shell in one boiler killing all the black gang; another explodes in her cabin, jamming her steering apparatus and disabling two guns. But her little consort *Galena* pulls her along, and she staggers on to where the *Hartford* is waiting for the rest of the fleet to come up.

The *Hartford* is not permitted to remain idle long. Three Confederate gunboats ahead and to starboard subject her to a galling fire as they retreat slowly towards Mobile. The Union flagship can reply only with her forward guns but the discipline of her green crew never wavers as their dead and dying pile up in the debris of the fore-castle deck. Then out of the powder mist materializes the *Tennessee*. Since the battle began she has waited her chance to get the *Hartford* where she wanted her; now she has it, and she starts vengefully forward to realize her captain's ambition of sinking the Federal admiral.

The seamanship of Farragut is equal to the occasion. Straining at the *Hartford's* big mahogany wheel are Able Seamen MacFarland, Wood and Jasin; they are veterans of every engagement in which the *Hartford*



Union soldiers removing powder from Confederate torpedoes

has participated, and know every trick of which their ship is capable. As the ram nears, Farragut speaks quickly to his helmsmen and the enemy slides harmlessly by. In raging frustration, the *Tennessee* lets fly with two guns at point blank range—and misses! As the rest of the column glides on she hits the *Brooklyn*, but has no luck against the *Richmond* and *Lackawanna*; coming into range in their turn, the *Monongahela* and *Kennebec* reverse the usual order of things by ramming the ram! Bouncing back from the impact of the latter ship, the *Tennessee* slides in under the protection of Fort Morgan for a breathing spell as Farragut four miles further up the bay, casts loose the *Metacomet* to chase the Rebel gunboats and anchors to wait out a driving rainstorm that is sweeping furiously across the water.

All hands were piped to breakfast and the admiral was sought out by Drayton on the quarterdeck. "What has been done has been well done, sir," he said, "but it all counts for nothing so long as the *Tennessee* is there under the fort's batteries."

Farragut nodded. "I know it, and as soon as the crew have had their breakfasts I am going for her!"

That time came at eight-thirty, when the *Tennessee* was sighted bearing straight for the *Hartford*. Cutting her cable, the flagship signaled the monitors to destroy the ram, and herself prepared for what seemed destined to be the decisive action of her career.

First to engage the Confederate was the *Monongahela*, who swung around and struck the *Tennessee* amidships. It was a glancing blow and the ram was able to fire two shots into the *Monongahela*, killing an officer and two men; the *Monongahela* replied with a broadside at less than thirty feet and did not score a single hit.

The *Lackawanna* had better luck as she came foaming up to smash her ironclad nose squarely into the ram's port quarter. As the vessels fell apart the Union ship slammed a solid shot into one of the *Tennessee's* turret shutters with enough force to jam it permanently and enough concussion to stun the turret crew and kill one of them. Indeed, so shattering was the force of impact within the turret that the remains of the man who was killed—he was leaning against the shutter when the shot struck—had to be gathered into a bucket.

Now it is the *Hartford's* turn and Farragut clambers into the port mizzen rigging, followed by the faithful Knowles with rope in hand. Bearing down on the *Tennessee* the flagship strikes her adversary on her port bow and the two vessels scrape by each other. In keeping with his original orders most of Farragut's guns are on his starboard side, but there still remain seven 11-inch rifles in the port batteries and these hurl their heaviest charges at the ram without any visible effect on her armored casemate and hull. So close are the opposing ships that those on the *Hartford* can hear the primers snapping on the *Tennessee's* guns as her graycoat crew strive to fire a salvo. Imperfect preparation makes

their efforts all but vain; finally one gun roars and there is a flurry of wood and blood on the flagship.

The *Hartford* swings off into the path of the *Lackawanna*, still groggy after her impact with the ram. Farragut, now returned to the poop deck, shouts a warning; Drayton senses the danger of the situation at the same instant and races for the wheel, bellowing a change of course. But it is too late. With a shuddering crash the fellow-fighters come together, the already broken prow of the *Lackawanna* tearing a great rent in the side of the flagship almost to the waterline. For a moment it looks as if the *Hartford* is to sink and there are shouts of "Save the admiral! Get the admiral off the ship!" But the admiral, who knows sailor talk as well as any foremast hand, pungently expresses his resolve that he is going to stay on the *Hartford* and the *Hartford* is going to stay on top of the water, and personally sees to it that his ideas are properly carried out.

The fight is almost over. The Confederate gunboats have withdrawn their ineffectual presence from the scene, and all the Union vessels have passed by Morgan. True, many of the frigates are almost out of action but there still remain the three ironclads, and these converge on the *Tennessee* gallantly conducting a solo opposition to the Union advance.

The *Manhattan* has only one gun left in service; the *Winnebago's* turret has jammed so that her cannon can be aimed only by turning the entire ship. Nevertheless they joyfully give their support to the unscathed *Chickasaw*, and bear in on the ram, firing as they come.

From fifty yards to forty, from forty to thirty, to twenty, to ten, to five, they range up to the *Tennessee* with a continuous cannonade, sheer off, and come back again. The *Tennessee* tries to answer back but one by one the shutters become jammed at every gun port. The top of her funnel is sliced off and smoke pours into the casemate; the airtight box becomes an inferno of blistering heat and suffocating gas. Word comes from the pilot house that the captain is a casualty. The second in command takes his place and finds that the ship will not answer her helm; the exposed rudder chains have been shot away. Yawing helplessly, the *Tennessee* is completely surrounded by the Union ironclads and the reinforcing frigates which have slowly gotten into position. Once more in the rigging, Farragut sees the Stars and Bars come down from the ram's staff and sends a boat for her wounded commander.

It is ten o'clock. In two hours and a half much more than Union victory has been achieved, for this fight has forever sealed the doom of wooden ships, even though manned by iron men; it has proved the advantages of power over sail; it has given to the world the germ of an idea for submarine defense that will become a major consideration in wars to come. And by the same token it has given to a nation a watchword that, if properly listened to, still has the message of patriotic portent for the weak in heart in national emergencies:

"Damn the torpedoes! Go ahead!"

Philippine National Defense

By Lieutenant Colonel Robert M. Carswell, Coast Artillery Corps

National defense was one of the first considerations to receive the attention of the President of the Commonwealth of the Philippines. In March, 1935, before his inauguration as President, Mr. Quezon discussed with the President of the United States the problems of national defense that would confront the new Commonwealth when formed, and requested the detail of General Douglas MacArthur as head of a military mission to advise the newly formed Commonwealth Government.

An act of Congress made possible the detail of General MacArthur and a selected group of officers. The General and his staff arrived in Manila to attend the Commonwealth inaugural ceremonies on November 15, 1935. The military commission faced a huge task in organizing, training, and equipping a new army. Many difficulties had to be overcome. There were but few trained officers and enlisted men to form a nucleus for the new force.

A Council of National Defense was created to advise the President. This council consists of the President, the Vice President, the head of each executive department, the Chief of Staff of the Philippine Army, six other members appointed by the President, and a permanent secretary who is an officer detailed from the Philippine Army.

The Islands were divided into ten military districts, corresponding somewhat to our corps areas. Mobilization centers have also been established in municipalities, townships and municipal districts according to their respective populations and the percentage of such population assigned to units of the army reserve.

The Philippine Constabulary—a semi-military organization—was incorporated into the Philippine Army. On June 23, 1938, it was reorganized into a National Police Force and was placed under the control of the Department of the Interior. All officers and enlisted men of the Constabulary are members of the Regular Force, Philippine Army, detailed to Constabulary duty.

The Department of National Defense was created, effective May 31, 1939. A Secretary of National Defense is at the head of this department of the government. This department is charged with the duty of supervising the national defense program of the country.

The active head of the Philippine Army is the Chief of Staff. He has a Central General Staff to assist him and there is a General Staff with troops. The Special Staff consists of the Adjutant General Service, the Judge Advocate Service, the Quartermaster Service, the Medical Service, the Ordnance Service and the Chaplains Service.

The Army is divided into a Regular Force and a Reserve Force. The Regular Force consists of the officers commissioned in that force and of enlisted men procured by voluntary enlistment. Its strength is based on the necessity of supplying officers and enlisted men for the Constabulary, instructors for cadre training, and the personnel required for overhead in administration and for the various services.

Officers for the regular army are, as a rule, except in the Medical, Judge Advocates and Chaplains Services, procured from graduates of the Philippine Military Academy, although the law provides for the appointment of graduates of ROTC units of colleges and universities if the graduates of the Military Academy are insufficient in number. Enlisted men of proper age with more than one year's service in the Philippine Army also may be appointed. All officers are appointed initially as Third Lieutenants except officers of the Medical, Judge Advocates and Chaplains Services, who are appointed in the grade of First Lieutenant.

All officers of the Regular Force take precedence over officers of like grade in the Reserve Force.

The Reserve Force consists, in general, of infantry divisions located in areas as prescribed by the President of the Philippines, and of such additional separate regiments, battalions and companies and similar units as he may prescribe, as well as reserve units of the off-shore patrol and all reserve personnel not assigned to any of the above units.

Reserve officers are procured from graduates of the ROTC units of the various colleges and universities, and trainees and enlisted men of the Regular Force who have received special training. Noncommissioned officers are procured from graduates of the ROTC units who fail to secure a commission upon graduation from college or university and from selected trainees who have completed an additional special course of instruction in the school for specialists and noncommissioned officers.

The Reserve Force is divided into the following classifications:



Soldier Material.



Soldiers.

- (1) Trainees: those between the ages of 21 and 22 selected to receive trainee instruction.
- (2) First Reserve: those between the ages of 22 and 31 inclusive. Personnel of this group is subject to 10 days' military training each year.
- (3) Second Reserve: those between the ages of 32 and 41 inclusive. These reservists are subject to 5 days' military training each year.
- (4) Third Reserve: those between the ages of 42 and 51 inclusive. These reservists are subject to not less than 7 days' military training every third year.

Perhaps the best way to portray the system of military training in the Philippines is to describe the manner in which three fictitious characters, Juan, Jose and Felipe, Filipino boys, receive military training in the various ways open to and required of them.

These three young boys start their preparatory military training at the time they enroll as students in the first grade in primary school at the age of six or seven years. During the first four years of their primary school course they receive two periods of instruction per week of twenty minutes each in such subjects as: Citizenship Training, Courtesy, Safety Education, Group

Marching and Mass Singing, and Correct Posture in Sitting, Walking, Standing and Marching, all of which tend to make these boys better and healthier citizens. Upon attaining the age of ten they are officially designated as Junior Cadets. In the 5th, 6th and 7th grades the periods of instruction are increased to forty minutes. The training in Citizenship, Courtesy, Safety Education and Group Marching is continued and Free-Hand Gymnastics and Movements of the School of the Soldier, Squad and Platoon are added. As Junior Cadets these boys wear no uniforms, drill with wooden rifles, and are instructed by qualified male teachers.

At this point Felipe is forced by the poverty of his parents to discontinue his education. Having completed their education in the primary and intermediate school grades and their instruction as Junior Cadets, Juan and Jose now enter high or vocational school, become High School Cadets, and receive further preparatory military training for four more years. As High School Cadets, these boys wear a uniform consisting of khaki trousers, khaki shirt, and a helmet made of coconut fibre, drill with wooden rifles and receive instruction in Citizenship Training, Courtesy and Discipline, Mass Singing, Hygiene, Sanitation and First Aid, Close Order Drill to

include Drill of the Company and Battalion Formations and Movements, Ceremonies and Inspections, Wall Scaling, Calisthenics, Rifle Marksmanship (with the .22 Cal. rifle), Map Reading, Sex Hygiene and Riot Duty.

Instruction in these subjects is progressively arranged and is conducted for two one-hour periods per week by qualified male teachers, many of whom are Reserve officers, until the last three months of the student's fourth year when three one-hour periods of instruction are required each week. During the last three months of the fourth year in high or vocational school, such subjects as Extended Order Drill, Scouting and Patrolling, Antiaircraft Defense, Defense against Chemicals and instruction regarding auxiliary weapons, are taught by officers of the Philippine Army detailed as instructors to the school for this period. Upon graduation from high or vocational school the student must pursue a two-months course of intensive military instruction in a training camp. This completes his preparatory military training which may be considered equivalent to that received by a trainee whose course of instruction will be described later.

His preparatory military training creates in Juan a desire to become a regular officer of the Philippine Army. So he contacts the National Assemblyman from his district and is nominated by him to take the competitive examination for appointment as a Cadet, Philippine Military Academy. After passing successfully a rigid physical and mental examination, Juan receives his appointment as a Cadet from the President of the Philippines.

The Philippine Military Academy* is located in Baguio, the summer capital of the Islands. The student body is officially designated as the Cadet Corps of the Army of the Philippines.

Candidates are nominated to take the competitive examination for appointment as Cadets by Members

of the National Assembly, each of whom may nominate any number of candidates. From among those candidates who successfully pass the physical and mental examination with the highest ratings, the President of the Philippines appoints cadets to fill existing vacancies in the Corps.

The maximum strength of the Cadet Corps is established by law at 350 cadets. The mental and physical examinations which a cadet must pass to enter the Military Academy, and the course of training and instruction he receives after entering, are very similar to and modeled after those of the United States Military Academy. The course of instruction covers a period of four years. Cadets receive P960 per annum pay and an initial allowance for clothing of P56.00. They purchase their own books, food and uniforms. Those found to be physically unfit for military duty by reason of injury incident to the service are retired with the rank of cadet and are entitled to the retired pay and allowances of a third lieutenant.

Upon graduation from the Military Academy, cadets are commissioned as third lieutenants in the Regular or Reserve Forces with relative rank in the order of their final general standing as determined by the Faculty Board and Commandant of the Academy, and approved by the Chief of Staff.

Juan is fortunate. He is an excellent student, stands high in his class, and is commissioned upon graduation as a Third Lieutenant in the Regular Force. After two years of service he will be promoted to the grade of Second Lieutenant; when he has completed five years of commissioned service he will become a First Lieutenant. From that time on his promotions will be by seniority and eligibility as determined by the Efficiency Board.

Jose, after completing High School and his preparatory military training, decides to complete his education at the University. Here he finds that every College or University in the Island is required to maintain a Reserve Officers Training Unit (usually referred

*The Philippine Military Academy, by Lieutenant Conrado B. Bagot, will appear in an early issue of *The JOURNAL*.



The in-an-out of barracks life.



Chow call on maneuvers.

to as the ROTC) in which every physically fit student is required to pursue a course of military instruction for four years designed to qualify him for appointment as a Third Lieutenant of Reserve. This course of military instruction, if pursued to completion, exempts students from trainee instruction. Each student is, as far as practicable, permitted to elect the arm or service in which he wishes to train. Infantry, Artillery, Engineer, Signal, Chemical and Medical Units have been established in the various Colleges and Universities in accordance with the number of students in attendance and the facilities available at each College or University.

While in attendance at the College or University, ROTC cadets receive no pay or allowances and must purchase their own uniforms consisting of tan shoes, khaki trousers, khaki shirt, abaca waist belt and gunit helmet. While in attendance at training camp the cadet receives a clothing allowance of one peso per month.

The course of military instruction pursued by Jose in his four years at the University is practically identical with that prescribed by the War Department for ROTC units in colleges and universities in the United States. No ROTC cadet can receive a degree from his college or university until he has satisfactorily completed the prescribed course of military instruction which includes attendance at a two-months course of instruction at a training camp at the end of his second year in college. However, a student carrying a heavy schedule of academic or professional subjects can gain exemption from the fourth year of ROTC instruction by attending training camp for an additional period of one month prior to the commencement of his senior year.

Jose, being a good student, a leader, and interested in his ROTC work, is commissioned a Third Lieutenant of Reserves upon graduation from the University. Many of his classmates are not so fortunate and are issued warrants as noncommissioned officers in the reserve force, while others, still less fortunate, are assigned as privates to units of the reserve force. For mere

graduation from the ROTC is no guarantee of a commission in the reserve force. Commissions are awarded only to those who have demonstrated to a high degree their qualities of leadership and interest in military work while cadets.

Jose's career, as an officer of the Reserve, now depends to a large extent upon his own further efforts. He must serve a minimum time in grade as follows:

As a 3rd Lieutenant	2 years
As a 2nd Lieutenant	3 years
As a 1st Lieutenant	4 years
As a Captain	5 years
As a Major	6 years
As a Lt. Colonel	7 years

But before being promoted from one grade to another he must have completed the prescribed correspondence course, had at least twenty-one days of active duty training in his present grade, hold a certificate of capacity for the next higher grade, and there must be an appropriate vacancy under the peace time procurement objective of the Philippine Army.

Felipe, you will recall, terminates his schooling—and his preparatory military training—when he completes the seventh grade. He then is occupied working on the farm of his parents. During the calendar year in which he becomes twenty-one years of age he registers for military service during the first week of April in compliance with the National Defense Act. On May 15th of that year a drawing is conducted to select those registered who are to receive military instruction as trainees. Felipe's number is one of those drawn. In due course he is notified of this fact by the local police force and directed to report on a specific date to his provincial Acceptance Board. This board conducts Felipe's physical examination to determine his fitness for military service and bears any claim he advances for exemption from military service. As Felipe is declared physically fit and has no legal grounds for exemption, the board accepts him for military training.

At a later date Felipe receives orders from the District



Commander of his district to report on a specific date to the Cadre to which he has been assigned for training. Ordinarily, trainees such as Felipe are assigned to cadres located in their home provinces. Exception is made in the case of those assigned to the Field or Coast Artillery, Cavalry, Engineers and Signal Corps, who are sent to the training centers maintained by these arms of the service.

Like the great majority of trainees, Felipe is sent to a cadre in his home province to receive infantry training. He arrives at camp on the designated date, is duly sworn in with the other trainees, vaccinated, inoculated, issued clothing and equipment, and assigned to an organization.

During his first week in camp his instruction includes Citizenship, Discipline, Personal Hygiene, Antivenereal Hygiene, Care of Clothing and Equipment, Elements of First Aid, lectures explaining the National Defense Act, and Military Organization. After this preparation he begins his real military training. This includes Interior Guard Duty, Infantry Drill both close and extended order, Ceremonies and Inspections, Marksmanship, Musketry Training, Bayonet Practice, Scouting and Patrolling, Map Reading, Security in Offensive and Defensive Combat, and Combat and Tactical Exercises of units up to and including the battalion. All training is progressively arranged and adequate time is devoted to physical exercises and athletic games. Felipe is also afforded an opportunity to take courses in vocational training such as gardening, orchard planting and care, hog raising, carpentry work, plumbing and electrical work.

As a trainee, Felipe is housed in a comfortable barracks and fed from a sanitary kitchen and in a clean and comfortable mess hall. Food is ample, of excellent quality, and well prepared. A trainee's normal breakfast consists of bread with margarine, cocoa or coffee with cream, fish or native sausage, and native fruit or guava jelly. Dinner ordinarily may be boiled rice, pork, or beef, one or two native vegetables and fruit for dessert. Supper generally consists of boiled rice, fried chicken or fish or beef, and a dessert.

Felipe's clothing includes a uniform consisting of

tan shoes, white socks, khaki shorts, khaki sport shirt, abaca waist belt, guinit helmet, and cotton undershirt and drawers. He is also issued fatigue clothing and canvas rubber soled shoes—low cut—for wear in performing fatigue duty. Every item of clothing except the khaki cloth is of local manufacture, the guinit helmet being made of coconut fibre and the abaca waist belt of what is generally known as Manila hemp.

The pay Felipe receives is not large and amounts to but five centavos (2½ cents U. S. Currency) per day. But this will provide him with cigarette money and the army provides him with all the necessities of life.

At the termination of his period of 5½ months of trainee instruction, Felipe discovers that most of his companions are given a physical examination, assigned to a unit of the reserve forces and returned to their homes. But as he has displayed great interest in his military work and has shown evidence of possessing the quality of leadership, he is afforded the opportunity of attending another course of instruction for a period of 5½ months designed to develop selected trainees into specialists and noncommissioned officers. At the end of this period of training, because of the excellent record he has made, he is offered, and accepts, an opportunity to attend the School for Reserve Commissions where he pursues a 6 months special course of theoretical and practical instruction designed to fit him for a permanent commission as Third Lieutenant of Reserves. He completes this course successfully and receives his appointment as a Probationary Third Lieutenant of Reserves. He is then ordered to active duty as such for a period of six months with a cadre. After completing this period of active duty successfully he is commissioned as a Third Lieutenant of Reserves and now has the same status and opportunities for promotion and active duty as Jose.

This plan of training for national defense has been carried out successfully since the first of 1937. President Quezon continues to display his keen personal interest in all matters concerning national defense and under the expert guidance of General MacArthur and his military mission, the Philippine Army continues its growth in both numbers and efficiency.



A Tracer Control Trainer

By Lieutenant Colonel Oscar D. McNeely, Coast Artillery Corps

The need of some training device for Antiaircraft Artillery Automatic Weapons batteries is very apparent. Tracking, the old standby of the gun batteries, will not suffice for this weapon. The most common advice of all experts has been firing and then more firing. Undoubtedly this is still true for Individual Tracer Control but with the advent of the Central Tracer Control equipment now standard for these batteries, other means of training are now available. The adjusters on the control box can in time, with enough shooting and analyzing of their leads, become quite adept at target practice courses and speeds. But what a lot of time, ammunition, guns, and airplane missions this means, especially if more than one pair of adjusters are to be trained for each Automatic Weapons platoon. And even if all this could be done, how would they get the necessary training for service speeds? With the tremendous expansion of this type of organization, no commander can expect more than a normal target practice allowance of ammunition and towed target firing. Unless some form of prior training of adjusters is carefully followed, most of this ammunition and time will be expended before these men get the feel of their adjusting handwheels.

Even a thorough study of leads and lead characteristics will not teach this feel, although it will give them a fuller understanding of the problem. In the final analysis, the selection of initial leads and the rate and direction of the turning of the adjusters handwheels can only be learned by doing it. The Coast Artillery School through the necessity of training a great number of officers in a very short time and with limited firing facilities has developed the Tracer Control Trainer which it is believed will give this training without the attendant expense and time necessary to gain this experience wholly on the firing point. Furthermore, instruction in leads, lead characteristics, differential effects and observation can be more graphically illustrated by the trainer than by actually firing. As a means of training before the initial firing, it is deemed essential. After firing, it doubly impresses the student with causes and effects and excites interest. Then again it is the sole means at present, of obtaining some training for the adjusters under conditions of service speeds.

The objectives to be gained by use of the trainer are:

1. To familiarize the adjusters with the direction and rate of turning of their handwheels to give the desired movement of the tracer stream.
2. Training of the adjusters in selection of the initial leads, having course and speed of target given.
3. To familiarize the adjusters as to the magnitude of the leads and the rates of lead changes for type

courses and to afford practice in the application of such leads on the control box.

4. To familiarize the adjusters with the appearance of the tracer stream in space, and its proper relation with respect to the target.

5. Training of the adjusters in adjustment of fire with the aid of spotting.

6. Training of the pointer matchers on the control box in matching pointers and anticipating the direction and rates of lead changes.

7. Training of spotters in calling the sense of the tracer stream deviation.

8. To familiarize the operators of the lead control table with leads and lead characteristics for different courses and speeds of targets.

Although this trainer has been in use for a limited period only, the apparent results are worthy of note. During a recent test firing of the caliber 0.50 machine gun, a relatively green control box crew started the test. After firing for one morning with very poor results, this crew was placed on the trainer for a period of only one hour and drilled on courses similar to those that were being fired in the test. During the remainder of the test, the percentage of hits obtained was over five times as great. A similar increase in efficiency was clearly indicated by two successive officers' refresher classes at the School, the first not having the drill on the trainer and the second having a few type courses for each student. Indications are that this training will be especially valuable for green control crews, and also for training under service conditions for which towed targets cannot be obtained.

The idea for such a trainer originated with the construction of a device by the Coast Artillery Board for the testing of various methods of observing tracer fire. An apparent tracer stream as it would appear to an observer was constructed to scale by suspending small beads on wire strung from the top to the bottom of an enclosed box. A target was mounted in the box so that it could be moved laterally and vertically by knobs placed at the observing end of the box. The observers were not allowed to observe with both eyes as the object of the test was to determine whether a tracer stream could be properly observed beyond the limits of stereoscopic vision. It was soon determined that a single observer limited to the use of one eye could not consistently put the target in the tracer stream. Two observers placed some distance apart, one moving the target laterally and the other vertically, could with very little trouble put the target in the tracer stream. In other words the device proved that bilateral observation was necessary if accurate observation was to be obtained.

The Coast Artillery School has used this device for the past two years to illustrate this problem of observation. From this experience grew the idea of controlling the movement of the target with the present standard Control Equipment Set M-1. The relative movement between target and tracer stream was designed to give the same angular movement, viewed from the observation end of the box, as was registered on the control box.

It was also desirable to offset the tracer stream from the target the actual amount of the leads on type courses so that the observer had not only to put the tracer stream on the target but to keep it there during the normal firing time of the course. This was possible as the control box is made with both lateral and vertical input connections that combine with the adjusters' hand-wheels through differentials to offset the pointer matchers' dials. Of course no lag in observation due to time of flight of the projectile could be simulated, but the slight lag in matching pointers to offset the target, gives the necessary training in this important factor.

The trainer which the School constructed was built in the School machine and carpenter shops. It consists of three principal parts, the Trajectory Tunnel, the Control Equipment M-1, and the Lead Control Table. The description and use of each will be covered in the succeeding sections.

TRAJECTORY TUNNEL

The trajectory tunnel is that part of the Tracer Control Trainer equipment containing the apparent tracer stream and the target, built to scale so that either the tracer stream, the target, or both can be moved laterally and vertically with respect to each other. There are any number of ways that this piece of equipment can be built but it is believed that the simplest method is to have the apparent tracer stream, a series of small electric lights, mounted on a curved rod and attached in the tunnel so that it can be moved laterally by the flexible cable from the lateral side of the control box. The illuminated target is moved vertically by the flexible cable from the vertical side of the control box, giving the same effect as though the tracer stream were being moved off the target vertically.

In order to eliminate depth perception, except by one object concealing the other, this apparent tracer stream and the target should be enclosed in a light-proof box so that only the illuminated target and the small flashing lights of the apparent tracer stream can be seen. In order that both lateral and vertical adjusters see the relation between the two from approximately the same point, an optical system must be used to bring their lines of vision together. A system of mirrors is used with complete satisfaction.

It is well known that to an observer at the gun the tracer stream appears to be curved both laterally and vertically. There actually is a certain amount of curve due to each tracer being fired at a different azimuth and angular height as well as the vertical curve due to



Tracer Control Trainer

the effect of gravity on the projectile. In addition, there is the apparent curve caused by the eye following the rapidly moving target. This optical illusion makes the tracers appear to shoot past the target in the opposite direction that the target is moving. As this latter value is indeterminate, an apparent tracer stream must be plotted that will give in general the same appearance as an actual tracer stream under average conditions.

This appearance is obtained by plotting a trajectory both laterally and vertically for some given quadrant elevation. As the firing tables are made up in this form for every one-quarter second of time of flight, these values are used. It has been found that the lateral curve is sufficient if plotted for a 100 yard per second target but to give a more decided curve vertically, it is best to double the vertical deviations from the line of site. As the target must move in between two lights of the tracer stream, the range for the target must be taken at some point between two one-quarter second time of flight points. The tracer stream should be extended on beyond the target by approximately the same number of lights that are between the gun and target. Also, it is best not to have lights too close to the point of observation. It has been found that twenty-four lights are about the minimum that should be used, twelve on each side of the target.

The small lights representing the tracers are connected in four circuits of equal number of lights to a circuit. Through the use of a rotary switch with four segments operated by a phonograph motor, the lights of each circuit go on and off in sequence giving the appearance of the tracers moving out from the point of observation (gun position) toward and beyond the target. Due to the absence of depth perception the adjusters cannot judge accurately the position of the target with respect to any one of these lights or the tracer stream as a whole, except when the target hides a tracer or a tracer lights up in front of the target. The lights for the tracer stream should be the small grain-of-



Tracer Control Trainer (manned)

wheat light such as is used for medical instruments, mounted on $\frac{1}{8}$ " brass tubing, with the tubing acting as the ground and a small insulated wire inside the tube making contact with the lamp contact as the other side of the circuit. This tubing can then be tapped into the curved trajectory rod and adjusted to the proper length to give the vertical curve. These lights operating on approximately one volt can be obtained from the better medical supply houses at approximately \$1.00 each. The brass tubing is stock material.

To move this tracer stream laterally it is best to mount the end over the point of observation with vertical bearings and connect the other end to a lead screw mounted on the other end of the tunnel box. This lead screw can then be actuated by the flexible shaft from the lateral side of the control box. As the turning of this lead screw and its distance from the point of observation is the measure of the mil displacement of the trajectory stream, the proper number of threads per inch must be carefully worked out. The output side of the control box turns the cables at $1\frac{1}{3}$ mils per turn.

As has been stated before, it is simpler in construction to move the target vertically rather than the tracer stream. This is done by either a vertically mounted lead screw or a rack. For either of these methods the exact gear ratios must be worked out so the target will move vertically the correct angular displacement from the point of observation as is indicated by the control box dial. The target can be either a small scale airplane or sleeve target, best made of some plastic such as lucite with a small light inside, which will cause it to be visible without illuminating anything else in the tunnel. A dentist supply house that is equipped to cast lucitone can readily make such a target, if a pattern is furnished them. A further innovation can be added by gearing another flexible shaft or other means of control to the target so it can be rotated to give the proper aspect or angle of approach of the target for different positions on the course being set in through the lead control table.

Several other methods of construction have been suggested and the School is now working to develop a tunnel in which the tracer stream will be made of fluorescent plastic illuminated by the so-called "black light" which is not otherwise visible. Also the target and tracer stream will be stationary but the optical system will control the apparent movement of the tracer stream. This method of construction appears to have many advantages, particularly for instruction in observation.

LEAD CONTROL TABLE

Fundamentally all the lead control table does is to transmit mechanically into the Control Equipment M-1 the correct amount of lead displacement both laterally and vertically for a given calculated and plotted course, but in the opposite sense from the true leads. It is composed of a set of lead curves for various courses, a constant speed motor and drive for the curves, and lateral and vertical pointers for following the curves.

The paper roll on which the lead curves are plotted is fastened to two wooden rollers. One of these rollers is driven at a constant speed of one inch in two seconds. Each set of curves is made up for three speeds on a particular course. For example, one set of curves might be for a .30 caliber machine gun $R_m = 600$ yards, $H = 300$ yards, $S_c = 50, 60$ and 70 yards/sec. Many more speeds could be added to these charts. The scale of the abscissa is $1'' = 2$ seconds and the scale of the ordinate is $1'' = 20$ mils.

There are two transmitters mounted on the Lead Control table, one for lateral and one for vertical. These transmitters consist of handwheels connected through gearing to both the flexible cable and to racks acting as pointers for following the lead curves. The gear ratios must be proper to turn the cables 8 mils per turn while the rack moves 20 mils per inch or to whatever ordinate scale is used on the lead curves. The input connections of the control box operate at 8 mils per turn.

A constant speed motor is required to provide the constant ratio of turning on the wooden rollers to which are attached the master lead curves. The motor which is in use at present was taken from an old phonograph and operates at approximately 78 r.p.m. It can be adjusted slightly so as to turn the rollers at the required speed of the abscissa scale of the lead chart. This can be the same motor as the one that operates the rotary switch. It might be suggested here that if a faster tracer stream, such as a machine gun platoon firing, is desired, this rotary switch can be made with eight segments so that each light circuit will be connected twice during one revolution of the rotor. By connecting adjacent segments to one circuit the slower or 37-mm. tracer stream can be simulated.

It has been found that the adjusters can get considerable training in the direction and rate of turning of their handwheels without the use of the trajectory tunnel. This can be accomplished by putting the correct leads, in the opposite sense, into the control box by

means of the lead control table. Without operating the pointer matchers' handwheels, let the adjuster match the pointer on the match pointer dial by his own handwheel.

CONTROL EQUIPMENT

The standard issue Control Equipment, Set M-1, is used for controlling the movement between target and tracer stream as well as to transmit the data from the lead control table to the control box. The control box is mounted under the observing end of the trajectory tunnel and receives the true leads, in the opposite sense from the lead control table, through the input cable connections. These leads are combined by the control box differential with the input from the adjusters' handwheel and offset the pointer matchers' inside dial. The difference between the true lead and the adjusters' estimate is transmitted by matching pointers, to the trajectory tunnel where it shows up in the relative position of target and tracer stream.

When the equipment is set up and before the cables are connected, the lead control table, control box and target position must be synchronized. In other words when the lead control table transmitter pointers are at zero lead, the adjusters dial at zero and the matching dial at normal (either 300 or 500), the target should be in the apparent tracer stream. Then connect the cables and test synchronization.

As the matching dial reads normal when the target is

in the tracer stream, this dial can be used for checking the accuracy of the adjuster. This eliminates having some other method for the instructor's check and for spotting. The instructor by standing opposite the control box from the adjusters can at a glance at this dial tell the sense and amount of deviations of the tracer stream from the target. Also the pointer matchers can act as spotters and call off spots such as "Left" "Good" "Right," or "High" "Good" or "Low." To make this spotting consistent and easy, a strip of tape can be placed on the match pointer dial with a colored section marked "Good" subtending five or ten mils either side of the normal index (300 or 500). The tape on either side of this "Good" sector is marked "Right" or "Left" on the lateral dial, and "High" or "Low" on the vertical dial. Thus according to the position of the transmitting dial, the matchers call off the position of the tracer stream with respect to the target.

The Coast Artillery School is using this trainer continuously for instructing student officers of the AA Refresher Courses and finds it invaluable, with such large classes and limited firing time, in instructing in lead characteristics and the proper use of the control equipment. A detailed drill has been drawn up for this instruction and is being published as an Information Topic along with construction data, bill of material and costs. This Information Topic will be distributed by the Information Section of the School.



The Public Relations Officer

By LIEUTENANT COLONEL FRANK J. PEARSON
General Staff Corps

A Public Relations Officer will be found in the organization of the Staff of the majority of the Posts, Camps and Stations in the fast-expanding Army. Despite the fact that many seem to consider this a new office, history indicates that it is as old as warfare.

David was his own PRO and so was the late J. Caesar, whose factual, but favorable-to-his-own-side, accounts of the Gallic blitzkriegs could be studied with profit by all PRO's of current date. The PRO job has been filled through the ages, under various titles and with various techniques, by psalmists, harpists, ballad makers, poets and pamphleteers, along with others too numerous to mention here. Tom Paine, writing a pamphlet as occasion required, was Washington's principal PRO, although Sam Adams and Ben Franklin helped. Horace Greeley and Joseph Medill were two of the best PRO's that Lincoln had. The idea is that the PRO is quite an ancient adjunct of the military establishment, and the record shows that the old boys were about tops in their profession. They understood that for their outfit to succeed it had to have the support of public opinion. The old minstrel playing his harp understood that his master's standing with the listeners depended on the kind of a tune he played and on how well he handled his instrument. The instrument with which the modern PRO appeals to the public is composed of the press and its affiliated agencies and it's a lot more complex than the old minstrel's harp. The technique is different but the basic principle is the same. If the instrument is badly handled it will play a sour tune. With the

rapid expansion of our Regular Army and the induction of the National Guard and trainees into Federal service, the eyes of the people are on the Army as never before. Prior to the present emergency the Regular Army was a sort of National Cinderella—a step-child—and since there was little it could say for itself that would do any good, except perhaps to draw attention which would bring a few more kicks and cuffs, it made little difference what it did about public relations. The Army was just another agency of the people and the men composing it were professional soldiers. The units of the Army were not identified as coming from any particular town or section of the country so there was little, if any, interest in their welfare by communities.

Today—with the civilian components and the trainees becoming actively identified with the Army—the "home folks" are deeply interested in the welfare of their men. The camps where their sons, relatives and husbands are stationed are in many cases too distant for convenient visiting, with the result that the people back home depend, to a great extent, upon the press for their news. The press plays a most important part in giving to the people of the nation a picture of conditions in the various camps. Through the columns of the papers these conditions can be portrayed as excellent.

Colonel Pearson entered the service in 1917 as an Infantryman. He has been a student and instructor at the Infantry School, and graduated from Leavenworth in 1921 and the War College in 1924. From 1927 to 1929 Colonel Pearson edited *The Sentinel*, the famous publication of 15th Infantry in China. He now heads the Army Information Service, New York City, and is in charge of Public Relations for the Second Corps Area.



or they may be compared with the concentration camps in Europe. The job of handling men in the mass is of such a nature that nothing short of perfection will render a camp impervious to the barbs of an unfriendly writer. Perfection can hardly be expected in camps where, because of a rapid Army expansion program, construction is barely keeping pace with the influx of recruits. A few tents in which the fires have gone out in cold weather, probably because the tent occupants did not understand how to keep them going; a breakdown in a barracks heating plant; a badly cooked meal which brings complaints from a number of soldiers; a temporary shortage of warm clothing during a cold spell; a lack of water-proof clothing during a wet spell; any one of a thousand and one things which can happen in a camp or station where men are being handled in the mass can provide material for unfavorable publicity.

The Public Relations Officer is the man who has the job of seeing these minor incidents are not exaggerated or given an undue importance or are made the basis for publicity which will disparage the management of the camp and incidentally alarm the soldiers' friends and relatives back home. The success with which he accomplishes his mission will depend entirely on his relations with the Press. If he has the friendship and confidence of the Press he can depend upon having the best face possible put on the unpleasant incidents which mar the serenity of camp routine. If he has not earned the good will of the Press, incidents unfavorable to the camp may be overemphasized.

The Public Relations Officer is a key man at all army posts, and complete responsibility for the reputation which the Post bears with the public rests on his shoulders. His job requires a cool head—one that does not go spinning when a shower of bad publicity possibilities comes bouncing around it. It requires tact, diplomacy and an instinctive understanding of the importance of fair and impartial dealings with the Press and its affiliated agencies. It also requires that he have the complete confidence of the Commanding Officer, and that he be given the authority to obtain and make available to the Press the facts they seek with a minimum of red tape. Where information sought is of a secret military nature, he should have authority so to inform the press without any of the run-around hokum of pretending to be seeking the information for them.

If possible, an officer selected for the duty of PRO should have had newspaper or public relations experience, and it seems probable that with the present influx of reserve officers into active service a supply of PRO's with such experience will be available. Such an officer starts out with the advantage of knowing the lingo of the newspaper profession, of being able to recognize instantly what is, and is not, news, and of understanding the value of the time element as well as the mechanics and technique of getting news from the point of origin into the newspaper offices, and eventu-

ally into print. Usually he will have valuable contacts which will facilitate the distribution of the news of his post. It should not be taken for granted, however, that the mere fact that an officer is a trained newspaper man qualifies him, *per se*, for the post of PRO.

An officer with a distinguished record as a writer, reporter and editor might be worse than worthless if he has developed what is known in the profession as a "desk man's grouch," or if he has such a superiority complex that he displays contempt for working newspapermen assigned to his camp whom he considers his professional inferiors. A successful public relations man, on the other hand, even though he never had a day's newspaper experience in his life, is certain to have acquired the knack of getting along with the press and its affiliated agencies. Although he may lack the news judgment of trained newspapermen, he can be depended on to do a reasonably successful job through the utilization of the talent of the newspaperman assigned to his camp, post or station, on the basis of the friendly relations he has established with the representatives of the press and its affiliated agencies.

Where no officer with successful public relations experience is available and the choice lies between a trained newspaperman with a "desk man's grouch" or a superiority complex, and an officer without newspaper experience but with a record of tact, diplomacy and the ability to make and keep friends, there should be no hesitation in appointing the latter to the public relations job. Such an officer should make no pretensions to a knowledge of the newspaper business. He should avoid giving the impression to the press that he considers himself a better judge of news values than they. If he will merely use the same common sense in dealing with the press and its affiliated agencies which he uses in all of his ordinary contacts he will get along. He will soon discover that he can ask the press for a "break" on an unfortunate story and get it. He will find that they will do more—that when he is on the verge of a boner they will give him advice that will save him many a headache.

Newspapermen live up to a code which prohibits an abuse of confidence. By daily contact with them, on a plane of mutual confidence and respect, the PRO will gradually acquire an understanding of news-gathering techniques, along with the patter of the profession. In time he will be able to get along by himself without leaning to any great extent on his newspaper friends. But when that time arrives he should be more careful than ever to avoid giving his newspaper contacts the impression that he thinks he knows their business. A top-flight newspaperman is the product of years of experience, and he is improving himself to the day he dies. A knowledge of the patter of the profession, a general inkling of the techniques, and a wide acquaintance with newspapermen, does not qualify a non-professional to argue with the professionals as to news values.

All Public Relations Officers should remember that

there is no censorship of the press. Every PRO should carefully avoid any attitude that will give the Press the impression that there is a censorship—or that he is trying to run a little personal censor's office of his own. If the publication of certain news would obviously be detrimental to the service, a PRO who has handled his job properly can usually take the press into his confidence, give the newspapermen the information "off the record," and trust to their loyalty. This does not mean that every story which a PRO considers unfavorable can be suppressed by the off-the-record method.

Obviously, if the general outline of the story is widely known, and if the news is of a sort that an editor feels under obligation to his readers to print, there is nothing to do except ask the Press to give the camp as good a break as possible and trust for the best. A PRO should remember that the sensational story of today is forgotten by most newspaper readers by the day after tomorrow, and that the more he tries to suppress it the longer it will last.

Reporters, when put on their mettle, are experts at spade work and, if they cannot get the whole story in a single delivery from a PRO, they can be relied upon to dig it out a little at a time. The longer they are kept digging the longer the story will last—along with whatever stench may be coming from it. A PRO also should remember that what may appear to him as a complete ruination of the good name of his camp is merely another more or less cheap murder, arson, or rape, as the case may be, to reporters who handle many such stories every week as part of their daily routine.

Given the facts, reporters will decide, nine times out of ten, that the story is worth only a few lines on an inside page. Forced to dig, they are likely to give the story as big a build-up as possible by way of having something to show for their work. This was demonstrated recently in the handling of two deaths in two different posts. In one instance a recruit accidentally shot another recruit. The fatality was just another "didn't know it was loaded" story. Handled openly and frankly, it would have rated less than 200 words. An attempt was made to suppress it with the result that the Press raised a cry of censorship and kept the story on page one for about three days, and dragged it out on inside pages for more than a week. In the case of the other fatality, which had more sensational possibilities than the rookie shooting, the PRO promptly released the available facts to the Press on his own initiative. The story was given about a dozen lines on an inside page and that was the end of it.

Public Relations Officers should, of course, never double-cross the Press. They also should be at considerable pains to avoid any suspicion of double-crossing or of playing any favorites. Newspapermen as a class are the most easy-going, tolerant, and broad-minded tribe on earth. They forgive and forget bad debts, usually find a good word to say for the erring brother,

and are tolerant toward most of the foibles and weaknesses of human nature. But there is one thing they will never forget or forgive—that is being double-crossed on a story.

One form of double-crossing is to give a story to a favorite reporter and withhold it from other members of the Press. Another is to give the press a false statement. For example, at one camp the PRO made a statement to the assembled press that "there is plenty of clothing for every man on the post." He knew perfectly well that this was not the fact, but, presumably, considered it his duty to give the newspapermen a favorable slant on the situation regardless of the existing conditions. Naturally, being neither blind nor dumb, the newspaper reporters soon learned that the information received from the PRO was wrong. Obviously, publication of the news that a clothing shortage existed would not have been a boost for the camp. But had the PRO taken the press into his confidence it is probable that as favorable a story as possible would have resulted. His misrepresentation of the facts resulted not only in emphatically unfavorable publicity—which, however, will be forgotten by the public in time—but definitely impaired the PRO's standing with the press and reduced his usefulness to something approximating zero—a condition which the long memories of double-crossed reporters is likely to make permanent.

The favoring of any reporter or reporters above others may not land the PRO in the doghouse by unanimous consent, but it will make him enough enemies among the press to cause him many a headache. A PRO should never favor any individual reporter or discriminate against one in the release of news, regardless of how much he may like certain individuals and dislike others. His job is to get the news to all the newspapers at the same time and his personal feelings toward individual reporters have no more to do with that mission than an artillery officer's preference for white horses has to do with a mission to support infantry.

The PRO should remember too that it is part of his job to protect reporters who dig up exclusive stories and come to him for amplification or verification. When a press representative, either in person or by telephone, asks for certain information necessary to the rounding out of a story he has unearthed, it is the obligation of the PRO to keep his mouth shut and not tip off the inquirer's exclusive story to other press personnel. This does not mean that a reporter who has obtained advance information of a story which the PRO is about to release must be permitted to stake out a claim to prior rights to such a story. The idea is that when a reporter digs up a truly exclusive yarn and requires the assistance of the PRO to round it out he is entitled to the story exclusively—unless some other reporter stumbles on the same information and also seeks the PRO's aid in completing his facts. Such coincidences are rare and when they occur the first reporter should be informed that a competitor is shooting at the same target, and the

second inquirer should be advised that his story is not as exclusive as he thinks it is. The PRO must protect himself from any suspicion of abusing a confidence.

When a PRO has "spot" news, he should notify all the news-distributing agencies necessary to cover his field, but he should first supply the information to the reporters on the ground, and give them time to get the story into their offices before making a general release to newspapers or syndicates nor represented by their own personnel. If, however, such newspapers or agencies have a tip on the story and telephone for the information it is the PRO's job to give them the information sought.

In making a general release of a spot news story to the news organizations not represented on the ground, it is never good policy to give all of any story that runs to any considerable length to the first organization called, or to the first organization which calls the PRO. The PRO should give a short bulletin, say, "That's all I have at the moment," hang up the 'phone, and go on to the next. He should amplify a little more as he proceeds with each call so that the organization at the end of the list gets enough additional information to compensate for being the last called. The PRO can then go back to the first paper called, and proceed down the line again, cleaning up the entire story in the second series of calls. In such a situation a PRO must work fast. He must not permit himself to be stalled or delayed by questions. An alert rewrite man, if permitted to ask all the questions he can think of, can do one of two things—get the entire story out of the PRO or hold him on the line until the rewrite man's paper can get to press with what he has, while its competitors know nothing about it. The competitors will not like that. They may accuse the PRO of favoring the paper which scored the exclusive story—or even of acting as its representative.

Under no circumstances should a PRO or any individual connected with his office represent any newspaper or press association. Such opportunities will be offered, with the bait that by so representing the newspaper or news service the PRO will establish a sure and easy means of getting his news into print. There is usually a hook inside the bait. A PRO at a certain camp was requested by a press association to become the representative of the association at the camp and to send them all the camp news. They would pay the 'phone or wire charges, and would pay the PRO space rates. On its face it was a handy arrangement. But investigation revealed that the local correspondent of the association had been discharged and that the PRO was being asked to take the place of a man who had been earning his living as a news correspondent. Had the proposal been accepted the PRO would have been in the position of keeping a working newspaperman out of a job—a touchy subject in these days with many top-flight men out of jobs—and he would have been open to the charge that he was favoring his own association.

The fact that the association was willing to pay space rates could not take the curse off. It would have intensified it, if anything, on the ground that the PRO was using his position to chisel a few extra dollars a month by "taking the bread out of a working newspaperman's mouth." And no one would believe he was working without pay—if he was.

That would not make for friendly relations with the press. It would be resented even by the editors of the papers published near the camps with whom the PRO should do his utmost to establish friendly relations. He should establish personal contact with them at the earliest possible moment and impress upon them that the camp is at all times open to them or their representatives. He should establish a relationship under which the editor will inform him of any material detrimental to the camp which reaches the editorial desk, particularly the "Letters to the Editor" type of communications. He should have the editor at all times in a mood to cooperate, by revealing to the PRO complaints on matters that require remedial action, and by giving him the opportunity to trace canards and subversive communications to their source. If a letter containing a justifiable complaint reaches an editor, the PRO should not deny the facts. He should lay his cards on the table, explain the circumstances and trust to the editor's patriotism to act in the best interests of National Defense.

It is wise to anticipate adverse criticism. One of the most prolific sources of subversive canards against camps is the health situation. If the health of the camp is average or better the PRO should get out releases showing the record at frequent intervals, and he should invariably do it in periods of bad weather. This stops the subversive canards before they can get started. In one Corps Area a "whispering campaign" was instituted with reference to three distinct camps. Each time the "epidemic" report was identical. In each instance there were mysterious letters and telephone calls to newspapers. However, there had been releases sent out on the health of those camps, and the newspapers, realizing that the reports they were receiving from the anonymous informers were false, paid no attention to them. Reputable newspapers almost never print unsigned communications, and never print news tips without confirming them, but the stir raised by a group of reporters investigating these rumors helps spread them and enables the subversive authors to point to the newspaper activity as confirmation of their libels.

Every PRO, in dealing with subversive rumors, should remember that Abraham Lincoln, who knew the people better than most, said "You can fool some of the people all of the time." The subversive agitators operate on the theory that the group which can be fooled all of the time can be used to fool all of the people now and then. A PRO should use every opportunity to beat the subversive whisperer to the gun by sending out as much favorable publicity on camp conditions, especially with respect to health, as possible. He

should overlook no incident of news value which can be utilized to show that the personnel of his camp are healthy and happy.

Every PRO should insist that all press representatives work through his office. He should make it clear that this is not for the purpose of setting himself up as a censor or critic of their stories, but for the convenience of the press. Only when the PRO knows what newspapermen are working on the post, and where they are, can he be certain that all of them receive the assistance to which they are entitled from the PRO. A reporter wandering about a camp without the knowledge of the PRO, or with no direct contact with the PRO's office, is bound to meet many obstacles in gathering news. He may run into some difficulties in filing or telephoning his stories, or may miss an important story available only at the office of the PRO. As his difficulties multiply, he will begin to sharpen an axe for the camp. For his own protection and the protection of the reporters, for whose well-being the PRO has a certain responsibility, the PRO should know at all times what reporters are in his camp, what they are doing, and where they can be reached in the event of a sudden outburst of spot news. That means that at all times all reporters must work through his office.

It is possible that some PRO reading this far has begun to wonder: "How can I do all of this telephoning and wet-nursing of the press and at the same time write releases on my big news and get them out?" The answer is, don't worry about writing releases on spot news. Spot news will take care of itself by telephone and telegraph. As for releases of other material, it is bad policy to flood the press with releases of doubtful news value, some of no value at all. Where the envelopes of any organization bring trifle after trifle—editors call it "tripe"—the point is soon reached at which the editor tosses the stuff to the floor—unopened. This does not mean that small and interesting post or camp items of purely local interest should not be released—to the places which have an interest in them. It means that the PRO should call his shots and not blaze away at the entire Corps Area press with an item of interest only to the friends of Private Smalltownner who resides exclusively in the circulation area of the Troutville *Free Press*. The *Free Press* will be happy and grateful to learn about the doings of Private Smalltownner. So also will the paper in the county seat if he comes from a rural neighborhood. In the case of Private Cityguy, he may come from a section of a large city which has a neighborhood newspaper. There are thousands of such newspapers in the country printing nothing but neighborhood news. The one in Cityguy's neighborhood will be glad to get a story about him now and then.

But don't bother the great metropolitan dailies—in New York, San Francisco, Chicago, Boston, St. Louis, Philadelphia, and similar places with the doings of either Smalltownner or Cityguy. They don't give a hang

about him until he becomes at least a general officer—unless he elopes with the Colonel's daughter. In that event he's news. That news will get into print without any assistance from the PRO, and he'd better not try to suppress it unless he wants it to linger on page one beyond its allotted two or three editions.

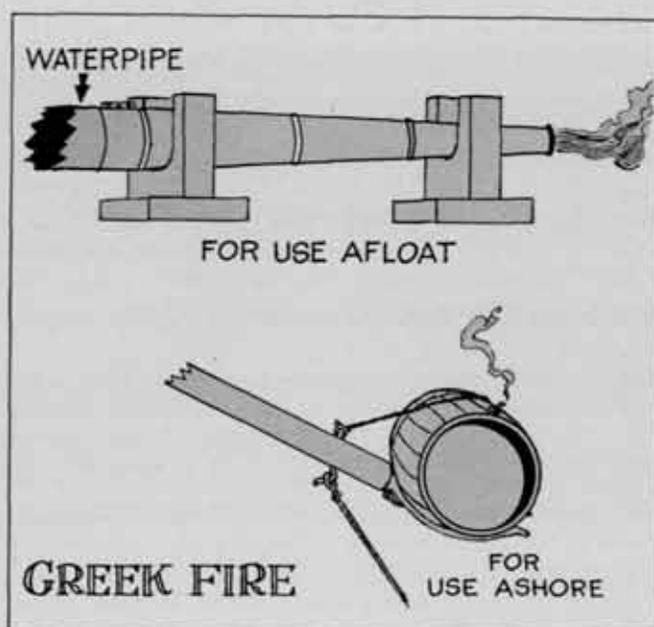
Many an officer who is PRO in addition to other duties may well wonder how he can be expected to turn out a PRO job as is indicated in this article and get his other duties done. The answer is that he can't. The duties of the PRO are such that in order to supervise properly the gathering of news, the taking of pictures—a job which requires eternal vigilance to make certain no pictures are released that are not in good taste and not in conformity to War Department regulations—arranging for press conferences, and the like, he should not be burdened with other duties. His assignment may, and usually does, include the detail of G-2 or S-2 of the post in addition to his PRO duties. As public relations is a function of G-2 or S-2, this is a logical assignment. From the Public Relations standpoint it is all to the advantage of the PRO to have the Intelligence detail. The S-2 or G-2 knows what is going on. He is in a position to obtain directly, and by the shortest possible route, information on almost anything that may happen on a post. So if the post is so large that one officer cannot handle the job of G-2 or S-2, along with the PRO work, the G-2 or S-2 should still be the PRO and should be given an assistant to handle the PRO work. This assistant should enjoy all of the access to information which is the prerogative of his chief—the S-2 or G-2.

This article has been devoted almost exclusively to the press phase of public relations, in an age when the photographer—still and movie—and the radio are also potent factors in moulding public opinion. The reason is simple. The taking of pictures discreditable to a camp can be prevented. If a picture is not made it cannot be published in the press or shown in a movie house. The radio depends for its news on press association reports and is controlled by authority sufficient to prevent its use for subversive activities. However, once a writer sits down to his typewriter to give an account of what he saw, thought he saw, or wishes to make his readers believe he saw, there is no power on earth, within the limitations set by his employer or publishers and the postal regulations, that can prevent him from writing any sort of a story he pleases.

If the worst comes to worst an objectionable film can be taken from an uncoöperative camera man, but no one can reach into the mind of a reporter and pluck out the impression that has been implanted there. The reporter is still the major force in the moulding of public sentiment, of which Abraham Lincoln said: "Public Sentiment is Everything. With Public Sentiment Nothing Can Fail, Without it Nothing Can Succeed."

The Story of Artillery Through the Ages

By W. A. WINDAS



Chapter 13: GREEK FIRE

In contrast to the catapults of the period, there was one form of Middle Age artillery that had a very definite effect on civilization. It has been said of Greek fire that it was "the fire that saved Christendom from being burned to a cinder."

This formidable weapon was developed and used by Europe's eastern outpost—the Greek Eastern Empire. Constantinople, the seat of this empire, had its back turned to Europe and was fully occupied with the hordes of the East. European historians have not often given this empire the attention and respect which is its due, especially for its part in the struggle with the followers of the new religion, Mohammedanism.

When Islam hurled its forces against Europe, the Eastern Empire suffered quick reverses. But before the Saracens could complete their victory, the Empire produced Greek fire—a revolutionary weapon that turned the tide of invasion. The exact formula of Greek fire is unknown, but a good guess would probably include sulphur, naphtha, pitch, and quicklime. Its most formidable characteristic was its ability to generate great heat

upon contact with water—which precluded the use of water as an extinguishing agent.

At sea, where it earned its greatest fame, Greek fire was projected from a long copper tube. Ashore it was put in a keg and flung from a catapult. It is not known what change in formula was made to take the place of water for land use.

As everything in connection with Greek fire was kept secret (and successfully), we do not know exactly how the tube was used to project the flame. Contemporary accounts state that the fire was projected in a steady, unquenchable stream. Whether this was made possible by the water pressure at the large end of the tube, which was six to ten feet long, is not known. It does not seem quite reasonable that the pumps of the day could build up such steady pressure.

For centuries the Saracens knew no counter for this weapon, and Constantinople was able to hold off invaders until Europe once more became strong in a military sense. The Arabs did not take Constantinople until after the discovery of gunpowder.



Once In a While.....

By Major William J. McCarthy, Coast Artillery Corps

The story of Battery B, 41st Coast Artillery and how it won the Knox Trophy is one that no doubt has been repeated by every Coast Artillery firing battery at some time in its history. It is a saga of *esprit*, perfect coordination, hard work—and the kindly smile of Old Man Probability.

When I arrived in the Hawaiian Department, I was assigned to Battery B, 41st Coast Artillery, manning eight-inch guns. This was a return to my first love after an absence of several years; to me it was like the traveler returning home. I was once more among those I loved best.

Battery B was in excellent shape. Its morale was of the highest order. Under my predecessor, Captain Porter T. Gregory, it placed third in the Knox Trophy competition for the previous year. Verily, I was on the proverbial spot. If the organization had not been so well trained, perhaps I could do something. But to get an excellent outfit dumped into your lap has its disadvantages. The big unasked questions were, "Does the new skipper know his onions?" and "Can he repeat?"

Late in November Major General Fulton Q. C. Gardner, commanding the Hawaiian Separate Coast Artillery Brigade, directed Colonel Eugene Walker commanding the Harbor Defenses of Pearl Harbor, to move the 1st Battalion of the 41st to a new firing position at Brown's Camp to conduct special target practices. The 1st Battalion consisted of Batteries A and B, commanded by Lieutenant Colonel Watson L. McMorris.

This was an ideal test. Everything about the new location was foreign to the personnel of both batteries, with different observing stations and firing spurs. From our view this was virgin territory. Here indeed was where the new battery commander would either make or break.

The range officer, Lieutenant Willard J. Hodges, Jr., was new; the plotter, Sergeant Robert Smith, was doing his first trick at the plotting board; some of the key positions in the plotting room were filled by recruits who had never witnessed a firing; one gun commander, and portions of each gun crew, were new; three days before the shoot sixteen of the best men returned to the mainland.

Before any drill was held the scheme of firing was announced to all and was not changed one iota until the completion of the practice. Having satisfied myself that the range officer and Sergeant Edward O. Duncan, the battery executive, knew their business the rest was easy. It is to their everlasting credit that the practice was so successful.

This special practice was fired December 6, with excellent results. The recruits had received their baptism of fire and were now veterans.

With fear and trepidation, the regular "pay" practice was approached. Things looked too good. The morale of the outfit was overflowing. Recent instructions from higher authority began placing "bugs" in the practice to simulate battle conditions. Constant shifting of personnel was necessary to meet any contingency involving failure of any of the various key lines or men.

One trick that Lieutenant Hodges found effective was to place a stop-watch in the plotting room and have the entire range section keep perfectly still for a minute. This was to show the men how long a minute really was instead of thinking how short it was. He then let them see how many times each man could operate his particular board in that time, slowly at first and then gradually with increasing tempo. The net result of



Colonel Eugene Walker congratulates Major McCarthy.



On the way . . . to the Knox Trophy!

the scheme was to create in each man a sense of confidence in his own ability to do his particular task rapidly and well.

Particular emphasis was laid on the training of the Aiming Rule—Gun Pointer team. Instead of using just some "guy," the aiming rule operators were rated gun pointers and on numerous occasions during drill they switched positions with the gun pointer on the gun. The gun commanders did all the bore-sighting, closing and checking of azimuths. Their work was checked by the battery commander. Sometimes the battery commander did it all and had the gun pointers check him.

The plotter computed much of the orientation data in the field. This gave a three-way check as the battery commander and range officer figured it out independently. Several of the plotting room detail were as well qualified to use logarithms as were the commissioned officers.

The administrative details were handled to perfection by First Sergeant Harold Gardiner. On his shoulders fell most of the task of getting observers to their stations and arranging the infinite number of little details that come up each day. To the communications detail all praise must be given for the manner in which

they met all the emergencies that can—and did—arise.

Throughout all drills, critiques, and sub-caliber firings every man was taught to feel that the whole affair was a very personal matter. Mistakes were pointed out not with a view to censure, but for correction in order to avoid repetition. A "bloomer" usually cost the unhappy victim a few nickels at the soda fountain.

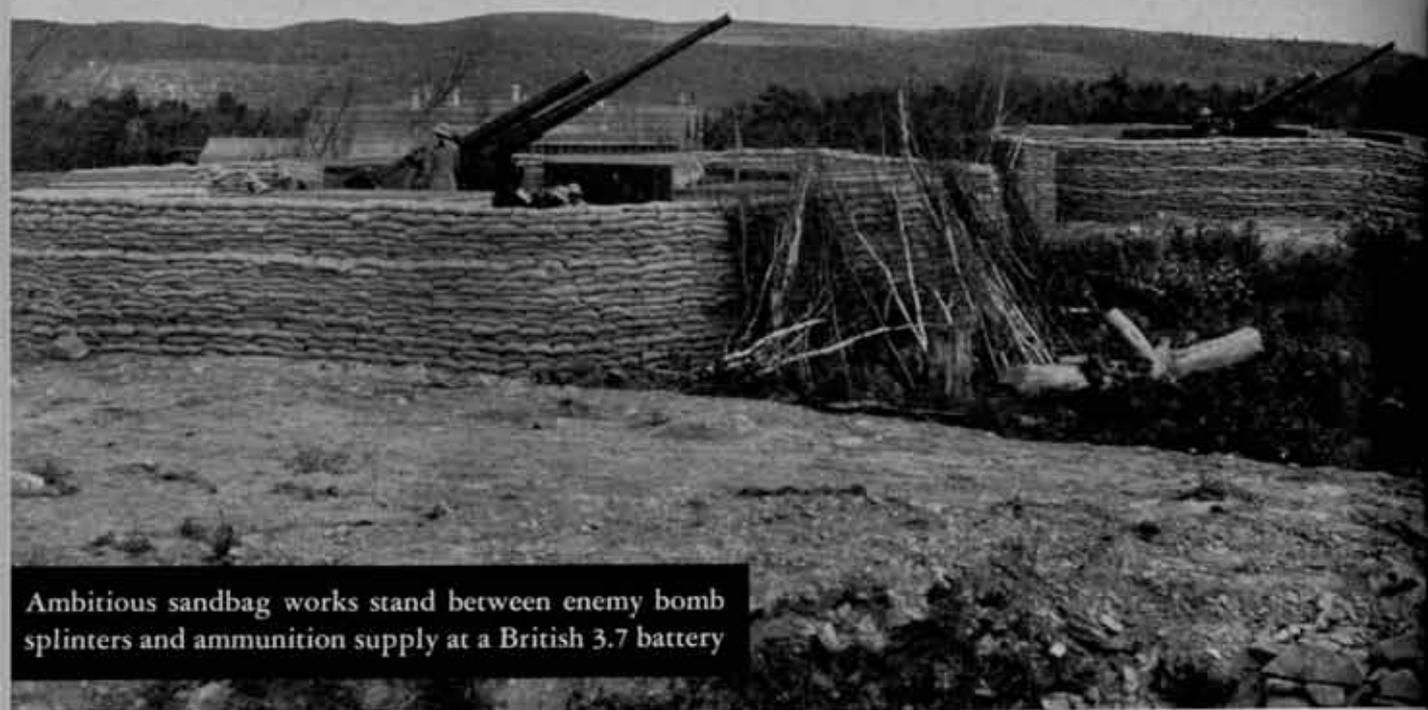
Finally arrives the day of the great test. All the last-minute details are checked; zero hour approaches; the battery commander climbs his tower; the tug-director announces that the target is now on its course; the range officer signals "Course OK." With a silent prayer the battery commander comments, "Battery right—one ranging shot—commence firing!" From there on it is in the laps of the gods.

After the last round the sweetest music I ever heard was the battery executive's, "Sir—ten rounds completed."

Following the critique conducted by General Gardner, and knowing that the shoot stood the test, I was reminded of what General Joseph P. Tracy told me when I was executive of Battery E of the 52d after it had completed the target practice that won the Knox Trophy in 1925—"Well, McCarthy, once in a while the Lord takes you by the hand."



PROTECTION FOR ANTI-AIRCRAFT



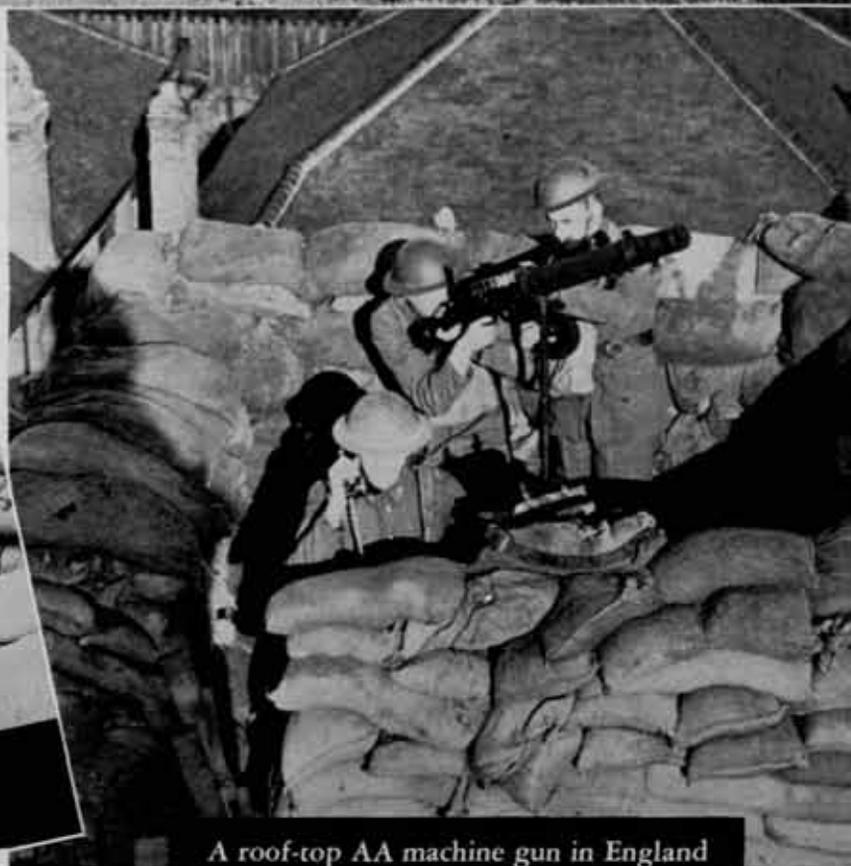
Ambitious sandbag works stand between enemy bomb splinters and ammunition supply at a British 3.7 battery



Concrete walls and metal turret protect a British AA crew "Somewhere in Kent"



AA machine gunner wearing anti-gas clothing



A roof-top AA machine gun in England

... machine gun protecting
an AA searchlight



A British gunner stands by with a machine gun
from the rear turret of a crashed Heinkel bomber



An Essex AA machine gun post

"88" sunk into a pit for protection



This German AA crew near Boulogne blends with the rugged landscape

Pack Up Your Old Kit Bag

By Captain John D. Stevens, Coast Artillery Corps

There are few of us who don't know the words and music of the old World War I ditty, "Pack Up Your Troubles,"—but many Reserve officers as well as some of our Regular and National Guard officers find little to smile about when they are trying to collect a kit for field service. This article is offered to aid in answering a few of the questions that plague the officer who is making up his kit—and to act as a reminder to the officer who is delaying his preparations to the last minute.

While there are Army Regulations and Tables of Basic Allowances for the various branches which cover the subject of uniform and individual equipment in detail, the average officer may not find these publications readily available. The purpose of these few paragraphs will be to list certain items of general use to officers of all branches, and to tell where they may be obtained.

In general, it is the purpose of the War Department to provide officers with most articles of equipment except uniforms and toilet articles. The officer may draw such items as bedding rolls, canvas buckets, web equipment, pistols, and pistol holsters from the unit to which he is assigned. The officer concerned signs a Memorandum Receipt for the articles drawn. The Memorandum Receipt is held by the appropriate supply office until the property is returned or disposed of otherwise in accordance with army regulations.

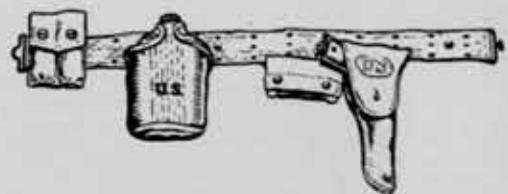
During periods of mobilization it is not always possible to obtain equipment from the units to which assigned because in many cases the units themselves are not fully equipped. However, I recommend that you do not buy such items as bedding rolls, canvas buckets and basins, pistols and pistol holsters, field glasses and other related equipment until you report to your unit and find out whether these things are on hand and available for issue. Shoes, leggins, and other such items

can usually be purchased at the Post Exchange or from the local Quartermaster Sales officer.

The following items of officers' web equipment may be procured from the Sales Officer, Jeffersonville Quartermaster Depot, Jeffersonville, Indiana:

Bag, field, M-1936 (formerly designated musette)	\$1.93
Strap, carrying, bag, field25
Suspenders, belt, M-1936, pr.	1.26
Belt, pistol or revolver, M-1912 (M-1936 not yet being manufactured)	1.12
Pocket, web31
Pouch, first aid20

In making purchases from the Jeffersonville Quartermaster depot, add five per cent to the total amount of the order for overhead charges. The delivery will be by express, transportation charges collect. Remittance must be in the form of a *certified* check drawn on a bank in continental United States, or by postal money order, made out to the Treasurer, U.S.A. The check or money order must accompany the order.

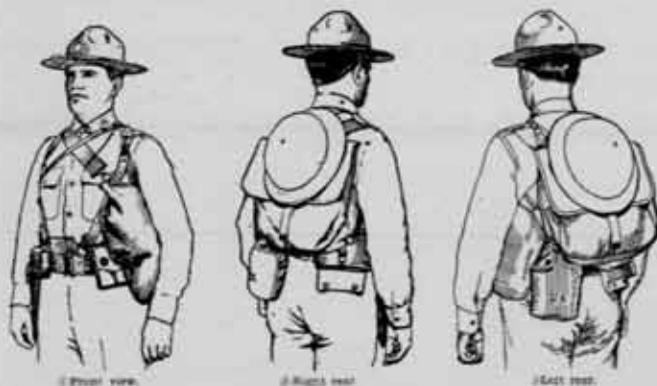


Pistol belt

Reserve officers on active duty or National Guard officers in Federal service must furnish a copy of the orders assigning them to such active duty or Federal service. Reserve officers in inactive status must furnish an indorsement of approval from their corps area commander. National Guard officers not in Federal service must furnish an indorsement of approval from the Adjutant General of their state.

The purchase of a sleeping bag may be very wise. There are times in the field when a warm, waterproof sleeping bag is the difference between comfortable rest and no rest at all. Prices vary from \$17.00 to \$25.00; they may be procured at most sporting goods stores. If a number of officers pool their orders, it may be possible to obtain a sizable discount.

For those who desire further amplification of the subject of personal impedimenta, *Army Regulations 310-60* covers the preparation and application of *Tables of Basic Allowances* for each arm and supply branch. In accordance with these regulations, the Chief of each branch prepares a *Table of Basic Allowances* for use



Dismounted officers field equipment

Table of Officers' Field Equipment

in that branch. The table includes a section devoted to equipment for officers and warrant officers. This section classifies the items listed as to whether they are required or optional; notes the basis of issue when the items may be drawn; and states the allowances for mobilization or peacetime use. These tables may be examined in appropriate supply offices and organization headquarters.

AR 600-35 covers the subject of prescribed uniforms, and AR 600-40 explains the wearing of the uniform. Section II of *Field Manual 21-15* contains diagrams showing just how the articles of equipment are worn.

These publications usually can be obtained from organization adjutants, or may be purchased from the Government Printing Office. Few things in the service are more changeable than uniform regulations, since they are constantly affected by improvements and new conceptions. All changes in regulations should be scrutinized carefully.

It is suggested that the young officer study the following table and that he prepare a list of items suited to his particular needs, and paste it in the top of the foot locker that he plans to take into the field or some other convenient place. Consultation with the adjutant will bring out information as to weight allowances in the field train (usually a foot locker and bedding roll), and of the commanding officer's desires concerning which items are to be carried on the person. With this list, properly prepared, there should be no hesitation about which articles to take along—or where they are.

Article	Purchase		Remarks and Approximate Cost		
	Issue	Required Optional			
CHEMICAL WARFARE EQUIPMENT					
Masks, gas, service	1	—	—		
ENGINEER EQUIPMENT					
Compass, watch	1	—	—		
MEDICAL EQUIPMENT					
Foot powder	1	—	—		
Packet, first aid	1	—	—		
ORDNANCE EQUIPMENT					
Glass, field	1	—	—		
Helmet, steel	1	—	—		
Pistol, .45	1	—	—		
Watch	—	1	—	(PX)	\$20.00 Suggest wrist type
QUARTERMASTER EQUIPMENT, CLOTHING					
Belt, web, waist, O.D.	—	1	—	(QM)(PX)	\$.20
Cap, field, Officers	—	1	—	(QM)(PX)	1.50- 2.00
Drawers, cotton or woolen	—	2	—	(QM)(PX)	.20- .25
Gloves, wool, O.D.	—	1	—	(QM)(PX)	1.00
Handkerchiefs, white, cotton	—	6	—	(QM)(PX)	.10
Hat, service, O.D.	—	1	—	(PX)	6.00- 8.00
(a) Insignia, collar (Branch and US)	—	2	—	(PX)	.50
Insignia, grade	—	2	—	(PX)	1.00- 2.00
Insignia, shoulder (Army, Div., etc.)	—	1	—	(PX)	.35
Leaves, shoe, extra	—	1	—	(QM)(PX)	.10
Leggings, canvas	—	1	—	(QM)(PX)	1.50
Necktie, black	—	1	—	(QM)(PX)	.50
Overcoat, O.D.	—	1	—	(PX)	20.00- 65.00
Overshoes	—	1	—	(PX)	1.50
Pajamas	—	2	—	(PX)	1.50
Raincoat	—	1	—	(PX)	4.00- 11.00
Shirt, cotton or flannel	—	2	1	(QM)(PX)	1.50- 2.50 (cotton) optional (flannel) is additional
					4.00- 8.00 (for marching) light wool suggested
Shoes, garrison	—	1	1	(QM)(PX)	7.00
Socks, cotton or wool	—	6	—	(QM)(PX)	.50
Undershirt, cotton or wool	—	4	—	(QM)(PX)	.20- .40
QUARTERMASTER EQUIPMENT—OTHER THAN CLOTHING					
Bag, canvas, field, M-1936	1	—	—		
Bar, mosquito	1	—	—		
Basin, canvas, folding	1	—	—		
Belt, pistol, M-1936	1	—	—		
Blankets, wool, O.D.	—	2	—		Sleeping bag may be carried on authorization of Commanding Officer.
Book, blank, memo, pocket	—	1	—	(PX)	\$.10
Brushes:					
Clothes	—	—	1	(PX)	.10
Hair	—	1	—	(PX)	.75
Shaving	—	1	—	(PX)	.25
Shoe	—	—	1	(PX)	.15
Tooth	—	1	—	(PX)	.25
Bucket, canvas, folding	1	—	—		
Can, meat	1	—	—		
Can, soup	1	—	—		
Case, canvas, dispatch	1	—	—		According to tactical assignment.
Comb, hard rubber	—	1	—	(PX)	.10
Coat, folding, canvas	1	—	—		
Cover, ranteon, demtd., M-1910	1	—	—		
Cup, M-1910	1	—	—		
Fork, M-1910 or 1926	1	—	—		
Housewife	—	—	1	(PX)	.25
Knife, M-1910 or 1926	1	—	—		
Locker, trunk	—	1	—	(Org)(QM)(PX)	7.00
Mirror	—	—	1	(PX)	.18
Pen, fountain	—	—	1	(PX)	3.00- 5.00
Pencil	—	—	1	(PX)	.10
Pillow case	—	—	2	(Org)(QM)(PX)	.40
Pillow	—	—	1	(Org)(QM)(PX)	1.00
Flap, tent, shelter, wood	10	—	—		
Poles, tent shelter	2	—	—		
Pouch, first aid packet	1	—	—		
Razor, safety, w/blades	—	1	—	(PX)	1.00
Roll, bedding, waterproof	1	—	—		
Shirts	—	—	2	(Org)(QM)(PX)	1.25
Soap	—	1	—	(PX)	.10
Soap, shaving	—	1	—	(PX)	.25
Spoon, M-1910 or 1926	1	—	—		
Suspenders, belt, M-1936	1	—	—		
Tags, Identification	2	—	—		
Tape for identification tags, yard	1	—	—		
Tent, shelter half	2	—	—		
Towel, face	—	2	—	(Org)(QM)(PX)	.25
Whistle, Thunderer	1	—	—		
SIGNAL EQUIPMENT					
Flashlight, TL-122	1	—	—		
Knife, pocket	—	—	1	(Org)	1.50
MISCELLANEOUS SUGGESTIONS					
Extra trousers, shoe and metal polish, matches, folding lantern w/candle, field message book, roll adhesive plaster, cleaning rags.					
(a) Insignia should be "snap on" type, rather than screw or pin type.					
(Org) Obtained from organization supply.					
(QM) Bought from Quartermaster Clothing Issue Room.					
(PX) Obtained from Post Exchange or Post Tailor Shop.					
NOTE: Where more than one symbol is shown, try to obtain item in order in which symbols are given.					



Dry Land Coast Artillery

By Colonel Charles G. Sage, Coast Artillery Corps

The tourist looked perplexed when he read the sign. He turned to a nearby soldier and remarked, "I know just enough about the Army to remember that antiaircraft is classed as Coast Artillery. All right. I left El Paso, Texas, three-quarters of an hour ago and here I am at what you people call an antiaircraft firing range. Where's the Coast?"

Well, to be perfectly frank about it, the nearest coast is roughly 400 miles distant, west by south, in Mexico, on the Gulf of California. The Fort Bliss Antiaircraft

Training Center Firing Range is situated in south central New Mexico on U. S. Highway No. 54, northeast of El Paso, Texas. You will recall that El Paso sits at the western tip of a peninsula of the United States that is sandwiched between New Mexico and the Republic of Mexico. Along Highway 54 it is nineteen miles from El Paso to the Texas-New Mexico boundary. Six more will bring you to the southeast corner of the firing range.

The main highway roughly bisects the wide valley



FORT BLISS ANTIAIRCRAFT TRAINING CENTER

In the immediate left foreground is the Fort Bliss Reception Center. From left to right the areas are occupied by the 202nd, 63rd, 260th, 206th, and 200th Regiments. Small light-colored square at extreme right center is area occupied by Headquarters Battery, 39th Coast Artillery Brigade (AA). Franklin Mountains in background.

that lies between the Organ mountains on the west and the Huecos (pronounced Wacos) on the east. The firing range is west of the highway, east of the Organs, and includes all the ground between the two. At its narrowest point from east to west the range measures eighteen miles. North to south it is twenty-eight miles between boundaries. At the widest place, east to west, there is a span of twenty-five miles. Northeast to southwest, the greatest dimension, is a distance of approximately forty-one miles. The acreage is better than 330,000.

How could such a vast domain be set aside for target range purposes? What kind of terrain is it? What vegetation covers the land?

This is ranch country, range land. Ninety-eight per

cent is either state land, or public domain administered under grazing acts. The remainder represents ranch holdings, normally just large enough to hold the headquarters house, water well and corrals. All of it is under lease for use as a firing range. The land is smooth-laid, typically rugged and Southwestern in texture and appearance. In all the miles of it only three or four 100-foot contour lines appear, winding across its face in the long, easy sweeps that designate gentle slopes and the absence of sudden change. There are no deep ravines, no defilading peaks. The average elevation approaches 4,000 feet and in this clear atmosphere the inexperienced observer will see but five or six miles between highway and mountains. It is eighteen miles.



The seacoast artilleryman must remember that on this firing range a target 10,000 feet above him is actually 14,000 feet above sea level. That odd 4,000 feet already has played some fancy tricks with ballistics, firing table data, etc., and some new "dope" undoubtedly will result from firing conducted on this range.

Vegetation is loosely-placed over the area and the mesquite and greasewood bushes are hummocked about with blow sand in true desert fashion. Cactus is found there, many varieties, and desert sage, and bear grass bunches in depressions where splashing summer rains gather to await their return to cloudland via the sun-evaporation route. And through it all there is the yucca, stately sentry that stalks desert reaches to produce, each spring, New Mexico's state flower.

Natives here say that yucca-growing land is of no use, but antiaircraftmen are proving the falsity of the statement. This particular part of Yucca-land is destined to become one of the nation's most effective training points for antiaircraft artillery.

Installations of simple, but ample, nature now are provided at two three-inch gun firing points. These places, naturally, will accommodate .50 caliber and 37-mm. fire when not in use by the big shooters. And there are two other firing points designed especially for use by the automatic weapons. The latter two may be used at the same time. The two three-inch points also may be used simultaneously. All four may be used at one time by automatic weapons. Two other firing points now are being arranged. They are miles from any of the others, and each may be used by any antiaircraft weapons at any time without regard to the others. The minimum field of fire at these points is roughly 120 degrees. Maximum at some points is about 180 degrees.

A three hundred sixty degree firing point, dream of all antiaircraftmen, soon will become an actuality at this range. Here it is expected that many of the all-around defense problems, formerly answered only in theory, will be given operating tests. Definite doctrines may come out of the use of this particular firing point, which is large enough to accommodate the gun batteries of two or three regiments and to provide each battery with all-around fire if safety precautions permitted this practice. Incidentally, a novel feature of the safety officer's duties is his freedom from worry. All he needs to consider as "vulnerable" in the field of fire is the personnel that may be at other firing points within the area.

Here also an entire regiment may be disposed—guns, searchlights, automatics—all and each at prescribed intervals and distances, to provide an area defense. Two regiments, or three, can be grouped to obtain that close defense formation which is accepted as proper. Has this defense ever before been practiced in this nation on on such a scale? Naturally, it has not because of the myriad limiting factors that arise at any waterfront firing range. What is learned here through the use of this firing point will mean much to all those who are interested in studying antiaircraft practices, procedures and doctrines.

At this place, for the first time in the history of antiaircraft in this country, the big guns may bang away 360 days a year (the other five are cloudy) using a 360 degree field of fire and never touch a human being.

Near this centrally-located firing point there is a dry lake-bed which provides a natural landing field roughly two miles wide by four miles long. It is ready at any time for use by planes and needs no work either to prepare its surface or to maintain it in satisfactory condition.

An excellent highway makes a direct connection between the Training Center and the southeast corner of the firing range. North and east from that point the same highway forms the eastern boundary of the range. At numerous points along the miles of this highway boundary motor vehicles may leave the highway and strike out across country. A government road, soon to be improved extensively, runs from the Training Center to the Fort Bliss Target Range, which forms the southwest portion of the Antiaircraft firing range.

Stationed at the Fort Bliss Antiaircraft Training Center and now using the range is the 202d Coast Artillery, the Illinois National Guard regiment that arrived here in mid-September and pioneered the whole matter for their own benefit—and the good of the organizations which followed. The Illinois boys had to take things the hard way for many weeks before they could move to their present comfortable homes on the eastern slope of Mount Franklin, six miles north of downtown El Paso.

Early in December the Regular Army 63rd Coast

Artillery arrived at the Training Center from its station at Fort MacArthur, California. This regiment is engaged in intensive training of cadres from which a number of other regiments will be formed. One of the new ones will be the 79th Coast Artillery which will be formed at this Training Center, probably in April.

Arriving in January and now playing a tune on the MTP are the 206th Coast Artillery, Arkansas National Guard; the 260th Coast Artillery, District of Columbia National Guard; and the 200th Coast Artillery, New Mexico National Guard, converted less than a year ago from a Cavalry organization. These regiments now are awaiting the arrival of hundreds of selectees, needed to bring the organizations up to strength.

On February 10, Headquarters and Headquarters Battery, 39th Coast Artillery Brigade were activated. These elements complete the tactical organization at the Training Center. The six regiments (including the to-be-formed 79th) will be grouped under control of this Brigade.

The Training Center comes under the administrative control of Fort Bliss headquarters, although it is separated geographically by about five miles. There is also a complete separation as regards conduct and control of training.

Troops at the Training Center are housed in similar areas, each containing twelve mess halls, thirteen bath houses, three motor repair buildings, a regimental warehouse, administration, recreation, exchange and infirmary buildings. Most of the areas also have frame guard

houses. Enlisted men are housed in pyramidal tents (301 per regimental area) mounted on board frames that provide seven-foot sidewalls. Officers have small wall tents on wooden frames.

All tents and buildings are heated by natural gas and have electric lights. Mess halls are equipped with gas ranges and commodious ice refrigerators. Mess halls and bath houses have automatically controlled, gas-heated hot water.

The buildings and some other items in the various areas were not complete when troops began to move in, but now are nearly all finished. Even the black-top road net which provides excellent communication routes throughout the center is nearing completion.

Summing it all up, this Training Center is offering to six regiments an equable climate, a range with unlimited firing points and, what is more important and interesting, an opportunity to test at an all-around firing point the presently accepted doctrines and principles of an area defense. Commodious motor park facilities are provided, with plenty of room left for expansion if and when it is needed. In fact, from the professional standpoint, there can be no complaint.

Here we are gathered from Illinois, the District of Columbia, Arkansas, New Mexico, and the many states represented in the 63rd Regiment. But you'd never know these boys hadn't been friends and neighbors all their lives. They distinctly DO mix—and like it. Western hospitality, which flows deeply hereabouts, has put its mark on one and all.



After the organization of troops, military discipline is the first matter that presents itself. It is the soul of armies. If it is not established with wisdom and maintained with unshakable resolution, you will have no soldiers. Regiments and armies will be only contemptible, armed mobs, more dangerous to their own country than to the enemy.

MARSHAL SAXE.

Driving in Open Terrain*

By Building Counselor Dischler

When we notice carefully the style of vehicle drivers in open terrain or when meeting obstacles, we are able to find a considerable difference in methods of driving. One sees drivers who master obstacles elegantly, seemingly like play and without apparent use of force; others, with great fuss and show, jump rather than drive over obstacles, only to get stuck again in other obstacles.

It is unfortunate that the daily press, and even the technical papers in many instances, like to print pictures that emphasize wild driving in connection with their reports of motor sport events. These pictures are very impressive and portray, for the layman, more convincingly the difficulties of the obstacles. However this sort of reporting smooths the road for false impressions of what constitutes good driving in difficult terrain. To jump a ditch with a motorcycle (figure 1) is coura-



Figure 1

geous and proves artistic mastery of the machine. From the technical standpoint of driving in open terrain it is absolutely wrong!

Technically and tactically correct driving in open terrain needs training in mastering all possible obstacles with due care for the equipment. It is clear that this cannot be done without occasional falls and damage. For this reason, training along these lines must start with the view to educate the driver to a point where he will reach his goal in spite of all obstacles. We cannot tolerate driving which will eliminate the vehicle by getting it stuck or damaged.

SHIFTING GEARS

The alpha and omega of all driving in open terrain is absolute mastery of the technique of shifting. The changes in the physical aspect of the terrain and the amount of tire grip on the soil force the driver to shift constantly. Since rolling terrain and wooded stretches limit visibility, and since obstacles often appear unexpectedly, shifting must be done very quickly. Immediate recognition of the situation, the decision to shift

and the execution thereof must follow each other without hesitation.

In order to be independent from pure luck in shifting, the driver must know at once just how to shift. Shifting into high, for instance, with a short or long pause between gears; shifting into low with little or much intermediate gas; knowing whether or not to use the brakes with vehicles equipped with coupling brakes—all are considerations. It is stressed that shifting on a downgrade is forbidden, especially if the grade is longer than a few meters or is very steep. On the other hand it must be remembered that in any open terrain there are only up and down grades, but never a mathematically correct plain. Even a plain, or a seemingly-even side road is composed of a series of uneven parts which, because they are too slight, do not influence shifting.

RULES FOR SHIFTING

REASONS	for shifting into high	for shifting into low
Great speed needs	long pause when shifting	much intermediate gas
Smaller speed needs	short pause when shifting	little intermediate gas
Cold oil needs	short pause when shifting	much intermediate gas
Downgrade needs	short pause when shifting	much intermediate gas
Even road needs	normal	normal
Upgrade	vehicle	
	with coupling brakes	without
	clutch pedal all the way down	shifting without gear grinding al- most impossible
		little intermediate gas
REMEMBER—Vehicles with coupling brakes: Never release entire coupling when shifting into high. Always release entire coupling when shifting into low on upgrades.		

It is generally wrong to start shifting when encountering an obstacle. The beginner especially should shift before getting to it. The gear which is to get the vehicle actually over the obstacle must be used.

ON BEING STUCK

When a motor vehicle becomes stuck in an obstacle, one or more of the following conditions is the case:

1. the driving wheels spin
2. the engine is being killed
3. aside from the wheels, other parts of the vehicle touch the obstacle.

From a purely technical viewpoint, spinning of the driving wheels occurs when their driving power becomes greater than their grip on the soil. On the other hand, the motor is killed when the driving power of the wheels becomes less than the driving resistance.

As the motors of all army vehicles are usually of generous proportions, the mastering of any obstacle during correct driving becomes more a problem of spinning of the wheels than of killed motors.

*From *Die Panzertruppe*, May, 1940. Adapted from a translation by Fred F. Fletcher, Courtesy of the *Quartermaster Review*.

It is known that three factors aid the driving wheels to grip better: greater pressure on the road, larger wheel surfaces, and greater coefficient of friction of the road surface.

To obtain more pressure on the road, the manufacturer takes care to place the largest possible weight on the driving wheels. It is a technical fact that the weight arrangement upon rear or front wheels undergoes a change when the vehicles are on a grade. As figure 2

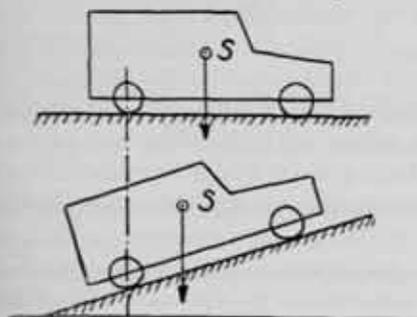


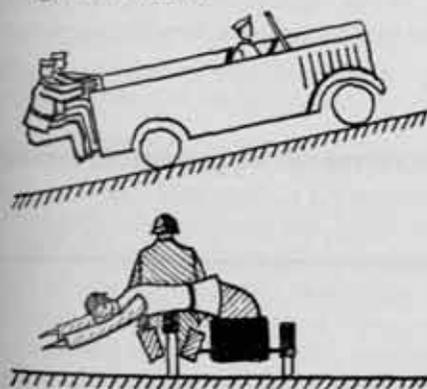
Figure 2

shows, a motor vehicle's center of gravity shifts toward the rear axle on an upgrade—the steeper the grade the nearer to the rear axle. For this reason the rear axle carries an additional load which equals the load of which the front axle is being relieved. Therefore the load of the driving axle of a vehicle with rear-wheel-drive increases fundamentally on upgrades, and decreases in front-wheel-drive vehicles. Thus it may happen that a driver who has a front-wheel-drive vehicle can get up a mountain only in reverse.

This last-mentioned fact—the shifting of the load to the rear axle—is the reason why front-wheel-drive vehicles in spite of their superiority in mastering step-like obstacles and affording better visibility on curves, have not been adopted by the Army.

The ideal case, in which the entire weight of the vehicle has been used for an equal distribution over all wheels, and thus has achieved the greatest possible traction, has been realized in the four-wheel-drive vehicle.

When the wheels start spinning the driver will often try to add greater weight on the wheels and thus get better traction. This is often successful. Examples are shown in figures 3 and 4.



Figures 3 and 4

Aside from the pressure of the driving wheels on the road, traction also depends upon the friction coefficient between wheels and soil. This depends either on the road surface or on the kind of tires used. Slippery surfaces, such as wet loam, damp grass, ice, smooth snow, etc., have a low coefficient. Within certain limits the coefficient can be increased by the use of non-skid treads, or with chains.

Aside from this, the extent of the surface grip depends a great deal on the density of the road surface. It is quite possible that the road surface may afford a good grip for the wheels, but if this surface is displaced by the wheels it can offer but little traction. This holds true for a road surface which is not permanently connected with the foundation. A typical, but necessarily theoretical example of such a case is loose gravel which has been thrown on ice. Even comparatively little driving power of the wheels suffices to dislodge the gravel.

In actual practice, when driving in changing terrain, surfaces offering little resistance but satisfactory grip would be stretches of loose, dry sand with sparse growth lacking deep roots, or swampy subsoil which is covered either with dry grass or with dry leaves. When these comparatively good surfaces are destroyed by spinning wheels, the driving wheels will get down to the subsoil which has a still smaller friction coefficient. Then there is danger that the spin of the wheels will be increased.

Of all motor vehicles, the tank has the greatest grip on the soil. In the tank, all the desirable traction factors are present: the entire weight of the vehicle rests on the driving chains, the gripping surfaces of the tracks assure a high friction coefficient, and demand on the road surface for stability is little since the friction exerted by the treads is distributed over a large part of the surface.

The dreaded spinning of the wheels occurs when their driving power exceeds their grip on the soil. On slippery soil, which favors a spinning of wheels, the power of the driving wheels must be decreased.

When the wheels threaten to spin, stepping on the gas and driving in low gear should be avoided.

Short stretches with low soil resistance, such as wet meadows, swamps, snow, ice, etc., also sand, are best traversed by taking a run and driving through quickly, but not in too low a gear. On the stretches where there is danger of sliding and skidding, little gas, and thus low power, are indicated.

Longer stretches should be conquered in the highest gear and with little gas. Even feeding of the gas is essential. Unintentional acceleration might cause increased power of the driving wheels and start them spinning. In that case the gas should be cut off and the clutch released. If this is not done, continuous spinning of the wheels will result in the driving wheels sinking deeper, and if the road surface is destroyed the wheels will sink to the subsurface which is far more slippery than the surface itself.

When the wheels start to spin, it is practical to reverse and place the driving wheels on more solid soil . . . then try to pass the dangerous place by taking a lead. Swampy ground does not permit hesitation because the vehicle will continue to sink.

If a vehicle gets stuck in sand, snow, or a shell hole, weaving the vehicle back and forth will help. Reverse as far as possible, drive forward immediately, then back up again, etc., and repeat as often as necessary until the vehicle has made a trail for itself upon which it can get out with a good surge. See figure 5.

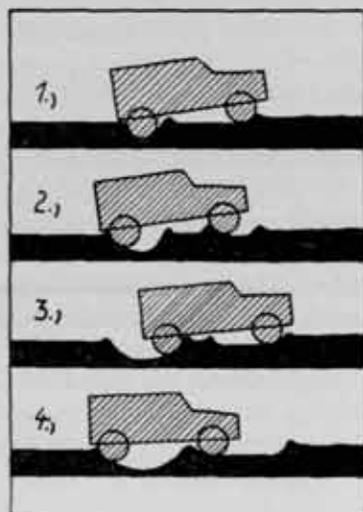


Figure 5

KILLING THE ENGINE

Another, not too rare, occasion for getting stuck is killing the engine. It happens when the driver has not fed enough gas, or has been driving in too high a gear.

Seen from a technical viewpoint the motor is being killed when the driving power, imparted by the motor through the couplings and shafts to the driving wheels, becomes smaller than the driving resistance. Driving resistance is especially severe on plastic surfaces such as deep sand, in tight curves, and on upgrades.

Experience indicates that loose sand and upgrades are responsible for most killed motors.

To start again on a plain, the vehicle should be brought back in reverse a short distance on its original trail.

PROCEDURE ON UPGRADES

Motor vehicles which get stuck in an attempt to climb on upgrade should be taken back in reverse to a position with less slope. Let's consider the driver's actions on an upgrade, especially when he does get stuck. The fundamental rules are the same for drivers of all sorts of motor vehicles—additional and special rules are cited for the motorcyclist and his sidecar passenger.

Terrain permitting, passenger cars will usually take an upgrade with increased velocity. The vehicle with rear tractor tread will take it with power alone; the motor truck primarily with power but without sacrificing velocity.

The beginner would do well to shift early to the gear in which the vehicle can actually get over the grade. Shifting while on the grade requires experience, and is dangerous. Should it be impossible to shift, damage to the shafts or other important parts may occur.

When the vehicle threatens to get stuck, it is no time for nervousness—correct measures quickly taken are in order. This is especially true on steep grades. Even before the vehicle stops the driver must be able to judge quickly whether or not the brakes will be able to hold it.

If the grade is not too steep, the brakes will usually suffice. In that case, just before the vehicle stops, shift into neutral and set the brakes—this will prevent killing the motor. Following this, put the vehicle into reverse and back down the grade. Initiating the backward movement means to take off both feet almost simultaneously and without hesitation, from brake and clutch pedals, the right foot a fraction of a second before the left one.

If the vehicle does not roll, then the grade is not too steep and it would be correct to use the starter without shifting again.

If the grade is very steep and one has to consider that in spite of brakes the vehicle would roll back, the motor should be cut off. After that, the vehicle can roll back while it is still in forward gear. This is technically correct; it does not hurt the motor.

If a vehicle cannot negotiate a grade, it would seem advisable to shift from forward to reverse in the moment when the upward movement ends and the downward movement starts. In order to negotiate this shifting maneuver in the split second available, superior skill is required. Even the best of drivers might not be able to do it. For this reason this method cannot be recommended, and has a theoretical character only.

In any case, avoid letting the vehicle roll backward while the driving wheels are not connected with the motor. Every movement of the vehicle should be in some gear.

Never permit a vehicle to roll backward while it is in forward gear with the clutch disengaged and the motor running. At the beginning of the retrograde movement the driver will be tempted to take his foot off the clutch. What happens when the crankshaft is suddenly pulled into an opposite rotation needs no elaboration.

Going down a grade does not demand too much from a driver.

One goes downgrade at the slowest possible speed, checking occasionally to be certain that the front wheels are straight. Hold the steering gear steady. Use the same gear that would be used to climb the hill. The left foot is kept away from the clutch pedal. By doing this the beginner will resist the dangerous temptation to shift into neutral. Leave breaking to the motor. Foot or handbrake will be used but seldom—only for "snubbing."

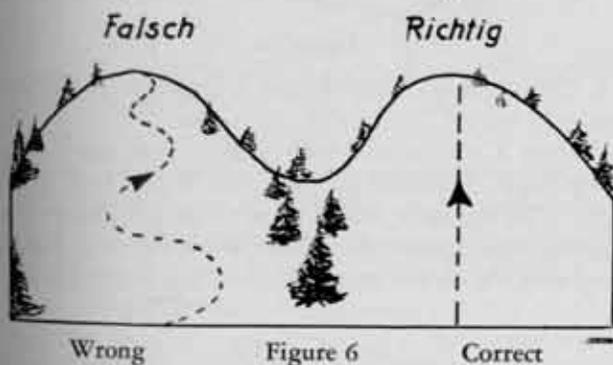


Figure 6-A

If the vehicle slides in the direction of the movement, or slides sideways, take your foot away from the brake, be certain the wheels are straight, and feed a little gas. Thus, the wheels will start rolling again.

MOTORCYCLES ON STEEP GRADES

Generally a motorcycle, like any other motor vehicle will try to ascend a steep grade in as straight a line as possible. The rider will fix his vision on a mark high up, and will drive straight for that mark in a straight line, disdaining zig-zag courses. In this, even more so than the driver of a motor car, the motorcyclist will take advantage of his momentum. See figure 6.



Wrong

Figure 6

Correct

In a case where the motorcyclist cannot negotiate a hill because the motor has been killed or the rear wheels have started to spin, the main point is to hold fast to the machine. Whenever possible, the rider should remain on the saddle, both hands on the handlebars, the handbrake in use, the right foot on the footbrake, the left foot on the ground. Only in this position, which is the technically correct one, will the rider be able to prevent the machine from rolling backward.

Fundamentally, when stopping on a slope, the motorcyclist must use the right foot as the brake foot, the left one as the prop foot, on machines on which the brake is on the right side. The following notes were written with machines with right side foot brakes in mind.

If for any reason the rider uses the right foot as a ground support, he cannot make use of the footbrake. On a slope he thus invites the danger of being bowled over by his downward-rolling machine. He is endangering himself and his machine as well.

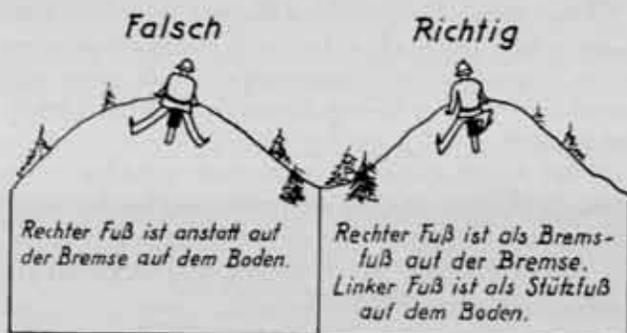


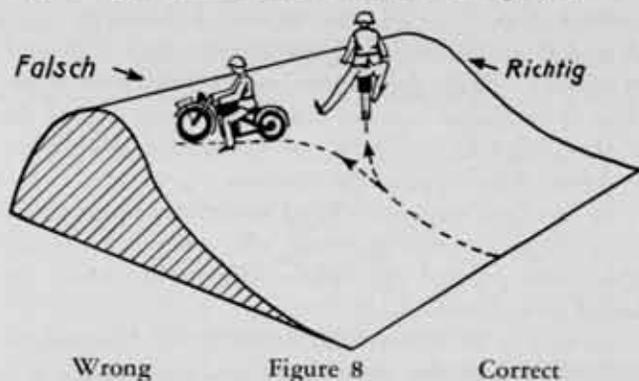
Figure 7

Wrong: Right foot on the ground instead of on the brake

Correct: Right foot on the brake; left foot as "prop" on the ground

Figure 7 shows correct and incorrect behavior of a motorcyclist on an upgrade.

Before stopping on a slope, the motorcyclist will turn the wheel as far as possible to the right, thus placing his machine on a gentler grade where it will not roll back so easily. At the same time the rider will retain the ability to place his left foot *upward* on the slope and to keep his right foot on the footbrake. See figure 8.



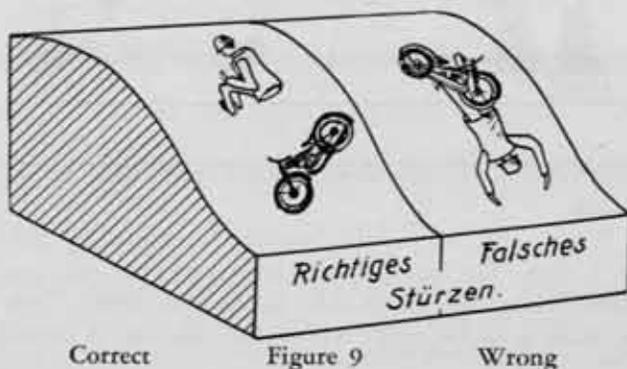
Wrong

Figure 8

Correct

Incorrect, or much less practical, would be a turn to the left just before stopping. In that case the rider would place the right foot on the ground, upward on the slope—thus he cannot use the footbrake—or he supports himself on the left foot and in that case the machine will tip sideways into the valley.

In both cases he will have difficulty holding the machine and it will tumble with him easily. The following rules are obvious: when stopping on a slope, the prop foot should be mountainward; the brake foot valleyward and upon the footbrake.



Correct

Figure 9

Wrong

Observation of this rule will save the rider from many a fall. Generally a fall with a motorcycle, even on an upgrade or on a steep slope, is not necessarily dangerous. Correct falling, however, must be learned. See figure 9.

A fall is dangerous when the rider tumbles downward. Still, most injuries are not caused by the actual tumble of the machine, but by the damaging propensities of the machine which follows and lands on the rider.

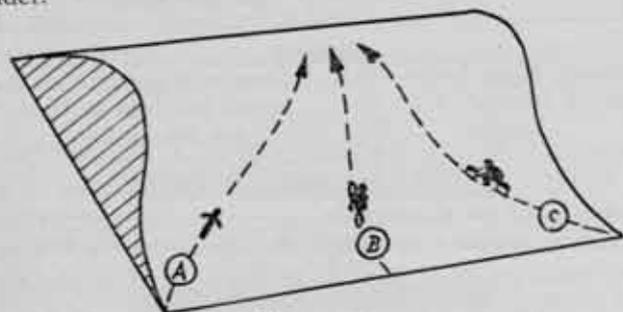


Figure 10

If the slope, as shown in figure 10, permits of several routes to ascend it, then according to what has been written above, it is clear that the routes chosen by riders A and B are technically more correct than the route of driver C. If the drivers are unable to make the slope, then A and B can use the prop foot to stop toward the slope. Rider C's prop foot is valleyward, and when stopping, stands below the machine.

In any case, the motorcyclist who cannot negotiate a steep slope observes generally the same rules which have been pointed out before when other motor vehicles were discussed.

As long as the motorcyclist is able to stop his machine on a slope with the aid of hand and foot brakes, it is advisable to disengage the clutch before stopping without killing or stopping the motor. Thereafter, he permits the machine to roll backward a bit, steering it so that it will finally point into the direction of the descent. See figure 11, route 2. Following that, he

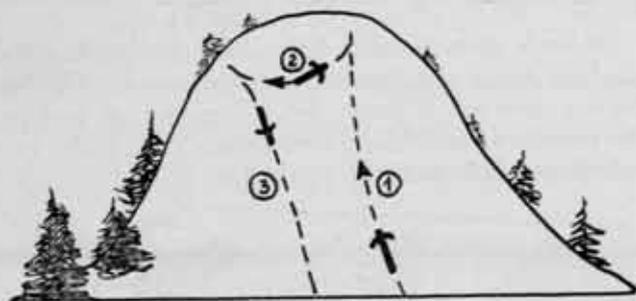


Figure 11

drives down with the same forward speed used for the ascent.

If for some reason the motorcycle cannot be held on a slope, the motor should be stopped and the machine laid gently on its side, facing the slope. Then, by pulling on the front wheel, the machine is turned

about to point the front wheel downward. Only then is the machine to be lifted up, and the descent to begin. The motor will be started by the impulse of the rear wheel.

MOTORCYCLE WITH SIDECAR

Before the sidecar rider begins practicing his part on a steep slope, he must be thoroughly familiar with the peculiarities and dangers of the motorcycle itself. He must know the power factors to which the rider is subjected on curves, during increased or decreased speeds, or when braking. Even the occasional tendency of the sidecar to ride high should no longer surprise or endanger the sidecar driver. In a word, he must first master the motorcycle.

If the driver ascending a slope is not bound to any particular route, he should drive in a manner that assures that the sidecar is never placed above the cycle, or the whole thing may keel over. According to figure

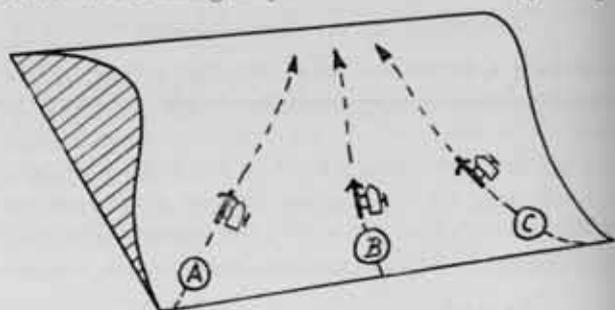


Figure 12

12, the routes of riders A and B are well chosen; the route of rider C is incorrect or worse.

When a motorcycle with sidecar gets stuck on a steep slope, it should be permitted to roll back somewhat with the front wheel turned out, but always in a manner which places the sidecar below the cycle. Figure 13 shows the correct manner.

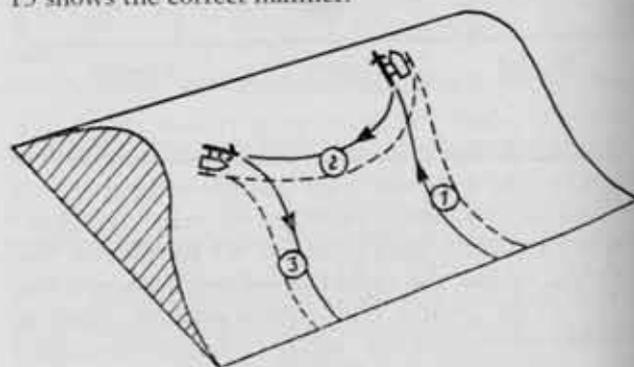


Figure 13

Figure 14 shows an example of incorrect reversing, since the sidecar is above the cycle.

In general, other situations affecting motorcycle-sidecar riders are handled according to the same principles as other motor vehicles.

SETTLING DOWN UPON OBSTACLES

A motor vehicle cannot free itself from an obstacle in every instance by the simple process of reversing and

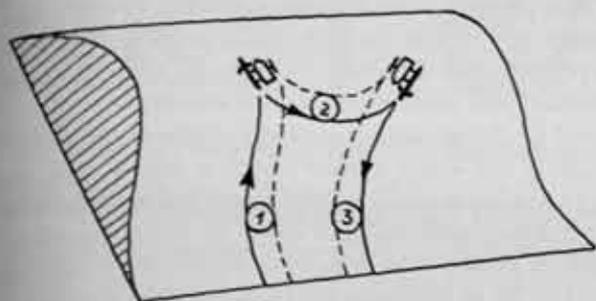
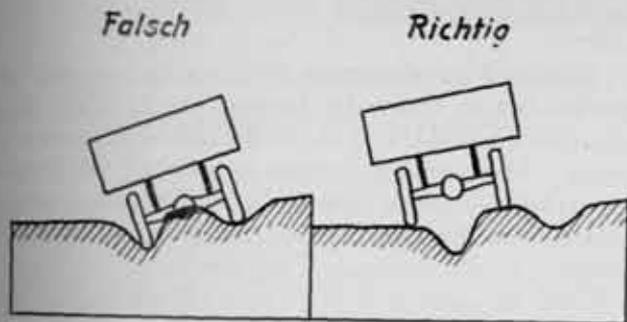


Figure 14

then choosing a better approach or a better method of driving. Often shovel and jack must help to free a vehicle. Being familiar with the limitations of his vehicle the driver must attack difficult obstacles in a technically correct manner, but must always avoid obstacles which cannot be overcome.

Aside from this, the shape and the measurements of any vehicle set a certain limit to its usefulness in open terrain. Under certain conditions, clearance of the vehicle from the ground and the overhang fore and aft can limit a vehicle's usefulness.



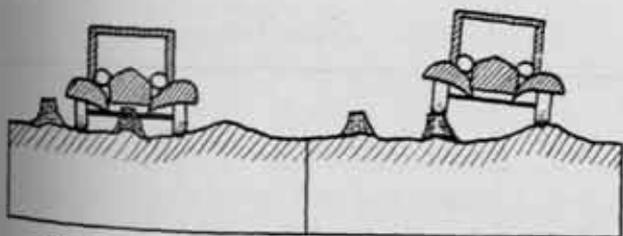
Wrong Figure 15 Correct

The vehicle shown on the left in figure 15 sits on its differential housing. If the method of driving is wrong, there is not enough clearance over the ground. A good driver will not drive in the ruts, but parallel to them, and will therefore always keep his wheels on the higher parts of the ground.

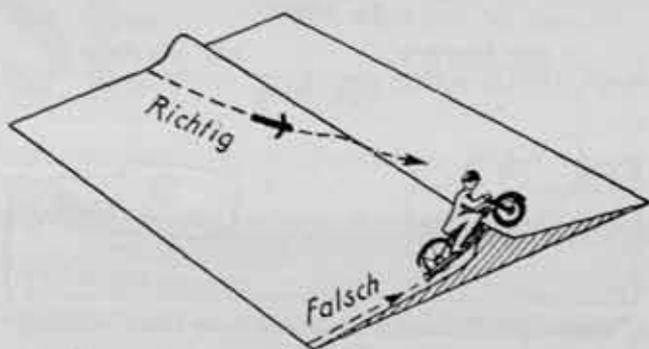
A stump cannot get out of the way, but a driver may. If there is no possibility of getting around the stump, then one drives over it with the wheels, rather than by trying to straddle it. This method is better than straddling, with the possibility of a ripped-off front axle. See figure 16.

A motorcycle going over a fold in the ground with a

Falsch Richtig



Wrong Figure 16 Correct



Correct Figure 17 Wrong

narrow back, hasn't enough clearance. The oilpan or the transmission drip pan will come to grief. See figure 17. But—by taking this obstacle at an acute angle it will often be possible to get over it.

A motor car which tries to cross a fold in the ground with a narrow back will easily get stuck just on top of it. The diagonal approach is far better, even if the possibility of tipping is to be taken into consideration. See figure 18.

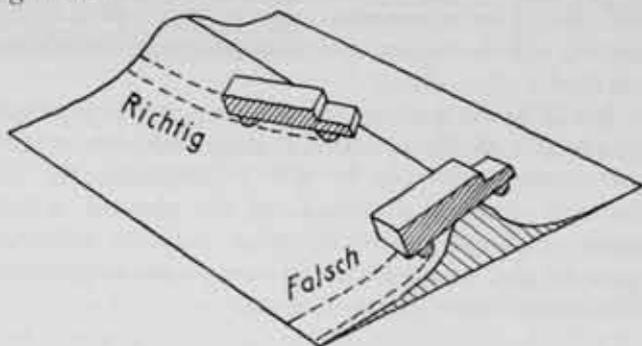
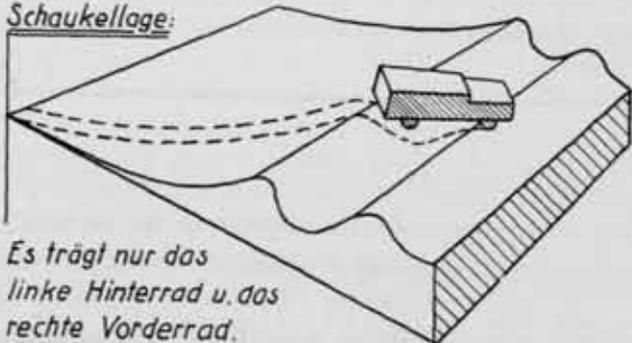


Figure 18
Left: correct; right: incorrect

When approaching diagonally, avoid a cradling position, in which the vehicle will rest on only two wheels. See figure 19.

Schaukellage:



Es trägt nur das linke Hinterrad u. das rechte Vorderrad.

Figure 19: Cradling position. Only the left rear wheel and the right front wheel carry the load

In an attempt to cross straight through a depression, the overhang will often interfere. Figure 20 shows how a truck would rest on the ground with the rear overhang on a downward course, and with the front overhang on an upward course. It is often possible to conquer such obstacles by attacking them from an angle. By slow and careful driving the temporary distortions to



Figure 20: Examples of interference from overhang

which the chassis will be subjected may be held within reasonable bounds.

It can be seen that many obstacles can be mastered by a diagonal approach. That does not mean that we advocate the fundamental technique of oblique or diagonal driving. Generally speaking, this sort of driving is a necessary evil with all motor vehicles, excepting only the motorcycle. Distortions of chassis and frame, and with it those of the whole body, and great axial stress of the wheel bearings cannot be avoided. The vehicle will also show a tendency to slide downward with its driving wheels, and on a very steep slope it might even tip over.

Just as in the question of whether or not to approach an obstacle perpendicularly or diagonally, the terrain driver must generally be able to recognize the advantages and the drawbacks of his planned action, must weigh one against the other correctly, and then must be able to translate and convert the impressions thus gained into practical action.

The performance of a motor vehicle in open terrain lies entirely within the technically possible. The degree of performance inherent within the vehicle—its construction and motive power, the amount of traction allowed by the ground, the form and size of the obstacles all draw the limits within which a vehicle may move over the terrain itself. A poor driver will always overstep these limits and will get stuck or otherwise come to grief. A good driver will, even within these limits, get the last bit of performance from his vehicle.

Driving in open terrain, in this sense, becomes an art which makes extraordinary demands upon the driver. Aside from thorough technical knowledge and excellent driving, it demands also positive judgment of the vehicle's limitations, immediate recognition of the obstacles and the possibilities of taking them, quick decisions at all times—and a good deal of courage, especially from the motorcyclist.

Quickly as those decisions must be made, it is often better to "weigh before daring." The best driver is not the man who runs into obstacles blindly, but the man who correctly recognizes unsurmountable obstacles as such and then will know how to overcome them, tactically.

To school the driver not only to conquer small obstacles, but to widen his horizon for the wide open spaces is the problem of the motor-technical instruction course. Thus, driving in open terrain will not remain an exclusively selfish purpose, but will become a means to heighten the mobility and the offensive power of troops.



In the practical art of war, the best thing of all is to take the enemy's country whole and intact; to shatter and destroy it is not so good. So, too, it is better to capture an army entire than to destroy it, to capture a regiment, a detachment or a company entire than to destroy them.

SUN TZU.

FIRST BASE ★★★★★Anonymous

Newfoundland happens to flank our North Atlantic approaches, and to block the entrance to the St. Lawrence River. Through this accident of position, the "Great Island" has become a keystone of Hemisphere Defense. . . . At this point, almost any Monday-morning Mahan can take the ball and, quoting strategic distances, harbor capacities and the like, tell you the significance of it all. . . . That's all very well; but meanwhile, you (or I) may be getting, or may be just about to get, your (or my) orders to the new Frontier of Defense. If that's the case, this moment may find you less interested in strategic distances than in the price of beans in St. Johns. That's how it was with me, and this little piece is the result.

Chamber-of-commerce statistics are as abhorrent to me as to you; but I see no way of avoiding a few of them. Newfoundland is not a part of Canada, but is a Crown Colony—and the oldest C. C. in the Empire, at that. The Newfoundlanders claim that their island was discovered by Cabot on his first trip in 1497 (the Labradorians say different, but let's stay out of family quarrels). Newfoundland is the tenth largest island in the world, and has a population of close to 300,000. That makes it about as large as Ohio in area, and about as sparsely populated as Utah. The terrain is varied: most of it is rough and rocky; some of it is boggy; and about a third of it is wooded. The coastal plain is narrow, deep water generally lying close offshore. The coast itself is multi-indentated, but there are few sizable harbors. The precipitation averages perhaps fifty inches a year (a trifle more than in New York)—distributed so evenly over the months as to make the island something of a hydrological curiosity. You can reach Newfoundland by boat from New York or Boston (perhaps touching Halifax *en route*), or you can fly there (and that's the way I hope I go). Incidentally, you probably think you're headed for Newfundlund. But in Halifax you'll hear the Canadians calling it NewFOUNDland; and, finally arrived in St. Johns, you'll find you're in Newfoundland.

Newfoundland is shaped like an equilateral triangle. From the southeastern apex of the triangle there dangles (from a neck of land twenty miles wide) a sprawling mass of land known as the Avalon Peninsula. Here is a case of the tail wagging the dog—or of the peninsula wagging the triangle. The Avalon Peninsula is the nerve center, and by far the most important part of Newfoundland. On the Peninsula is St. Johns, capital of Newfoundland, largest city (by far) in Newfound-

land, and (attention St. Augustine) "oldest city in North America." You'll get to know St. Johns well, since the bases and training areas to which you might go are on the Avalon Peninsula.

The Newfoundland currency system is tied to the Canadian system, which is to say that one dollar American gets you one dollar ten cents Newfoundland. But don't let that fool you. By and large you'll find your pay reaching short of where it reached in America. The unfavorable margin will be small for most necessities,

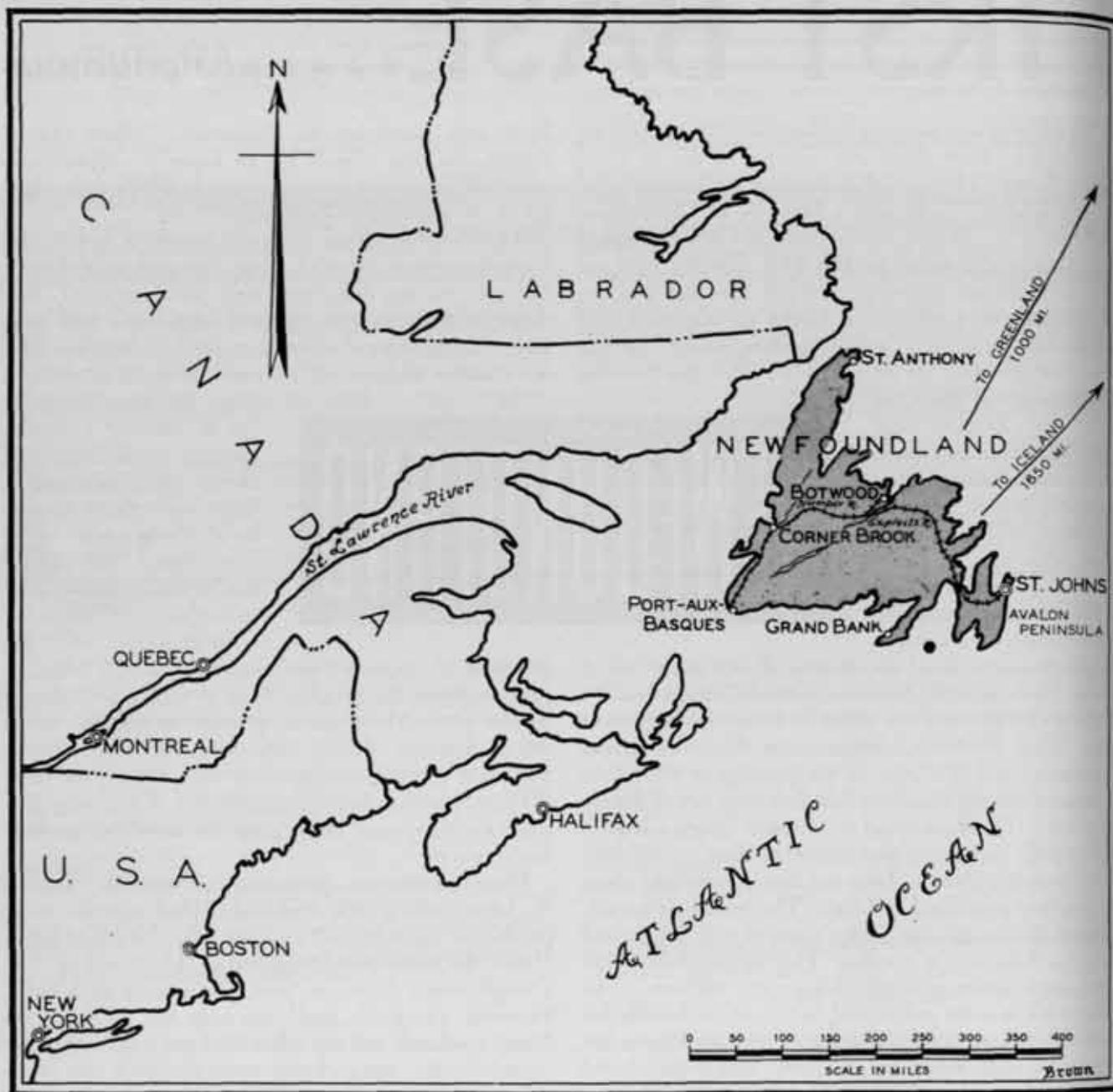
large for most luxuries. As a random example, gasoline will cost you thirty cents per gallon (and don't think of this as a wrong steer when they charge you thirty-five cents for an *imperial* gallon).

Incidentally, it's the purchase of the everyday things which will bring to your attention the peculiar form of taxation employed by the state. There are no property or income taxes, the chief source of state revenue being import duties. So, when you pay twenty cents for a fifteen cent can of beans, you may have the satisfaction of knowing that you have done your bit to keep the wheels of government turning.

From this distance, the housing situation in and near St. Johns looks a little confused. Hotel rates are comparable to rates in this country: the Newfoundland Hotel (St. Johns' best) is quoted at "\$7.00 and up" for a single room, American plan, presumably with bath. However, the guide book lists only five hotels in all Newfoundland; and the other four are small ones. As regards houses, one authority states that your rent probably will be no greater than you're accustomed to paying, but that you won't live in such comfort (i.e., the plumbing may be ancient, and so on). Another authority confirms the statement that rents will be reasonable; but somewhat contradictorily he adds that there will be no houses available. Still another authority has a friend who is alleged to have snapped up the last modernly-equipped house in St. Johns. I am forced to conclude that after the confusion subsides you will find the housing situation in St. Johns at least a shade worse than you find it at Monroe.

Well, for one thing, you won't get as cold in Newfoundland as you think you will—especially if you're one who always has associated thoughts of Newfoundland (which actually lies farther south than England does) with thoughts of ice caps and the arctic. The Newfoundland winter is long (November-May), but it is not severe (zero temperature is a rarity). There is

NEWFOUNDLAND



some snow, enough to be inconvenient, but not enough to please you if you take your skiing seriously. Meanwhile, the summers also are temperate, the thermometer seldom showing as much as eighty-five degrees, and the nights being always cool. There'll be an occasional fog, especially in the spring, but clear weather is the rule (it's the Newfoundland Banks, 200 miles south, where the transatlantic steamers encounter the perpetual fogs). If you are a run-of-the-mill ragweed hay fever sufferer, you'll find Newfoundland just what the doctor ordered (but Heaven help you if you're allergic to fish).

According to the travel agencies' come-along circulars, Nature bestowed natural resources on Newfoundland with a lavish hand. My own researches into the matter lead me to believe that the hand of Nature was

not quite so lavish as the pen of the press agent. Newfoundland is an important producer of lead and zinc, and it has fabulous deposits of iron ore. However, there is no coal to complement the iron ore, and there is little or no oil. Perhaps one-third of the island is wooded, but the better stands have been exploited, and now most of the wood is spruce or birch, fit only for pulp. Newfoundland thus is a big producer of newsprint, with two great mills in operation. In general, only the river valleys and the narrow coastal plains are suited to agriculture, and even there the soil is thin and none too fertile. Of course, there are alleged to be undreamed of riches awaiting discovery in the interior of the island, but ever since they failed to strike oil near my hometown I've taken such allegations about any place with a grain of salt. In any event, it seems clear that such

resources as the island has have not been fully nor intelligently exploited. Our island has been to some extent a step-child of empire, getting few of the breaks and many of the bumps.

As a matter of fact, the great resource of Newfoundland has been the codfish which abounds in the surrounding waters. This availability of codfish has not been an unmitigated blessing, for it has saddled the island with a fish-economy, and a one-fish economy at that. At least half the population of the island depends on "the fishery" for livelihood, and an uncertain livelihood it is. Some years the price is fair, but most years it is extremely low. As it adds up, the fishermen have a hard time of it, most of them being very poor indeed. They seldom see hard money (although there are some who grossed as much as \$900.00 annually during the legendary boom years in the last war). Many of them operate on credit, and most of the time are in hock to the local purveyor of supplies (who in turn probably is in hock to one of the large supply houses in St. Johns—everything in Newfoundland, even fisherman credit, getting back to St. Johns eventually). The situation is reminiscent of share-cropping—without benefit of AAA. You will find the intelligensia in St. Johns lamenting the system's evils, and talking vaguely of movements to agriculture (but no fisherman is ever so poor that he resorts willingly to farming).

You will find these people of the island interesting. Most of them are of English or Irish descent, with some French in the west, and more than a few negroes in St. Johns (shades of slave-running days, when it was any old port in a storm). If you get out among the small villages along the coasts, you will marvel at how completely peoples living side by side have kept intact their own habits, speech, and other national characteristics.

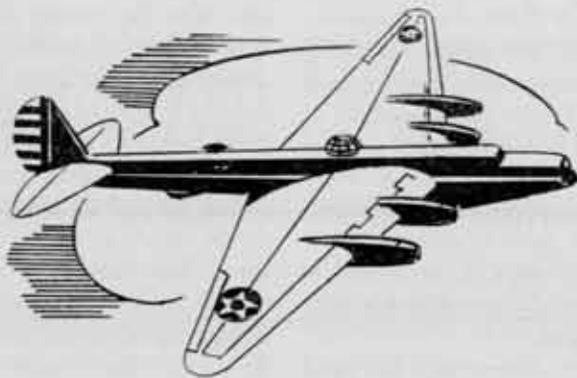
From the sportsman's angle, the outstanding attraction of Newfoundland is another fish—in this case, the

salmon. Here again the travel pamphlets go into superlatives and this time I'm inclined to string along. The fishing season begins on May 1 and ends on September 15. During May and June the salmon will be swarming in from the Atlantic, making their way up the rivers to the spawning grounds. During the latter months of the season, they will be lurking like trout in the pools between the rapids. If you're anything of a trout fisher, you'll do all right with the Newfoundland salmon. You'll find him a fish worthy of your talents.

One popular oil company map of Newfoundland shows the interior of the island sprinkled with sketches of noble-looking caribou and moose, with here and there a hunter taking aim. Actually, the game situation over the island is bad, largely as a result of indiscriminate killing during past years. Rigid protective measures are now in force, and the game situation may be expected slowly to improve.

The matter of communication on the island is best understood by reference to the map. As indicated there, the only way you'll ever cross Newfoundland is by walking, by flying, or by railway. The "Newfoundland Railway" is a state-owned narrow-gauge affair which connects the Avalon Peninsula with Port aux Basques (the gateway to Canada, on the southwestern corner of the island) by way of the "industrial areas" (pulp mills) along the Humber and Exploits Rivers. Meanwhile, if you bring your car to St. Johns, you will be able to drive it all over the Avalon Peninsula—but nowhere else. Even so, the car will be a great convenience—especially after you've accepted the institution of left-lane travel.

And now, just in case my remarks have indicated otherwise, let me say that personally, I'd be glad to be going to Newfoundland. I like the thought of serving in a strange land, where the people are interesting, the fish big, the climate temperate and where simple travel is still something of an adventure.



Bermuda

Anonymous

Admiral Mahan gives these as the requirements for a good naval base: *position, strength, resources*. Bermuda—second base—gives you all those (I assume), and *Heaven* too. Leaving the former to the admirals, let us investigate the latter.

Perhaps it would be a little better if the guidebooks would compromise to the extent of calling their "Fairy Islands" only a small piece of heaven instead of the whole thing. Then they would be at least partwise correct. Because Bermuda is a small piece of something, all right. It consists of a string of tiny low-lying, reef locked islands, the most important of which are joined together by causeways and ferries in such manner as, in effect, to make of the entire group one island (which is why, in this account Bermuda will be "it," not "they"). The total area does not exceed twenty square miles. You can lose the island on many a Texas ranch, or on many an Army reservation. That is, you could lose the acres; but you couldn't lose the people which inhabit them. There are upwards of 30,000 of the latter, giving Bermuda a population density triple that of New Jersey.

Many of Bermuda's many problems stem from these 30,000 Bermudians. In the first place, considering the *Lebensraum* and resources available, 30,000 inhabitants are something more than enough. And so the natural increase in the population figure is viewed with alarm. More than sixty per cent of the inhabitants are Negro.

Bermuda's form of government is a development of seventeenth-century English practice. There is a governor, a cabinet, and an upper house, all appointed by the Crown. Then there is a lower house, or Assembly, elected by the people—or by a few of the people, that is. The strength of the Assembly is thirty-six members—four from each of the nine parishes into which the island is divided. The term of service is five years. The method of election is the interesting thing: the franchise is limited to adult males who hold property rights valued at sixty pounds or more. As a result of this rule, only about fifteen per cent of the adult population is allowed to vote. As it works out, most of those who do vote are from that forty per cent of the population which is white. Normally, the Assembly is about eighty per cent white and twenty per cent colored.

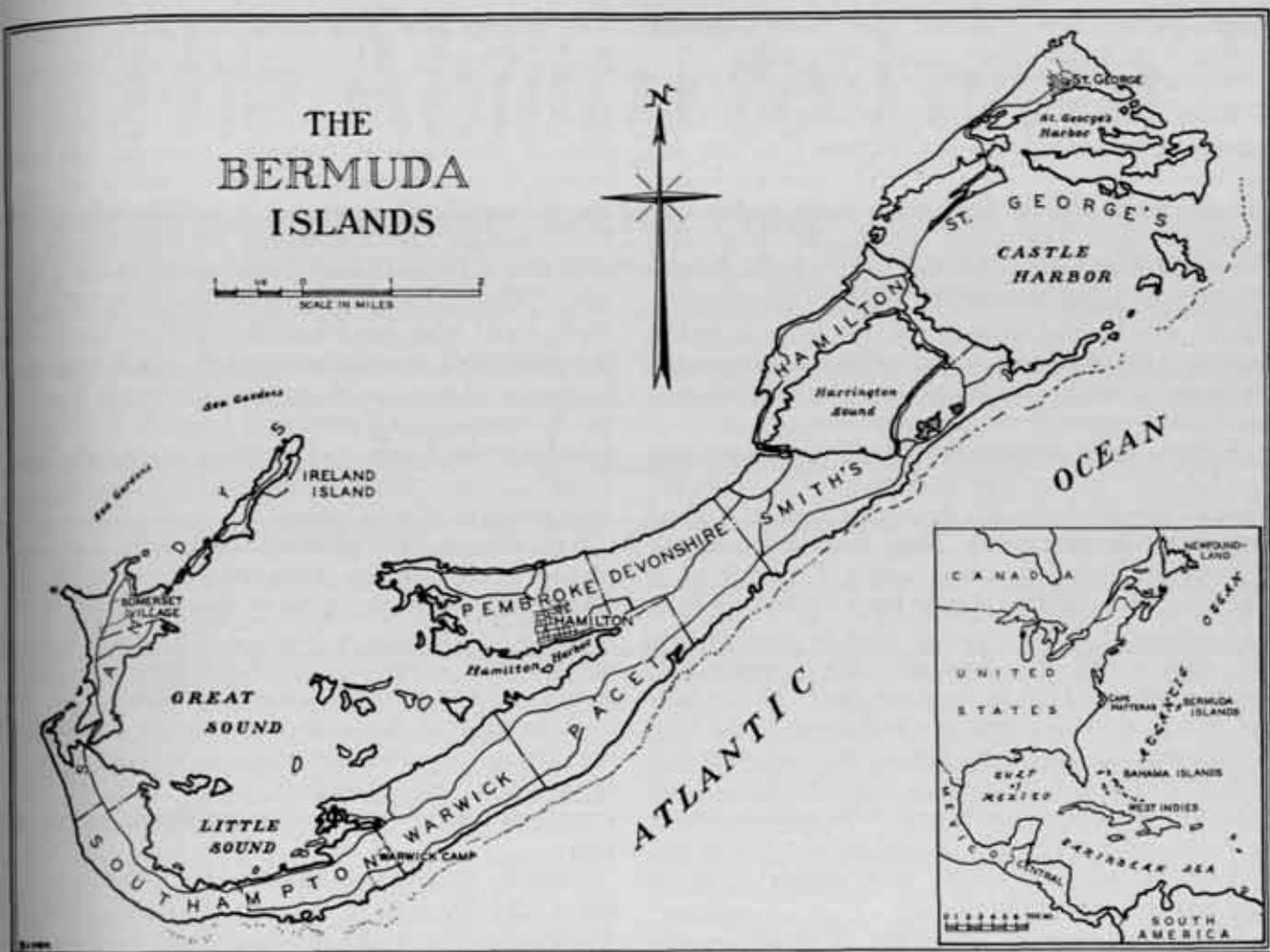
As you elbow your way into Bermuda's life and customs, there are a few *faux pas* which you are practically sure to make, and which if you don't make may cause some disappointment among your hosts, who will expect you to make them. Thus, sooner or later, and

probably sooner, you will refer to Bermuda as a part of the West Indies. The reaction will be immediate. Bermuda is *Bermuda*, and all that it knows about the West Indies is what it reads in the papers. By the same token, you will get quite a rise out of a native by classing Bermuda as a Crown Colony. As a matter of fact, this is where you get a rise out of me. My researches on *Newfoundland—First Base*—developed the fact that that island is not a dominion, but is a Crown Colony. And now I find that Bermuda is neither a Dominion nor a Crown Colony. It is something else—a something the exact nature of which is lost in the complexities of Empire nomenclature.

Besides being small and overpopulated and not a Crown Colony, Bermuda is an island that really is an island. You would have to go to St. Helena itself to find a more isolated spot. The nearest land is the American mainland—Cape Hatteras, 650 miles away. However (and this is what interested Admiral Mahan), all of our important Atlantic ports are within a thousand miles of the island. And like the Azores, Bermuda forms a stepping-stone for Transatlantic air traffic.

This strategic position, which makes Bermuda "the spearhead of our new naval phalanx," has also caused the island to figure prominently in our own military history. Loyal Britishers though they be, the Bermudians still want some credit for the success of the American Revolution. The reference is to an incident in which the Bermudian Guards conveniently arranged to be bending elbows in a tavern up at St. George the while some of Washington's agents spirited away the very considerable contents of a Bermuda powder storage house. A few weeks later, Washington is supposed to have used this powder in ousting the British from Boston. Later, during the Civil War, Bermuda was a hive of activity, a center of smuggling and counter-smuggling activities. I wouldn't be surprised but what a lot of finery with which Rhett plied Scarlett in Atlanta came in via our Fairy Islands and Wilmington.

That's all very well; but when you're going some place to live, climate is more important than history; rents more important than sociology; and rates of exchange more important than considerations of geographic position. Getting down to brass tacks at last—let's take the matter of climate. Here is an item—the item, rather—in which Bermuda considers itself tops. I would go so far as to label the Bermudian climate as definitely above average, but I have a hunch that it looks better to one who dashes down from New York for a few weeks in January than to one who takes it month in and month out. Answering this mild praise, the Bermudian who writes the handbook would quote me a few poems in extollation of the climate, and would cite the fact that millionaires who could go anywhere on many an occasion have chosen to locate in Bermuda (but I seem to remember something about incorporation taxes). Leaving it to the statistics, the situation is about as follows: Bermuda lies near the Gulf Stream. The rainfall averages about fifty-eight inches per year, about the same total as for Georgia



but more evenly distributed over the year. In 1938, a normal year, there were 172 rainy and seventy-eight cloudy days, most of these coming in the fall and winter. During that year, the mean relative humidity was seventy-eight—a figure approximating the conditions of Washington in the summer (but don't be alarmed, the temperature-humidity relationship in Bermuda is very favorable). The temperature in the shade ranges from perhaps sixty degrees in the winter to perhaps eighty-five degrees in the summer, with lows rarely dropping under fifty degrees and highs rarely exceeding ninety-five degrees. There generally is a breeze blowing, and several times a month the breeze may freshen into a gale. Once in a great while, the island is visited by a thorough-going hurricane (the last one was in 1926).

If you have read between my statistics, you will have deduced that the Bermudian climate is something like the Florida climate. During the winter (December to April) you can do with ordinary light woolen suits, and with a topcoat. During the summer, you will want the lightest things you can get: linens, seersuckers, palm beaches. There always will be need for raincoats, umbrellas, and galoshes. As in our own South, you will find the buildings designed for subtropical weather. But there will be days when a fire would be welcome if one could be found. There might also be times when

you could use a mosquito net, if you could find one.

Bermuda uses the British system of currency: pounds, shillings, pence. (But just because twenty shillings make a pound, don't go calling ten shillings a half-pound; and just because it's spelled that way, don't go calling a *hav*-penny a *half*-penny.) Due to the intimate relationships existing between Bermudian and American economies, most Bermudians think in terms of dollars just as readily as in terms of pounds, or even more readily, as you'll often think.

This is all leading up to the sad fact that you will find living in Bermuda relatively expensive. Rents will be high (even if you can find quarters), and imports (such as meat) will be expensive owing to the system of taxation, under which most of the state's revenue comes from duties levied on imports. By way of compensation, however, many of your vitamins will be cheap. Vegetables are the fruit of that land.

Speaking of houses and vegetables brings to mind one or two non-essential but interesting items. Most of the houses in Bermuda are built on and of the native coral sandstone. As a rule, there are no basements. The stone itself is white, and usually is made more so by lime-washing. Thus, the thing which first catches your eye in Bermuda is the sparkling white walls and roofs of the houses. Incidentally, each house has its rain-

catching drains and its cistern, these being important factors in the water-supply system of the island.

Vegetables, on their part, for years formed the basis of Bermudian economy. Those were the years in which our island was the truck garden for New York City and the eastern seaboard. Then, in 1930, came the Smoot-Hawley tariff, and the Bermudian truck market vanished overnight. The matter is still a sore point with our island hosts, and so, for that matter, is the Empire Preferential Tariff system. For reasons (involving statistics) which aren't clear to me, the latter is said to operate to the benefit of Canada and to the detriment of Bermuda. It seems that no matter who wins when a tariff law is passed, Bermuda always loses.

So far as sports are concerned, you'll never have done much better than you'll do in Bermuda. Of course, the swimming is good virtually the year around—the island around, too, for that matter. Then, the island is liberally sprinkled with golf courses: eight of them, four of eighteen holes, and four of nine holes. (However, from this distance it looks as though some of these courses are ultra-swanky and therefore ultra-expensive.) If you're a fishing addict, in Bermuda you've hit the jackpot. Once or twice a year you and some of the boys (count me out) can get up a party, hire a skipper and boat (for \$35 a day), and go after the marlin and tuna. Or you can go out on one of the regular fishing tours for perhaps \$3 a day (count me in). If you like reef fishing, you're in further luck because it, too, is very good all around the island.

Going from sport to the matter of recreation and edification, the Bermuda situation remains good—exceptionally good considering the minute size of the place. There are things worth seeing from one end of the island to the other. At the extreme eastern end, near the site of the new naval base of Castle Harbor, is the ancient and tourist-favored town of St. George, with its narrow crooked streets, its water carnivals, its rugged coastline, and its massive old fortifications. Near the center of the island is Hamilton, population 3,000, capital, island metropolis, port of entry and departure, and business center. You'll be in Hamilton frequently, and every so often you should put out \$1.50 for the tour in the glass-bottomed boat out to the coral reef which practically encircles Bermuda, and back. The tour takes you over what they call the "Sea Gardens," and if the *National Geographic* plus all the guidebooks isn't all wrong, then the trip is cheap at half the price.

Going west from Hamilton, you will pass through

some rolling farm lands among which is "Warwick Camp," rifle range and training field for the small military detachments which up to now have garrisoned the island. Swinging north around the Great Sound, you come to the parish of Somerset. Somerset has been hoping all these years to promote for itself a port, but the necessary dredging has not been forthcoming. The parish owes its relative prosperity and importance to its proximity to Ireland Island, home station of Great Britain's "America and West Indies Fleet," site of a big drydock and other naval facilities. Over all the island, but particularly over the eastern half, you'll encounter tourists, or if the war has stopped the tourist himself, you'll encounter (and profit by, I hope) facilities established for the business of catering to tourists. Incidentally, these references are to high-class tourists, with plenty of what it takes.

Well, when we were going to Newfoundland we were plagued by the question as to whether or not we should take our car, and there was no satisfactory answer. With Bermuda the situation is simple. The answer is no, but not definitely. Motorcars, with a few exceptions (such as fire engines and ambulances), are banned by law from the roads of Bermuda. The governor himself has been trying for years to get legislative approval to operate an official car, and without success. Until the Governor gets his car, you'd better not figure on having yours.

Even so, the island is about twenty miles long and has at least 100 miles of hard-surfaced roads. There's a motor-trolley line which runs practically the length of the island, but likely you'll need some form of personal transportation. The answer is the bicycle. Bermuda will give you the chance to recapture your lost youth, to catch up on your bicycling. The roads have been designed for that kind of traffic, being smooth and winding, with easy grades. Aboard your trusty bicycle (bring it with you or buy it in Hamilton, either one) you will be able to discover and appreciate the Bermuda of the poets: green hillsides, blooming lilies, towering cedars, emerald waters, and the like.

* * *

And so, bicycling along the gleaming roads (keep to the left, stop to allow pedestrians and livestock to cross) we leave the Paradise of the Poets, the Emerald Isle of the Guidebooks, and head southward, where our next stops will be among the West Indies, of which our Bermuda is no, and wants no, part.



The Ability to Learn

By Fletcher Pratt

Napoleon and von Keitel, 150 years apart, conquered most of Europe with what was really the same formula, one that came down to them from all the conquerors of history. Development and exploitation of special national characteristics—there's the key, as old as Genghis Khan. The whole Napoleonic system rested on the extraordinary marching ability of the French *fantassin* and the vigor of attack his capacity for enthusiasm gave. The triumphs of the Second World War have been those of German orderliness; method; passion for detail; capacity for combination and subordination of the individual. When a German attack has fire it is artificial—as synthetic and as much the product of a single man's conscious intellection as the careful staff work Berthier gave Napoleon's army.

We cannot build a good defense against totalitarianism by imitating its *Einheit* system and mass armored attack any more than we can make one against the Japanese by calling our political leader God and setting out flowers before his picture. We Americans tend to forget this, who should not. For it was precisely by not imitating the British but keeping their own character that Schuyler's riflemen won Saratoga; and the Civil War might be going on yet had not Sherman marched to Atlanta and then the sea with an army of western woodchoppers who built causeways, roads, and bridges faster than the enemy could possibly destroy them.

The fundamental question of American defense is this—what are our resources? Not in factories or figures of manpower; the Polish army on paper was nearly as large as the German, the factory potential of France fully as high. Not in figures, but in aptitude, taste, psychology and geography. The second question is like unto it—what military organization, what method of tactics and strategy, will yield the maximum military advantage from these resources?

This is the least investigated subject in the whole national defense setup. Its roots run down into child psychology, the region where totalitarianism begins to prepare its citizens for war. Even if we wished we could not imitate them here; the war for which we now prepare will be fought long before today's children grow up. What are our resources at present in hand?

Teachability is one. Georges Duhamel, the most unsparring and intelligent of the European critics of American life, has remarked that perhaps our outstanding national characteristic is "a touching faith in the value

of universal education." Perhaps faith and education alike are not worth as much as we think in civilian affairs. But few Americans come to military age without fairly extensive experience in the process of education. They have learned how to learn—a very different matter from learning how to obey orders, the object of totalitarian educational systems.

It is also a characteristic that can be given military value, leading once more and from a different direction toward that more intelligent soldiery as democracy's best defensive mechanism. With this background of educational experience we should be able to train our soldiers in far less time than the dictators need for the same process. They will naturally, without urging from on high, pick up more for themselves. The finished product will be a more generalized type of soldier, one who, having been taught basic principles, will proceed to work out details in the field from the founts of his own ingenuity.

Sometimes these details will be wrong and the soldier will get himself killed, but on the whole the process is an advantageous one. One of the troubles with the late French army was that the men knew too much, most of it wrong. In a given set of circumstances they went through a routine parade of motions. The enemy can have no prepared reply for the unorthodox, which is thought up on the spur of the moment. During the First World War German prisoners complained bitterly about American practice in the few bayonet combats that took place. These Transatlantic soldiers were ignorant, they said; went through the first two or three passes of the fencing manual of the bayonet according to form, then violated good taste by kicking their adversaries in the crotch or felling them with football tackles.

It is heartening to observe that the U. S. Army authorities seem fully aware of these facts. In the new *Infantry Field Manual* all emphasis has been placed on the responsibility of the individual soldier for his own performance, on learning rather than following orders. The program for the training camps is happily of the same type, with close-order drill cut to a minimum and preserved mainly for physical conditioning purposes. Teaching the individual how to handle himself in the field is the keynote. It will doubtless be departed from to some extent by drill-officers trained in the old system, but the will and the program are there, and the adjustment will make itself.

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 coöperation 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

COLONEL CHARLES THOMAS-STAHLE, 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

National Guard Trophy

Too late for the JOURNAL to make arrangements with the regimental commander to write a story for this issue telling how they did it, announcement is made that the 244th Coast Artillery (TD), New York National Guard, is the winner of the Coast Artillery Association trophy for the training year 1939-40.

The winning regiment, whose home port is New York City, came through with a score of 86.63. The regiment is now in Federal service at Camp Pendleton, Virginia Beach, Virginia.

The next two highest scores were:

252d Coast Artillery (TD), North Carolina National Guard	76.64
250th Coast Artillery (TD), California National Guard	69.97

Honorable mention went to the 261st Coast Artillery (HD), Delaware National Guard, for its score of 86.66. This regiment was not considered in the final judging because its strength at the time of the practice was less than four firing batteries.

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Station List

The heading should have been "No Station List." The JOURNAL regrets that it is not practicable to publish a station list with this issue as we had planned.

✓ ✓ ✓

Army's Strength Estimated Over a Million

The estimated strength of the Army of the United States on March 10th was approximately 1,003,500 officers and enlisted men. The breakdown of the total follows:

OFFICERS	
Regular Army	14,000
National Guard in the Federal Service ..	16,500
Reserve Officers on extended active duty	38,000
	<hr/>
	68,500
ENLISTED MEN	
Regular Army	467,000
National Guard in the Federal Service ..	255,000
Selective Service Trainees	213,000
	<hr/>
	935,000

Change in Army Ration

Effective May 1, 1941, or before, if possible, all posts, camps, and stations, with a few exceptions, will be placed on the field ration system in place of the garrison ration system for a ninety-day test period. Under the field ration system, bookkeeping will be greatly simplified, better food and menus will be provided, and a two-cent saving on each ration will permit purchase of fresh fruits and vegetables, special seasonings, pepper sauces, extracts, flavorings, etc., not otherwise possible.

During the ninety-day test period, each Corps Area Commander, through the Corps Area Bakers and Cooks school, will prepare a master menu for each post, camp and station in the Corps Area. A proper balanced diet will be assured for all soldiers under the system.

To compensate for doing away with the money credit for each ration from which organizations have been able to build up a fund for the purchase of special items of food, an allowance of two cents per day per man will be allowed during the trial so such outside purchases may be made.

The field ration trial will be used at all posts and stations of more than 2,000 strength, except at the United States Military Academy, General Hospitals, and such other small stations as may be approved by the War Department upon recommendation of the Corps Area commanders. Certain enlisted men on posts where the field ration system will be used will remain under the garrison ration system, including those who are authorized to mess separately, patients at station hospitals, those serving and messing on Army mine planters, and individuals or small detachments ordered to places of temporary duty where it is impracticable to issue field rations.

Based on a controlled menu, the field ration will allow uniform purchasing and mass procurement at a great saving, and still provide nutritionally balanced meals for all troops. Purchasing also will be centralized, insuring efficient inspection, and Unit Supply officers will be given valuable training under field conditions.

The field ration, like the garrison ration, is figured to supply 5,000 calories a day for each soldier. It has been found that from 4,500 to 4,800 calories are sufficient for men engaged in such pursuits as stone cutting or woodchoppers. However, soldiers need slightly more because they live under all kinds of weather conditions. Proper amounts of carbohydrates, proteins, fats, minerals, salts, and vitamins will be guaranteed under the master menu system. The master menus are to be prepared for a period of fifteen days at a time.

At the conclusion of the test period, Field Commanders will submit a report with special reference to the desirability of the field ration and its continuance. If the system is continued, the Quartermaster will take over the preparation of the master menus. Miss Mary L. Barber, food consultant of the Office of Production Management, will write the menus, which will in turn

be approved by the Surgeon General and the Dietetic Department of the Department of Agriculture.

Actually the master menus will be issued as guides only. If the mess sergeant can vary his menu from that of the master menu, and still come out right, it will be permitted.

New Field Jacket

The new field jacket, designed for light weight, warmth, and utmost freedom of action, is now in quantity production, and is being issued to military units in the field. Organizations which have already received the new field jacket include: Troops in Alaska (issued in fall of 1940); troops in Newfoundland; and the 5th Division (issued in December, 1940). The Armored Force is now being provided with this jacket and issue will be made at an early date to troops in the First and Second Corps Areas to be followed, over a period of months, by issue to all other troops on the authorized basis of one field jacket to each enlisted man in the continental United States.

Approximately twenty manufacturing concerns in addition to the Philadelphia Quartermaster Depot are now producing about 730,000 of these field jackets. Invitations for bids have been recently issued for the manufacture of an additional 1,036,000 garments.

The field jacket is designed for and will be worn in Winter, Spring, and Fall in lieu of the wool coat or blouse. In design and cut, the garment is designed to be loose and easy fitting, with a pleated, single panel bellows back permitting maximum use of the arms and shoulders. Approved specifications require the outer material to be a wind-resistant cotton cloth of high texture, fine woven, light in weight, strong, and very similar to Byrd cloth, with which this material is popularly but erroneously confused. A special treatment gives this cloth water-repellent properties. In order to permit early quantity production, suitable substitute inner and outer materials were employed in initial production.

For warmth, there is a permanent lining of 10½ ounce shirting flannel. The jacket has an open front with double closure—buttons and zipper—with an overlap to shut out the air. A collar which can be turned up and fastened close around the neck by means of a tab, straps on the wrists to keep out wind and moisture and two adjustable straps at the hip line complete the comfort features of the jacket. There are two pockets in the garment.

One of the many advantages of the field jacket, from the viewpoint of maintaining stocks of this garment is the fact that it is issued in only seven sizes from thirty-four to forty-six, in contrast to the wool coat or blouse which is issued in thirty-four different sizes—thirty-three regular to forty-four regular, besides different lengths. The cost of the field jacket is about \$6.00.

Composition of New Army

The War Department recently released percentages of the various arms and services that will compose the new expanded Army when it reaches the proposed strength of 1,400,000 men by June 30, 1941.

Of every 1,000 men in the expanded Army, distribution among the arms and services will be as follows:

Infantry	290
Field Artillery	141
Coast Artillery (Including Antiaircraft) ...	131
Air Corps	128
Medical Department	76
Quartermaster Corps	69
Corps of Engineers	61
Cavalry	29
Signal Corps	29
Armored Corps	22
Ordnance Department	18
Chemical Warfare	4
Finance Department	2

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Identification of Aircraft

When war was declared not one member of the Post could recognize more than about half a dozen friendly aircraft. In fact, no one had given the matter a thought. This state of affairs continued for several months. Then two or three of us decided to improve our knowledge. We could get no help from official quarters at all, so we started weekly classes. Having no material to work on, I went through all my old numbers of *The Aeroplane* and cut out and mounted on cards all photographs of interest. We also bought "Aircraft Identification," Parts I and II, and mounted separately all the silhouettes, etc., in them. We now have a collection of about 800. The classes have been a huge success and 15 out of 19 members are now "hot stuff." Neighboring Posts have been canvassed, and early this year we are holding an inaugural meeting to found a branch of the Harkers' Club.

* * *

The most important part of an Observer's duty is identification. The standard of the moment is appallingly low. A glaring example occurred when I was on duty recently. An aeroplane was handed to our section at 5,000 feet. It had been identified as a Swordfish. In my hearing it was called a Swordfish, Albacore, Wapiti and Seal. The aeroplane, in fact, was a Tiger Moth. All members should have a short course given by experts in identification and should then be tested. Those failing to pass should be asked to resign. There is no room for passengers in any war-time service. Intending new recruits should be given the same course and tested, and not accepted if under a fixed percentage.—*Excerpts from a letter to THE AEROPLANE, London.*

Coast Artillery School

Two hundred and ninety Reserve officers, most of whom are captains, were graduated February 8, from special six-weeks' and ten-weeks' courses at the Coast Artillery School.

After graduation, ninety of these officers, who took the six-weeks' course covering Administration and Coast Artillery technical training, were assigned for the most part as battery commanders of seacoast and tractor-drawn training batteries at Coast Artillery Replacement Centers at Fort Eustis, Virginia; Camp Wallace, Texas; and Camp Callan, California.

The remaining 200 officers who took the ten-weeks' course received antiaircraft training. Many of these officers will be assigned to eight semi-mobile regiments (each consisting of 2 gun battalions and 1 automatic weapons battalion) which are to be activated this spring at Camp Davis, Coast Artillery Unit Training Center, near Wilmington, North Carolina. Others will be assigned as battery commanders of antiaircraft training batteries at the Coast Artillery Replacement Centers.

On February 15, refresher courses of ten weeks' duration for National Guard and Reserve officers of battery grade began. These courses with an enrollment of approximately 100 officers, will be staggered so that a new class will start every two weeks. Courses are designed for officers assigned to seacoast artillery, to mobile seacoast artillery (155-mm. Gun), and to anti-aircraft units. Officers are assigned to the school on Field Army quotas based upon the number of Regular Army and National Guard Coast Artillery units under the jurisdiction of each field army.

These courses will run until some time in July when Officers' Candidates Courses for qualified enlisted men of the Army of the United States will be added.

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If Bombers Strike

Cities of the United States are brightly lighted and people in this country read of the blackouts and air raids in Britain. Common opinion is that nothing like that could happen here. But, only a few miles over the Canadian border, the city of Montreal is going ahead with an elaborate program of air-raid defense. Fifteen thousand men have been organized in a "civilian protection committee." Residents of the city have been told that the time has come for them to prepare an air-raid shelter in every home.

First steps for civilian defense already are being taken in this country. The United States Conference of Mayors, headed by Mayor La Guardia of New York City, has been making a study of the problem. Recently a preliminary report on the subject, prepared by Paul V. Betters, executive secretary of the conference, was forwarded by Mayor La Guardia to President Roosevelt.

The problem also is being studied in the Govern-

ment. The War Department is preparing a report on air-raid precautions for use by civil authorities. This Department has appointed a committee of engineers to assist on problems of protection to civilians and civilian properties in time of war. Another group in the civilian defense picture is the "fire advisory committee" of the Defense Advisory Commission.

The report forwarded to the President by Mayor La Guardia recommends that the whole program of civilian defense in the United States be directed by a "Federal Civil Defense Board." The Board would establish regional offices which as federal agencies would deal directly with local civil defense boards.

Work of the local civil defense boards would consist of: (1) prevention of civilian casualties and property damage; (2) instruction of civilians in the proper method of protecting themselves and preventing civilian casualties; (3) organization of those services considered necessary for the treatment of civilian casualties if they do occur.

Air defense as carried out by civilians does not include the action of fighter planes, anti-aircraft guns and other weapons used by the military services. Instead, it includes those measures of protection that can be taken on the ground to minimize the effects of attacks from the air.

Among the problems of civilian air defense are:

- Restriction of lighting.
- Provision of protection, including shelters, and the safeguarding of important points.
- Evacuation of personnel from threatened areas.
- Maintenance of vital services, including food supplies.

Treatment of casualties and the setting up and maintenance of first-aid posts, hospitals and ambulance services.

Repairing damage caused by enemy air attack.

Anti-gas measures, such as decontamination, gas-proofing of dwellings, and individual and collective protection against gas.

Further studies are being made by the United States Conference of Mayors to estimate what civil defense would cost in the event of attack. Problems of taxation that would be involved also are being taken up. In some of the English cities, such as Coventry, a revision of the tax rules has become necessary. Not only is the cost of rebuilding a tremendous burden on the community, but, as the task of rebuilding comes on, the taxable wealth—mainly real estate—tends to disappear.

Residents of Montreal already are studying "preliminary instructions" issued by the civilian protection committee. These instructions contain such advice as:

Protect yourself immediately against possible air raids. Prepare a shelter in your home, preferably in the basement or cellar. Check the ceiling for its power to resist falling debris. If it proves unsatisfactory, reinforce it. Make provision for a suitable exit to the ex-

terior. To protect the openings, procure sand bags, bags of earth or strong panels. Residents of apartment houses should come to an understanding with each other on preparation of a shelter (cellar or other type of shelter) that would provide protection for all in an emergency. The proprietor should be consulted and his aid solicited in this work which is of vital interest to us all.

"Remove all potential fire hazards to minimize possible raid damage. Take immediate steps for protection against fires which may ordinarily occur as well as those that might be caused by incendiary bombs. . . . Do not accumulate waste materials or anything of a highly inflammable nature in attics, yards, vacant lots or beneath stairs.

"When an air raid warning sounds, the first thing to do is remain calm and avoid panic. Do not go out on the street. Shut all windows, doors and shutters. Cut off the gas supply at the main meter. Do not use the telephone unless it is absolutely necessary. If you are outside, take shelter. If this is impossible, lie flat on the ground. Those who live in apartments or flats should make their way to the cellar shelter, or, if there is no shelter, proceed to the lower floor and take a place in the corners of the most solid walls or beside a pillar. Avoid windows and skylights."

Mayor La Guardia and other municipal officials in this country emphasize that there is no cause for alarm. But they think a good slogan for civilians as well as soldiers is: "Be prepared."—*The United States News*.

* * *

New Field Range

The War Department has announced development of a sectional gasoline field range, built in individual units so it can be expanded to meet the needs of any size organization, which assures Army troops in the field of better cooked meals than ever before.

Three of the units can be installed across the front end of a 1½-ton Army truck, and ordinary hot meals can be prepared during field movements as well as while in camps or at field stations. By fastening the units together and anchoring them to the truck, meals can be cooked while the truck is moving.

As an example of the capacity of a single unit, which does roasting, frying, boiling and baking, the cooking for the following menu to serve 200 men for breakfast, 193 for dinner and 150 at supper can be accomplished:

Breakfast—Creamed chipped beef, home fried potatoes, toast and coffee.

Dinner—Roast leg of veal, bread dressing, pan gravy, buttered potatoes, stringless beans, creamed corn, coffee.

Supper—Rice and tomatoe soup, baked macaroni, tomato sauce, carrots and peas, coffee.

Units are constructed of an outer sheet of aluminum and lined with stainless steel, so that keeping the equipment clean is greatly facilitated.

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.

THE COAST ARTILLERY BOARD

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Portable loud speaker. A portable loud speaking unit intended for use in the instruction of large groups has been tested by the Coast Artillery Board. The unit consists of two pieces as follows:

a. A metal horn in which are mounted a microphone and a loud speaker unit. The horn is $8\frac{1}{2}$ inches deep and 10 inches across the open end. The microphone is mounted in the rear end of the horn and the loud speaker unit mounted inside the horn. The horn weighs approximately three pounds.

b. A small metal box $3 \times 8\frac{1}{2} \times 5\frac{1}{2}$ inches and weighing about four pounds contains the amplifier and dry batteries. The box is provided with clips for fastening the box to the user's waist belt. The cord connecting the box and horn is provided with a plug connection at the box. A separate plug is provided for the microphone.

The horn unit in its present form must be held in front of the speaker's face. This is a disadvantage when the unit is being used by an instructor. In order to obviate the necessity for holding the horn in front of the speaker's face, the Board investigated and found that it would be practicable to use a throat microphone or a hand microphone with the horn speaker under test.

As a result of the test, the Coast Artillery Board recommended that a portable loud speaking unit having the following military characteristics be standardized:

a. *Purpose.* Voice amplification for instructors in schools, reception centers, and antiaircraft firing centers.

b. Complete unit to consist of a hand or throat microphone, an amplifier and a horn-type loud speaker.

c. *Power.* Dry batteries in the amplifier case.

d. *Weight.* Not to exceed nine pounds. Speaker and amplifier to be approximately equal in weight.

e. *Mounting.* Loud speaker and amplifier to be mounted on a harness which fits over the shoulders of

the user, loud speaker in front and amplifier on the back.

f. The unit to withstand, without damage, the concussion of antiaircraft gun fire when the unit is twenty-five feet from the gun muzzle.

The Chief of Coast Artillery has recommended the following basis of issue:

a. One per harbor defense, railway, tractor-drawn, and antiaircraft replacement battery.

b. One per antiaircraft battalion.

Coast Artillery target. Since the last issue of the JOURNAL, the Board has studied a special type target developed by Ordnance personnel, Harbor Defenses of Pearl Harbor. Because of the low height of site from positions on or near the beach in Hawaii, it was found that the visibility of the standard pyramidal type target was unsatisfactory. Due to its small top, it is easily obscured from the gun pointers by surf on the reefs, which are some distance from the shore, and by the size of the waves or by mist or dust.

The special target consists of a raft 16×20 feet which carries two rectangular sails having nine six-inch holes in each to prevent pocketing of the wind. The sails are ten feet high and six feet wide and are hung on the target frame with a two-foot space between.

Seven of these targets have been built and the Commanding General, Hawaiian Separate Coast Artillery Brigade, reports that they withstood the beating of the sea and the strains of handling by the towing vessel much better than the old type of pyramidal target. He also states that they gave much improved visibility due principally to having more sail area near the top of the target. It was found that painting the sails yellow for day and aluminum for night firing gives the best vis-

bility. The flag at the top of the target is usually painted yellow.

In its report, the Board stated that while tests had been made on targets similar to the type developed in Honolulu, it was of the opinion that there is a need for a special target under conditions of low height of site.

Based on the Board's recommendation as approved by the Chief of Coast Artillery, a target is now being constructed by the Ordnance Office, Fort Monroe, Virginia, in accordance with the design submitted by the Commanding General, Hawaiian Separate Coast Artillery Brigade and upon completion, it will be tested by the Board to determine its suitability for standardization.

Railway artillery. The subject of railway artillery is receiving special attention at the Coast Artillery Board, and for the benefit of those officers who have not had the privilege of serving with this type of armament, the following notes will be of interest:

a. A study of Table of Organization 4-45, Coast Artillery Battalion, Railway Regiment, dated November 1, 1940, and Table of Basic Allowances, Coast Artillery Corps, November 1, 1940, shows that the following items of railway equipment are assigned to a railway battalion:

- 1 Locomotive.
- 8 Guns, or mortars, with railway mounts.
- 8 Ammunition cars for gun batteries, or
- 16 Ammunition cars for mortar batteries.
- 3 Box cars, steel, supply.
- 3 Fire control cars.
- 3 Kitchen cars.
- 2 Tank cars.

In addition, there are twenty-six pieces of motor transportation which would be hauled on flat cars.

b. Disregarding the motor vehicles and passenger coaches for personnel, the approximate weight of the railway cars loaded to their capacities and guns or mortars, including carriages, will total about 1,770 tons for the battalion armament train.

It is believed that the battalion locomotive will not have to handle the entire battalion train at one time, but that the normal operation will be to make up or spot the equipment of one battery.

The gross weight of a railway gun battery armament train is considered to be 800 tons.

The speed to be developed and the grades to be negotiated are not critical items, since the load can be broken up into small units.

Diesel electric locomotives of 300 horsepower have been recommended and approved to replace the old coal-burning type of battalion locomotive. This new locomotive will give decided advantages over the coal burner and its addition to railway artillery is one step towards stream lining this type of armament.

Charts and scales. The following extract from the

draft copy of Training Memorandum No. 21, Results of Coast Artillery Target Practice, Calendar Year 1940, recently forwarded to the Chief of Coast Artillery for approval, is published at this time in order that the information appearing therein may be available to all concerned at an early date:

"5. *Charts and scales.* a. Many fire control instruments for seacoast artillery make use of charts and scales for the graphical solution of the problems that arise in the determination of firing data. Care should be taken to insure that these charts and scales are applicable to the particular combination of gun, projectile and powder that is used in firing. The use of improper charts or scales may cause an erroneous ballistic correction, and although adjustment of fire may be obtained, a shifting center of dispersion is likely to occur as firing is continued.

"b. In preparing a battery for firing, the check of the fire control system should include a check of the charts and scales that will be used. A check should be made also under actual operating conditions during drills by comparing certain data obtained from the graphical solution using the charts and scales and the corresponding data obtained from an algebraic solution using the appropriate firing tables. Standard Nomenclature List No. F-69 and Book of Standards, Ordnance Department, list the appropriate firing tables for all combinations of gun, projectile, and powder.

"c. Charts and scales for standard fire control equipment may be obtained on request from the Coast Artillery Board. The furnishing of charts and scales to all batteries places a heavy burden on the Coast Artillery Board and, therefore, care should be exercised in submitting requests. Many of the requests received by the Board in the past year indicate that little thought was given to their preparation. In many cases, there was not sufficient information to identify properly the charts and scales desired, and in some cases the requests were so completely erroneous that a lack of knowledge of gunnery and fire control principles was indicated. Such requests have caused undue waste of time and effort in attempting to decipher the meaning of the requests or in returning the communications for further information. Errors in nomenclature such as requesting a range-range relation tape when a logarithmic range tape is needed have been of common occurrence.

"d. Requests for charts and scales should include, where applicable, such information as follows:

- (1) Type of gun and carriage.
- (2) Weight and type of projectile.
- (3) Type of powder charge such as normal or super charge, base increment or aliquot part, and zones.
- (4) Firing tables which apply.
- (5) Type of fire control device such as Deflection Board M-1 or universal deflection board.

(6) For range-range relation scales, the weight and type of projectile for which the range drum is graduated and the projectile to be fired should be given.

(7) Angular units used (mils or degrees).

"e. In submitting requests for charts and scales, all concerned are urged to exercise proper care and judgment to avoid requesting excess quantities, duplication of requests, and requests for charts and scales for which there is no need. There have been many instances where battery commanders have requested charts and scales which were already on hand in their harbor defense at either the office of the artillery engineer or the ordnance officer. Supervision and coordination of requests by harbor defense commanders would remove many difficulties."

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Leads for automatic weapons, 37-mm. antiaircraft gun. Firing Tables 37AA-N-1 were published in June of 1939. Data in these tables are based on a muzzle velocity of 2,700 feet per second when firing the practice shell, M55. These tables will be replaced in the near future by Firing Tables 37AA-N-2. The data in the new tables are based on a muzzle velocity of 2,500 feet per second when firing shell, HE, M54, with fuze, PD, M56, or shell, practice, M55A1, with fuze, dummy, M50.

The accompanying figures illustrate the leads when computed in accordance with the new firing tables as compared with computed leads based on Firing Tables 37AA-N-1.

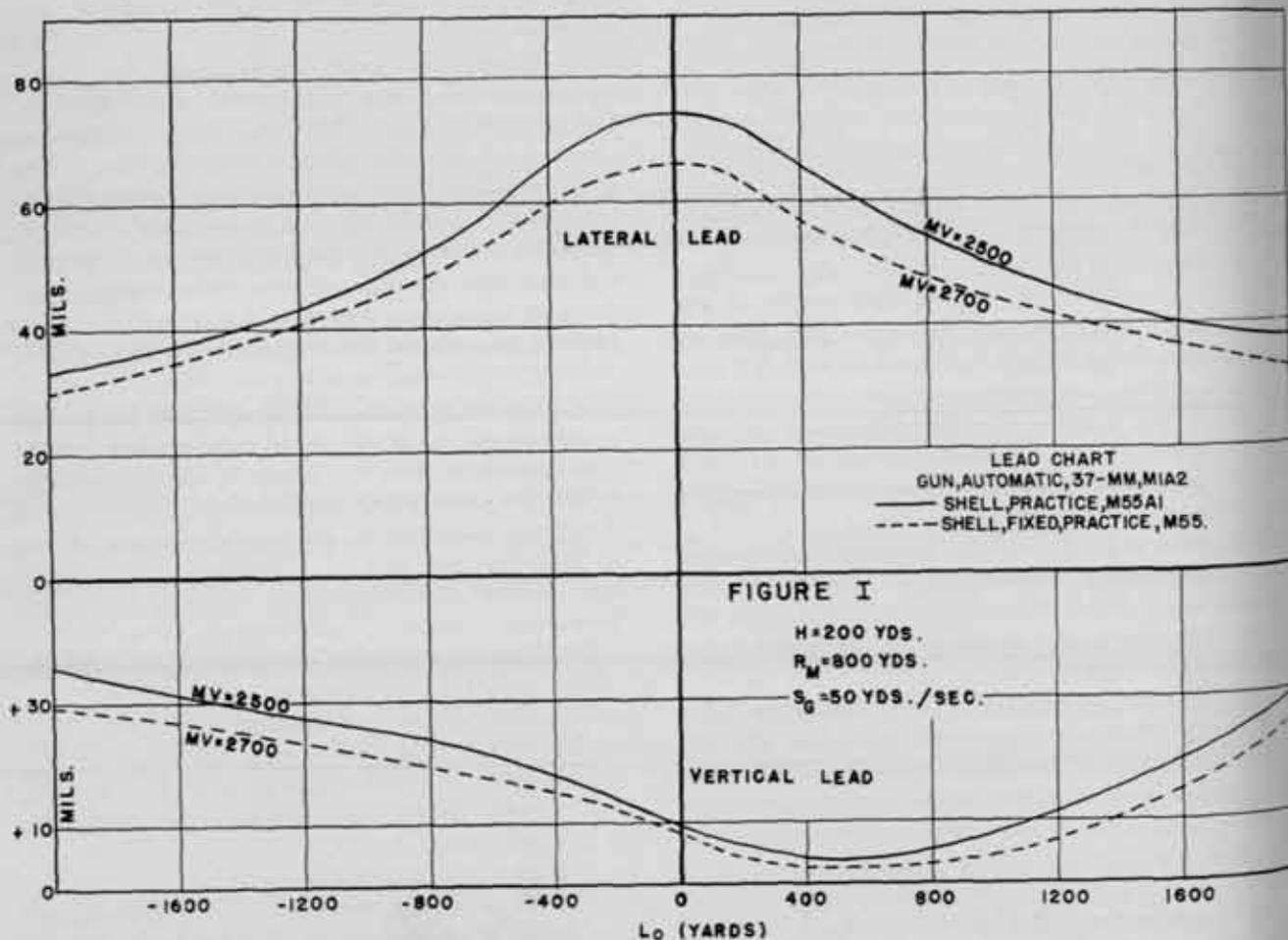
When firing the new ammunition, (shell, M55A1), the lateral leads required will be greater than those computed for a 2,700-foot per second muzzle velocity. The rate of change of lateral lead is affected only slightly.

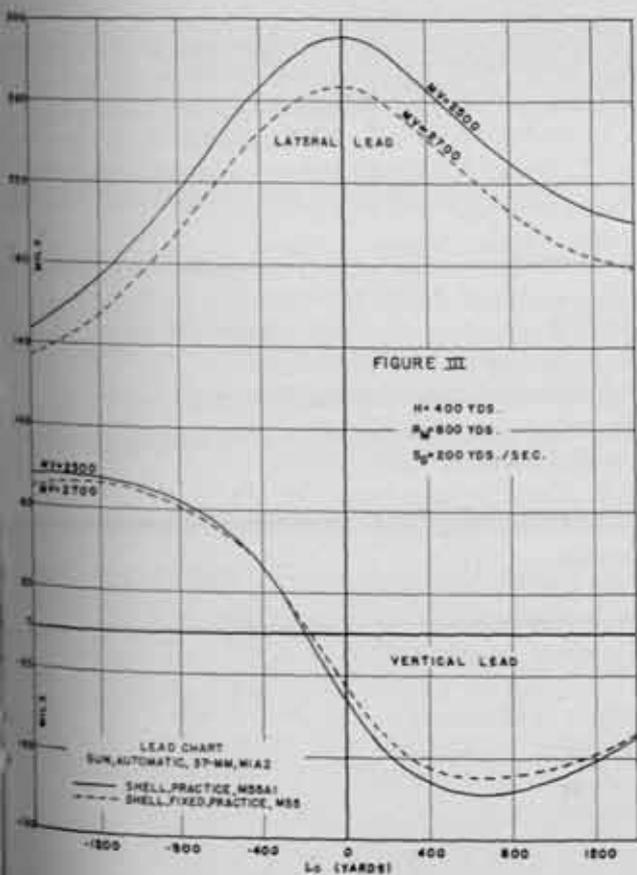
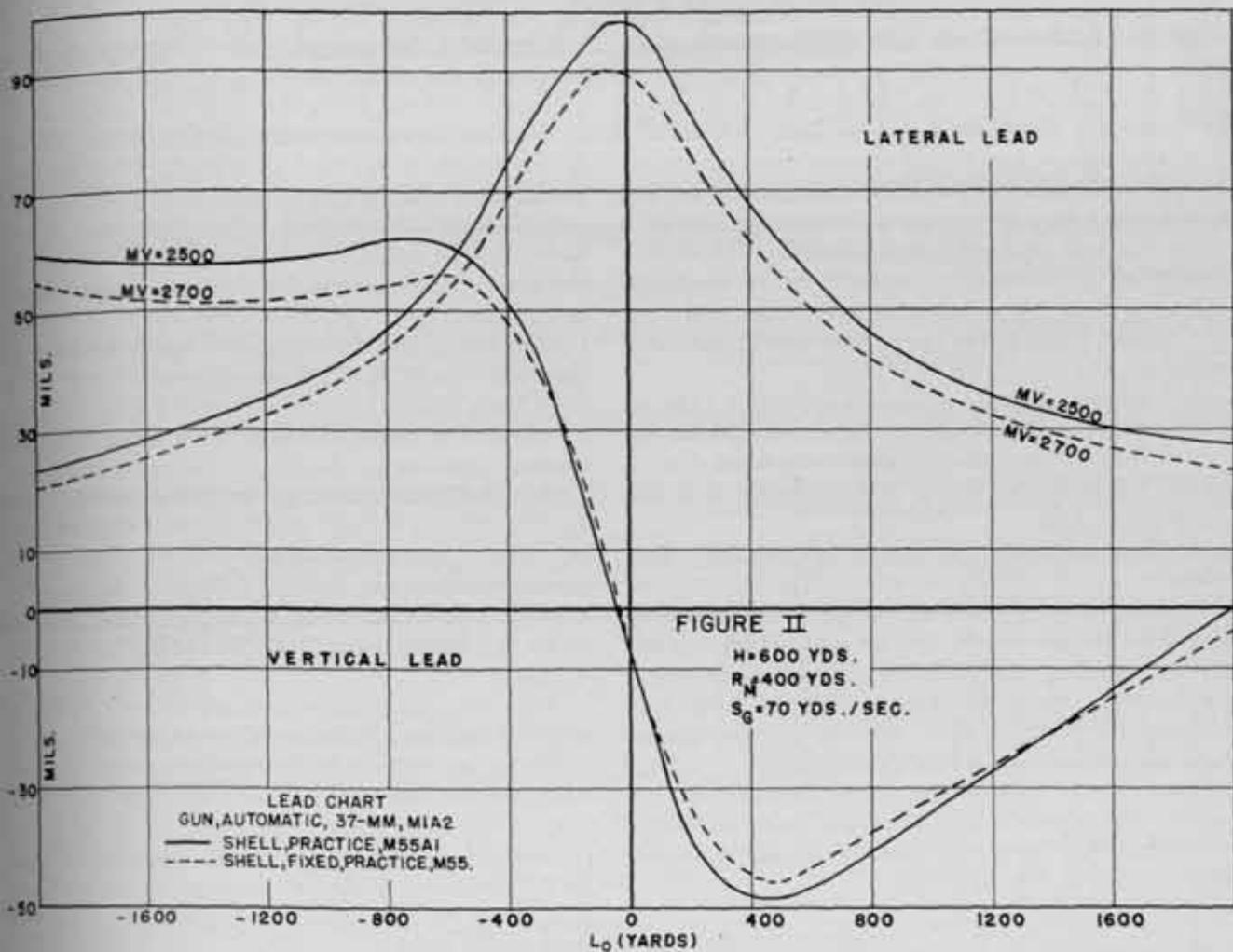
Vertical leads are not uniformly altered by the changes in super-elevation and time of flight. In general, the rate of change of vertical lead is approximately that indicated by the 2,700-foot per second graphs. Note that in Figure I the vertical lead is consistently greater, while in Figures II and III the vertical lead is greater in both positive and negative values so that the curves cross in the vicinity of the midpoint.

Even at target practice speeds the amount of lead required when firing the M55A1 target practice shell varies from that required with the old M55 shell by from three to nine mils. Since this variation is sufficient to cause a complete miss, precautions must be taken so as not to fire both types of ammunition during the same course.

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Coast Artillery Memorandum No. 21—Project No. 1191. Since the last issue of the JOURNAL the Board has completed its study of target practice reports of firings





conducted in 1940 and submitted a draft copy of Coast Artillery Memorandum No. 21 to the Chief of Coast Artillery for approval. This memorandum, as in previous years, will list the scores and other data pertaining to record target practices conducted in 1940. Extracts from the reports of individual practices are quoted or paraphrased and pertinent constructive comments made with a view to preventing a recurrence of the errors in future target practices. As in Coast Artillery Memorandum No. 20, no mention is made in the tables of the names of officers and organizations and of the classification of batteries.

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Technical Manual 4-245, Preservation and Care of Seacoast Defense Matériel (Project 1198). The Board recently completed a proposed draft of a technical manual on the above subject, in collaboration with the Commandant, Coast Artillery School, and the Commanding Officer, Submarine Mine Depot. The matter contained in this new manual is to supersede Technical Regulations No. 1160-20, July 1, 1933, as amended to include changes No. 1, January 2, 1935, and Chapter 5, Part Two, Coast Artillery Field Manual, Volume I, February 1, 1933. Following is a brief summary of the significant changes incorporated in the proposed draft:

a. Instructions in connection with the determination

of and provision for special maintenance measures to meet abnormal conditions have been made more explicit.

b. Overhaul of recoil and recuperator systems is to be done every two, instead of every three, years.

c. Decision as to whether plotting room equipment or matériel in Class B should be stored or left in place is to be made by harbor defense commanders instead of corps area and department commanders.

d. Class C matériel is required to be placed in operating condition at least once every three years.

e. Power plants are to be operated weekly instead of monthly.

f. Inspection period for Class B matériel is to be extended to coincide with active season when practicable.

g. Duties of inspecting officers are reworded to require examination of record books to insure that they are kept properly.

h. Required records of motor vehicles have been noted.

i. Requirement for keeping emplacement books is enlarged to include mobile seacoast and antiaircraft batteries assigned to harbor defenses. Data to be entered in emplacement books of seacoast batteries have been changed in several cases to agree with more modern methods and matériel. A listing of the data to be entered in emplacement books of antiaircraft batteries has been added. The appendix lists all official publications and Ordnance Field Service Bulletins pertaining to the subjects covered in the new manual.

* * *

Carry-all truck (½-ton)—Project No. 1200. Six ½-ton, 4 x 4, carry-all trucks were procured for the Coast Artillery in 1940 and extended tests were conducted in five antiaircraft regiments and by the Coast Artillery Board with a view to determining:

a. Whether the carry-all truck might better fill all requirements for a light personnel carrier and for other tactical requirements which are now filled by the ½-ton, 4 x 4, command and reconnaissance truck.

b. Whether the carry-all truck might fill tactical requirements of a similar nature in harbor defense units.

c. Whether the carry-all truck might be used as a carrying and operating vehicle for the Radio Set SCR-177-A, in lieu of the 1½-ton panel delivery truck now provided.

The carry-all truck is a 4 x 4 vehicle on which a pressed steel body of enclosed type has been installed. The steel body has eight glass windows, exclusive of the windshield, and three doors. There are two doors, one on each side in line with the driver's seat forward, and one two-section door hinged horizontally, across the rear. There are three rows of seats, the driver's seat with a folding seat to the right which must be moved out of

the way to allow access to the passenger space in rear, a second seat which leaves an aisle to its right, and a rear seat across the back. The rear door cannot be used for personnel with the rear seat in place. The two rear rows of seats are easily removable, which permits the rear of the truck to be used for cargo space, accessible through the rear door.

In order to determine whether the ½-ton, 4 x 4, carry-all truck might be substituted advantageously for the ½-ton, 4 x 4, command and reconnaissance truck or the 1½-ton, 4 x 4, panel delivery truck which is at present the standard carrying and operating truck for the Radio Set SCR-177-A, questionnaires were sent to five Coast Artillery organizations which were issued the ½-ton, 4 x 4, carry-all truck. The answers received showed a preference for the ½-ton carry-all truck as against the ½-ton command and reconnaissance truck based chiefly on account of the enclosed body construction which gives the personnel greater protection from adverse weather and dust. The answers also express a conviction that ½-ton vehicles, in general, are too small to be suitable operating vehicles for Radio Set SCR-177-A.

After considering the reports of the tests conducted by the commanding officers of five antiaircraft artillery regiments and the results of extended tests at Fort Monroe, the Board concluded that:

a. While the truck, ½-ton, 4 x 4, command and reconnaissance, is not entirely satisfactory as a light personnel carrier nor as a reconnaissance vehicle, it is better fitted to its purpose under war conditions than the ½-ton carry-all truck.

b. While the truck, 1½-ton, 4 x 4, panel delivery, is not entirely satisfactory as an operating truck for Radio Set SCR-177-A, the ½-ton carry-all truck very definitely would be a less desirable vehicle for this purpose.

c. The needs of harbor defense units do not justify a change from the standard ½-ton trucks (command and reconnaissance, and pick-up) to the ½-ton carry-all truck.

d. No special vehicle for command and reconnaissance purposes should be developed for the Coast Artillery Corps alone, but that an improved vehicle should be developed for use by all arms.

The Board recommended that:

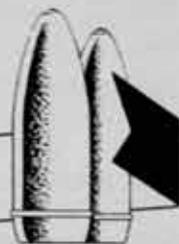
a. The carry-all truck not be adopted for use by the Coast Artillery Corps.

b. There be developed for use by all arms an improved command and reconnaissance car which will provide:

- (1) More adequate protection from adverse weather and dust.
- (2) A reasonable field of view for all occupants sitting upright when the body is closed against adverse weather.



COAST ARTILLERY ACTIVITIES



OFFICE OF CHIEF OF COAST ARTILLERY

Chief of Coast Artillery
MAJOR GENERAL JOSEPH A. GREEN

Executive
COLONEL K. T. BLOOD

Assistant Executive
MAJOR J. D. MOSS

Personnel

LIEUTENANT COLONEL F. E. EMERY, JR.

Matériel

MAJOR F. R. CHAMBERLAIN, JR.
MAJOR W. H. J. DUNHAM
MAJOR C. VAN R. SCHUYLER
CAPTAIN D. R. DICKEY

Planning

COLONEL A. G. STRONG
LIEUTENANT COLONEL C. E. COTTER
LIEUTENANT COLONEL O. B. BUCHER
LIEUTENANT COLONEL L. W. JEFFERSON

Organization and Training

LIEUTENANT COLONEL H. N. HERRICK
LIEUTENANT COLONEL J. T. DE CAMP
MAJOR R. E. STARR
MAJOR J. E. HARRIMAN
MAJOR C. N. BRANHAM

Fiscal

LIEUTENANT COLONEL J. T. LEWIS
LIEUTENANT COLONEL L. L. DAVIS
FIRST LIEUTENANT D. B. SELDEN

Coast Artillery Journal

COLONEL C. THOMAS-STAHLE
CAPTAIN A. SYMONS



Fort Monroe

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

BRIGADIER GENERAL FRANK S. CLARK
Commandant, Coast Artillery School

BRIGADIER GENERAL ARTHUR G. CAMPBELL
Commanding Camp Pendleton

COLONEL WILLIAM S. BOWEN
President, Coast Artillery Board

COLONEL DELMAR S. LENZER
Commanding Submarine Mine Depot

By Major Franklin W. Reese

Activities in the Harbor Defenses of Chesapeake Bay have been accelerated and are now rolling in high gear. Expansion of all units has been completed, new organizations have been activated, trainees have been received and are now hard at work, and the unit training programs are being carried out with gratifying results.

The 246th Coast Artillery at Fort Story received more than 300 trainees from Fort George G. Meade. These men were first placed in provisional batteries for observation and fundamental training for a period of two weeks, after which they were distributed among regular batteries until all batteries had reached full strength. The plan being used is to rotate officer-instructors for each group of trainees, with emphasis placed upon basic training in fundamentals and discipline.

The 244th Coast Artillery at Camp Pendleton received 456 trainees on February 14th and 253 more on February 17th. Basic training programs were initiated with each battalion operating a recruit school. Instructors had been trained thoroughly since early in January and the program progressed without interruption.

The 2d Coast Artillery at Fort Monroe received 316 trainees in January, and under the direction of Captain E. H. Walter intensive training was undertaken with results meeting all expectations. The strength of the regiment was depleted by the departure of 410 enlisted men in March to Fort Eustis where they will be used as cadres at the replacement center. These men were given special instruction for several months in preparation for this duty.

While recruit training has been under way in all organizations, the all-important unit training has not

been neglected. The 57th Coast Artillery carried out a tactical problem under actual field conditions which included detailed reconnaissance and selection and occupation of positions with both day and night drills in field positions. Basic and advanced instruction and artillery drill were also included.

In February the 71st Coast Artillery marched by motor convoy from Fort Story to Elizabeth City, North Carolina, and an overnight bivouac was made on the Old Fair Grounds. Armament was displayed and searchlight practice conducted for the residents of the town, with the Coast Guard furnishing the searchlight target. The regiment was alerted at 3:00 A.M. and one hour later was in movement on a tactical problem involving the defense of the Norfolk Navy Yard. The march was then continued via Norfolk and return to Fort Story.

Unit training of the 244th Coast Artillery at Camp Pendleton has been devoted to advanced training in camouflage and field fortification with emphasis being placed on the training of key men. Schools have been in operation for Master Gunners, gun commanders, motor details, etc. Gun pointers have been trained in Case II pointing by the use of a .22 caliber rifle barrel mounted on the 155 barrel. The miniature target, moving across the surface of nearby Lake Christine, proved to be a marked success. Two guns of each firing battery were placed in firing position on platforms built near the United States Coast Guard station south of Camp Pendleton for sub-caliber and service practices. Positions were fortified and camouflaged, providing practical application of previous training.

The 2d Battalion, 246th Coast Artillery at Fort Monroe conducted firing problems for the Officers' Refresher Course of the Coast Artillery School. Practically every type of seacoast and antiaircraft matériel will be used in the course of this training during the Spring and early Summer.

Extensive and varied school programs have been conducted by all regiments. Intelligence schools for officers

and selected enlisted men are under way, regimental officers' schools are held, and battery noncommissioned officers' school are in full swing. Enlisted men are studying radio, communications, and the duties of battery clerks, motor mechanics, truck and tractor drivers, cooks, and bakers.

On January 9, Lieutenant General Hugh A. Drum, commanding the First Army, visited the Harbor Defenses. After inspecting Fort Monroe, the General went to Fort Story, where the 71st Coast Artillery conducted a demonstration fire with three-inch guns. During the practice, the sleeve target was brought down. The same personnel then moved to the 37-mm. guns with equally good results. General Drum commented favorably on the accuracy of the fire and requested that proper notation be made on the records of the officers and enlisted men who participated in the demonstration. At Camp Pendleton a review of all troops of the 213th and 244th Coast Artillery was held in honor of the General.

On February 20th the 57th moved from Fort Monroe to Camp Pendleton. The regiment occupied newly-constructed barracks at the new station, and the change from tents was a welcome one—particularly because of the cold weather. The 213th Coast Artillery was transferred from Camp Pendleton to Camp Stewart, Georgia, on February 22, for permanent station.

Construction has been proceeding rapidly and the favorable weather has done much to expedite completion. All new barracks and mess halls of the 246th at Fort Story have been completed and occupied. The new recreation room is complete and activities have been started. Basketball and bowling are popular. The 2d Battalion, 246th Coast Artillery, now live in heated barracks in the new camp area.

Recreation and welfare have been well organized. One afternoon each week is devoted to supervised mess games and various other forms of athletic competition. Dances are held frequently and other entertainments have also occupied the time and attention of most of the garrison.



The Coast Artillery School

BRIGADIER GENERAL FRANK S. CLARK, *Commandant*

By Lieutenant Colonel Clifford D. Hindle

Group XIII, numbering 102 officers, began a ten-weeks course of instruction in seacoast artillery on February 17th. This group was followed on March 3d by Group XIV, with 103 officers beginning their work in antiaircraft artillery. Besides these major groups, three small groups are undergoing instruction in miscellaneous subjects, bringing the total attendance in the officers' division of the School to 237.

Group XV, 104 strong, will report for duty on March 15th, and begin its instruction in antiaircraft artillery two days later.

In the Department of Enlisted Specialists are being given motor, electrical, radio, and master gunner courses, all of twelve weeks' duration. The electrical course is divided into specialties in searchlight (AA), fire control (AA), and fire control (HD).

Officer Candidate courses for selected enlisted men will begin about July 1st. There will be four consecutive courses of instruction, each of three months' duration. Each class will number 125. Upon graduation, candidates will be commissioned as Second Lieutenants, Coast Artillery Corps Reserve.

Student officers at The Coast Artillery School were hosts to the Staff and Faculty of the School and to the Brazilian Officers, at a buffet supper held in the

Casemate Club on Friday evening, the 7th of March.

Seven officers of the Brazilian Army, guests of the United States Government, arrived at Fort Monroe on February 18th to pursue courses of instruction in both seacoast and antiaircraft artillery. These officers are: Captain Origenes Soledade Lima, Captain Voltaire Londero Schilling, Captain Manuel Dos Santos Lage, Captain Sebastiao Leao, Captain Mercio Caldas, Lieutenant Darcy Alvares Noll, Lieutenant Arnaldo Dos Santos.

All of these officers are graduates of the Brazilian Military Academy. The captains, for varying periods, have been instructors at The Brazilian Coast Artillery School in Rio de Janeiro. Lieutenant Noll was Aide-de-Camp to Colonel Kimberly, recent Chief of the American Military Mission to Brazil. Lieutenant Arnaldo was instructor in machine gunnery at the Antiaircraft School in Rio, and is the son of the Chief of the Cabinet of the Brazilian Minister of War.

Lieutenant Colonel Gerald B. Robison, Director of the Department of Tactics for the past year and instructor in antiaircraft tactics since August, 1937, has recently been ordered to duty as Antiaircraft Officer on the staff of Major General Frederick H. Smith, commanding the VII Army Corps.



Fort Eustis

COLONEL HAROLD F. NICHOLS, *Commanding*

Amid the welter of construction activities, the Coast Artillery's largest Replacement Center is rapidly taking shape. Here at Fort Eustis, Virginia, we are preparing to house a maximum capacity of 12,000 troops for training and an 2,500 additional troops for training cadres and overhead.

At present, the military personnel at Eustis is small, consisting of an advance detachment furnished by the 213th Coast Artillery (AA) from Camp Pendleton, Virginia, and small cadres forming the nucleus of the 1321st Service Unit, Station Complement.

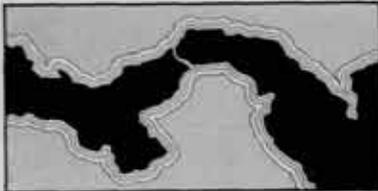
Under direction of Lieutenant Colonel C. E. Atkinson, Plans and Training Officer, a complete program of training has been prepared to be placed in operation for the intensive training of selectees in the basic subjects pertaining to both seacoast and antiaircraft artillery. Refresher courses are now being conducted for a number of battery officers who recently have been ordered to extended active duty. This group will be increased by a large group of officers who have been at-

tending the Coast Artillery School or training with Coast Artillery regiments. The total officer strength, service and training units, will approximate four hundred and thirty.

Instruction in small-arms firing will be conducted on rifle, pistol, and 1,000-inch machine-gun ranges. Provision will be made to conduct firing of all types of Coast Artillery armament.

The construction program comprises 570 buildings, including twelve large warehouses, barracks and mess building areas for the service unit and fifteen training battalions, fifteen large recreation buildings, two theaters, ten school buildings, an 850-bed hospital and various other administrative buildings. A laundry, bakery, cold storage plant, five guardhouses and six Post Exchange buildings are included.

Once more Fort Eustis prepares to train men for national defense—the erection and organization of a great Coast Artillery Replacement Center moves forward swiftly and smoothly.



Panama Coast Artillery Command



MAJOR GENERAL SANDERFORD JARMAN, *Commanding*

By Captain Franklin B. Reybold

The Panama Coast Artillery commanded by Major General Sanderford Jarman has once again reorganized. With the reorganization the Command will consist of two brigades, each under the command of a Brigadier General, and each being made up of three regiments. It will permit concentration of command in geographical areas and greater decentralization. The same commander and practically the same staff and many of the unit commanders have initiated and nursed through infancy the various progressive steps in this organization of six regiments from two mixed regiments. Each step had its field test. No bright ideas built it but practical necessities and hard work in the field.

Realizing the importance of furnishing trained men for the new outfits, a Recruit Training Center, commanded by Captain Lamar C. Ratcliffe has been set up at Fort Amador. This camp houses and trains every new arrival to the Panama Coast Artillery Command, each recruit being required to complete satisfactorily a period of five weeks' training. Only the basic fundamentals are taught to the new men, but these basics make men of definite value to the organization when first assigned. Many of the more recently assigned recruits have had various degrees of training along specialists' lines which makes them of great future value. On December 31, the first group of one hundred recruits arrived at Fort Amador and began their training. Some, who were well qualified in the necessary subjects, were turned to duty prior to the end of the five weeks' course. The success of this centralized training is definitely established, and the opportunity to make practical use of the classification system has proven most valuable.

As these recruits emerge from their camp and start training with one of the many organizations, they are faced with a scene of intense activity. Those organizations situated far out in the dense jungle are putting the finishing touches on their personally constructed barracks, mess halls, day rooms and what have you. Starting their construction in September, 1940, and faced with difficult problems of supply, transportation and sanitation, every jungle position now has suitable barracks and other buildings to house and feed its men. Building throughout the entire rainy season and combating the dreaded malaria were no simple tasks, but the men overcame these obstacles, and they are justly proud of their efforts. Much to the surprise of distinguished medical authorities who doubted the possibility of successfully controlling malaria and who advised against the sending of men into these dense

jungles at the beginning of the rainy season, malaria never once has threatened to take a strong hold and cripple the command. General Stayer, Chief Health officer of the Panama Canal, has frankly stated that the Panama Coast Artillery Command has accomplished what was once believed impossible. Due only to conscientious effort on the part of every Coast Artillery individual and the tremendous assistance of the Medical Corps was an accomplishment such as this made possible. In building over 230 buildings, the average number of construction injuries was expected, but even with inexperienced men to do the job the number was exceptionally low. Construction, however, is only one activity which may come to the attention of our raw recruit.

With the new allotments of ammunition, towing missions and armament, a problem of far greater proportions than ever before confronts the Panama Coast Artillery Command. Daily training of personnel is a primary requirement of each organization. Schools for the training of height-finder operators, intensive instruction in the way of extension courses and schools for all battery officers, and special refresher courses for chiefs of range sections have been held. The several posts and regiments have instituted such schools as are necessary for the training of their personnel in radio, motor operation, Diesel operation, meteorological data and master gunner's functions. Gunners' examinations for all members of the command have been completed and many questions asked by the students after completing their exams have aided in an improvement of local defense. With the arrival of new type sound locators and 37-mm. guns, additional intensive instruction was required. To test the proficiency of the training of all organizations on their armament, target practices to be fired under difficult conditions have been arranged.

Battery O, 4th Coast Artillery, under the command of Captain Arthur Roth, fired its annual target practice from Battery Murray, two 16-inch barbette guns. Aerial spotting was used in addition to the usual terrestrial spotting, and proved to be quite satisfactory. Many Army and Navy dignitaries attended this firing and from all appearances, enjoyed it. Battery B, 1st Coast Artillery, under the command of Captain Lipscomb, fired another annual target practice from Battery Webb, two 14-inch disappearing guns. Very satisfactory results were obtained even with the usual interference from shipping lanes and poor visibility. On October 4, 1940, and November 8, 1940, Battery D

1st Coast Artillery, fired two successful practices with 155-mm. guns. Battery G, 1st Coast Artillery fired its 14-inch railway guns. The range used for firing these guns was short due to the weather conditions on the date of firing. However, the adaptability and the suitability of this type of gun to the Panama defenses were sufficiently shown. The two 14-inch guns were moved from the Pacific side to the Atlantic side for the firing.

Of further interest was the second Army and Navy joint exercise held February 12, 1941. The Navy Patrol Bombers on patrol status far out in the two oceans reported the approach of enemy naval ships, including aircraft carriers in the Pacific. Upon receipt of this message, the entire Army and Navy force of the Panama Canal was instantly alerted and an attack was launched. Army bombers attacked a target representing an aircraft carrier and the Navy destroyers and submarines went out to engage the enemy. After successfully carrying out their missions, the entire group turned about, became "hostile," and attempted to attack the Canal from various directions. Here was the test for the Coast Artillery. The antiaircraft guns successfully defended the Canal from the aerial attack and the seacoast guns broke up the attack of the Naval ships.

The Rio Hato Gunnery Camp, under the command of Lieutenant Colonel T. R. Parker, has been set up and completely organized for the firing of the annual antiaircraft target practices of some fifty organizations. The camp now houses approximately 1,000 men and plans are under way to increase the number to 1,800. Located along the shoreline of the southwestern part of Panama, and being approximately eighty-five miles from the Canal Zone, much difficulty has been encountered in the movement of personnel and in the furnishing of supplies to the camp. The first group moved by day. A large number of men and a large amount of equipment, including 3 inch guns, rations, etc., were transported by train from the Atlantic side, put on trucks, and started on their way to Rio Hato over a long and badly rutted road. The entire trip was completed in well under one day. However, due to the fact that the greater part of the road is under construction necessitating detours, and that traffic along the roads of the interior is heavy during the day, it was decided to make any future movements of equipment by night. Four guns, with prime movers and several additional trucks, under the command of Second Lieutenant R. Buehler, left Fort Amador at midnight, January 30, 1941, and arrived at Rio Hato at 5:00 AM. Having proved that such night trips, although difficult and hazardous, can be accomplished with proper care and training, all trips are now being made at night. Such movement of troops and equipment by night is valuable training for service conditions. The drivers prefer night travel because it is cooler; all grades prefer it because it is safer due to reduced civilian traffic.

This year the plan for the Rio Hato Camp is slightly

different from last year. There are two sections of the camp, each housing, at present, some 500 men. A complete permanent camp headquarters is set up and operating. The firing line this year has been greatly improved by levelling off several small hills and rolls in the terrain and cutting and clearing an area of approximately 150 by 500 yards. This enables five gun batteries of four guns, each placed in the approved tactical square, to be set up overlooking the Pacific, without obstruction of any nature. This set-up permits the several batteries to fire on targets at low altitudes and with long slant ranges, a type of fire which is expected to be used extensively in the defense of the Panama Canal. By placing these five batteries in line, several batteries will be able to fire on the same course. In addition to the five 3-inch gun batteries, there are four machine gun platoons emplaced on the beach immediately in front of the 3-inch gun firing line and two 37-mm. gun platoons in position to the right of the machine guns.

Last year the analyses of preliminary target practices were excessively delayed due to the fact that the films of the record sections had to be transported to Fort Amador for development. This year, the battery commanders will be able to see their developed film within 24 hours after firing. A dark room for the development of all film has been constructed adjacent to the records section tent. Thus a speedy analysis of preliminary practices is made possible and more accurate data can be determined for record shoots. In addition, new forms for target practice analysis have been devised by Major Deichelmann and approved by Major General Jarman. Where once the battery commander was required to labor over his analysis for several days he may now complete it in several hours.

Nearing the completion of the jungle positions, the men of the Coast Artillery have begun to place more emphasis on recreation and athletics. Captain F. B. Reybold was detailed as Command Athletics and Recreation Officer, and also to be in charge of the popular *Panama Coast Artillery News*. Each post and regiment detailed A & R officers and staffs, and once more the Coast Artillery Corps rolled into action on the athletic field. Those men located deep in the jungle are transported to their posts for participation in the various leagues. Regimental teams are being organized and trained for the forthcoming Department leagues. The spirit and morale of the men is now higher than ever before.

Through General Van Voorhis and General Jarman the showing of 16-mm. films at many of the positions was made possible. These shows are full-length feature productions with sound. The features are of 1933 to 1938 vintage, but are great entertainment for those men unable to attend the post theatres. The equipment for these talkies is transported by boat, truck, mule or man to as many of the outlying positions as possible. The reception given the arrival of the new pictures every tenth day is "colossal."



Hawaiian Separate Coast Artillery Brigade



MAJOR GENERAL FULTON Q. C. GARDNER,
Commanding

By Captain Milan G. Weber

On February 7, in a colorful ceremony, Lieutenant General Charles D. Herron turned the command of the Hawaiian Department over to Major General Walter C. Short. Colors and guidons of every unit in the Department, together with appropriate escorts, stood by at "Front and Center" while Colonel Philip Hayes, Department Chief of Staff, read a commendatory letter from General Marshall to General Herron, and the command of the Hawaiian Department changed hands. Troops in the ceremony consisted of the 1st Battalion, 64th Coast Artillery (AA), commanded by Major Harold T. Turnbull. Shortly after the ceremony, General and Mrs. Herron, together with their daughter, Miss Louise Herron, sailed for the mainland. General Short was invested with the rank and title of Lieutenant General at noon, February 7.

BRIGADE COMMANDER'S INSPECTION

During January, General Gardner conducted his annual inspection of the Brigade. This inspection included all troops, matériel, and buildings of the Harbor Defenses of Honolulu, the Harbor Defenses of Pearl Harbor, and the 64th Coast Artillery (AA). The Brigade Commander expressed himself as being well pleased with the generally excellent condition of the entire command.

BATTERY RATINGS, 1940

In accordance with Circular 77, W. D., 1939, the Department Commander has awarded the ratings of all Coast Artillery Batteries on Oahu based on the results of their 1940 target practices. Those receiving excellent ratings, together with the battery commanders during target practices, and the armament fired, are listed below:

A, 64th Coast Artillery, Captain C. J. Diestel, AA Searchlights.

E, 64th Coast Artillery, Captain F. T. Folk, AA Searchlights.

L, 64th Coast Artillery, Captain F. E. Day, 3" AA.

A, 41st Coast Artillery, Captain D. D. Martin, 8" Ry.

B, 41st Coast Artillery, Captain W. J. McCarthy, 8" Ry. (Knox Trophy).

A, 55th Coast Artillery, Captain W. I. Brady, 155-mm.

DEDICATION OF FORT BARRETTE GATE

A stone memorial gate erected at Fort Barrette from

funds donated by the heirs of the late Brigadier General John D. Barrette was formally dedicated at a ceremony which took place on February 21. Colonel E. B. Walker, commanding the Harbor Defenses of Pearl Harbor, introduced the participants in the ceremony and accepted the gate on behalf of the War Department. Major General Fulton Q. C. Gardner outlined the career of the late Brigadier General Barrette who was Acting Chief of Coast Artillery in 1918 and in command of the Hawaiian Coast Artillery District (now the Hawaiian Separate Coast Artillery Brigade) from 1921 to 1924.

Three daughters of General Barrette were present during the ceremony: Mrs. M. P. Chadwick, who dedicated the gate; Miss Elizabeth Barrette, who unveiled the bronze plaque; and Mrs. Wm. T. Sinclair, whose daughter, Miss Louise Sinclair, cut the ribbons before the participants entered and inspected Fort Barrette. Troops of Battery C, 15th Coast Artillery, commanded by Captain R. S. Spangler, participated in the ceremony.

TARGET PRACTICES

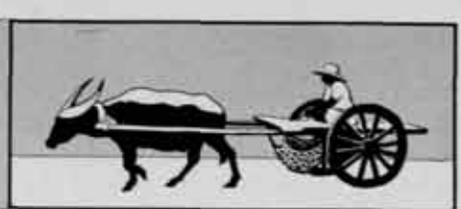
The 64th Coast Artillery, commanded by Colonel C. K. Wing, was the first to begin the 1941 target practices in this Brigade. First to command "Commence Firing" was Captain K. E. Tiffany commanding Battery I which fired a .30 caliber AA machine gun practice at Camp Malakole on February 19th. Immediately following this practice, Battery B, 41st Coast Artillery commanded by Lieutenant W. J. Hodges, fired an additional assignment .30 caliber practice at the same place. On February 20th, Battery B, 15th Coast Artillery commanded by Lieutenant R. A. Janowski, conducted a practice at Fort Kamehameha with 12-inch barbette guns. This practice, the first fired here with maneuver of the target, was begun with vertical base tracking; a change to horizontal base tracking was made as an added service condition in the middle of record fire.

NEW BARRACKS AT SHAFTER

Officers who have served at Fort Shafter will be interested in knowing that two barracks, with a capacity of 440 men each, are now being constructed. The old wooden barracks of Battery I are being torn down in part to make room for the new barracks. Twenty-four sets of quarters for non-commissioned officers are also being erected at Fort Shafter.



Corregidor



COLONEL JOHN LEE HOLCOMBE, *Commanding*

By Lieutenant Colonel S. McCullough

In spite of the clouds on the horizon (both weather and political), the last two months have given us the delightful weather that the Philippines are noted for at this time of the year. Practically no rain, clear . . . sometimes almost cloudless . . . days, and cool nights have been the rule.

The most important part of our annual training program is now in progress. Nearly every day the noise of heavy artillery and antiaircraft can be heard as the firing batteries swing into action. Some batteries have already completed their practices and the usual high standard of performance is being maintained. Antiaircraft searchlights light up the sky at night as both American and Philippine Scout batteries conduct drill in preparation for their record target practice. Outdoor training has reached its peak.

Field exercises in connection with Philippine Department Annual maneuvers have been somewhat more extensive than in past years. A total of about forty days have been devoted to different phases of this maneuver. Quite a number of our officers and men have been on duty. All forms of military training are emphasized to keep in step with the gravity of the situation here in the Far East. We are not worrying too much about this but are taking all precautions to be ready. Since the great majority of officer replacements now arriving in the Philippines are reserve officers the necessity of emphasis on training and schools can be appreciated. It has been found necessary to carry our training into the afternoons, so now all military personnel on the rock work in the afternoons on week days.

In the realm of sport, a rather ambitious recreation program is carried on in spite of the increase in training requirements. King Baseball climbed back on the throne on January 1st and now reigns supreme. Interbattery baseball schedules are being carried out in each regiment and the baseball diamonds hum with activity. Keen interest taken by the soldiers is evidenced by the number of rooters that turn out. In December, interbattery field and track meets were held in each regiment. Following this, in the American Division, the 59th Coast Artillery won an inter-regimental field and track meet with the 60th Coast Artillery (AA) by the close score of 48 to 39. In the Philippine Scout Division the 91st Coast Artillery (PS) defeated the 92d Coast Artillery (PS).

The Post Recreation Officer continues to put on excellent boxing smokers which are enjoyed by members of the command. A boxing smoker with several bang-up

fighters was put on in December between the 91st Coast Artillery (PS) and 92d Coast Artillery (PS) with honors about even. The Bilibid prisoners also put on a boxing smoker during this period and some amusing and hard fought contests were presented.

In December the enlisted men's golf tournament was played at Nichols Field. Master Sergeant Carter from this post carried off the championship while Staff Sergeant Northrop won the consolation flight. We claim this is a good record for a post that has only a small golf course for these men to train on. First Lieutenant Kappes joined the hall of fame by making a hole-in-one on No. 2 Hole.

The sound of heavy firing in Manila Bay—breath of life in the nostrils of the old artilleryman—disclosed to all who might hear that the 59th was again indulging in its most interesting phase of training. Batteries B, E, F, and G have fired their service practices, and while reports have not been submitted the preliminary computations indicate that past high standards of the regiment have been maintained. Greater ranges were used; one battery firing at 25,000 yards. To simulate service conditions during record fire all courses were maneuvering, time interval circuits were broken, smoke screens were laid down over one base end station, and batteries required to change from Case II to Case III. The excellent manner in which these problems were solved strengthens the belief that could we but entice an enemy fleet within ten miles of the guns of Corregidor we could win a war in a day.

By mutual agreement a three-game playoff was arranged between the 31st Infantry and Battery B, 59th Coast Artillery basketball teams to decide the winner of the Department Trophy. Battery B won the first two games (out of consideration for our gallant opponents we shall not publish the score) making a third unnecessary.

Battery A is leading by 1½ games in the interbattery baseball league and has 4 more games to play. Batteries F and G are tied for second place. All teams have played clean, hard, consistent ball throughout the series. Outstanding individual performances have been the pitching of Sergeant Lee of A battery and Private Kenney of E battery; the work at first base of Private Tubbeville of A battery; and the excellent all-round play of B battery's catcher, Sergeant Janicki. Prospects for the 59th team in the forthcoming interregimental and department series are bright.

The regiment has gained two officers by transfer from

the Harbor Defense Staff; Lieutenant Colonel Dorsey J. Rutherford who has been assigned as Fort Commander at Fort Drum and Captain Dwight D. Edison who has taken over the desk of the Regimental adjutant. Major Arthur K. Chambers has been transferred to the Harbor Defense Staff for duty as Artillery Engineer and Ciné Officer. We shall lose several officers with the departure of the February Transport.

Master Sergeant Joseph H. Morgan left on the transport *Meigs* for furlough in the United States prior to his retirement.

Antiaircraft machine gun practices by the 60th Coast Artillery were finally completed during the early part of December with results that were pleasing. December and the current month (January) have been devoted to preparation for target practice by the gun batteries and at this date the record practices are starting. Battery B has received its new matériel so that at least one of the three batteries enters its annual target practice without the handicap of "ancient" equipment.

The Detection Phase for gun batteries was conducted on January 10, 1941, with very creditable results.

Air Corps troops are still with the 60th, but probably all will be gone before long, as the personnel requirements of their own branch become greater daily. Their coöperation has been splendid.

In the 60th all emphasis in athletics has been put on inter-battery baseball and perspiration, the latter a result of diligent application to preparation of tactical positions. A hot contest in each of the sports is evident; only baseball, however, has produced scores which we can evaluate, and as things now stand Battery C leads the baseball pack with E and A in hot pursuit. In the offing we have regimental and department baseball and tennis. The 60th has definite intentions of being in there throughout them all.

Several members of this regiment and their families spent the Christmas holidays in Baguio and the surrounding territory, returning here in time to begin the New Year's work thoroughly refreshed by their vacations.

Sports highlighted the activities of officers and enlisted men of the 91st Coast Artillery during the Christmas holidays. Short leaves and detached service were taken by some officers of the regiment. Lieutenant Colonel Biggs (Cav.), who piloted the 2d Battalion, 91st Coast Artillery (PS), transferred to head the 3d Guard Battalion, 92d Coast Artillery (PS) and, at the

same time, is director of the Prison Stockade. Lieutenant Colonel Martin who relinquished his responsibilities to Colonel Biggs is now Commanding 2d Battalion, 91st Coast Artillery (PS). Master Sergeant Dangzala who at one time was a gold medalist in rifle competition in the United States in 1917-1918 was retired on November 30.

All organizations in the 91st have been training intensively for their annual target practices. A and G have just completed their practices and the results are most gratifying. The other batteries are now about ready to go to bat and many home runs are expected when "commence firing" is given by the Battery Commander.

Battery A led the field for 1940 athletic supremacy with a total of 4,307 points with Battery G in second place totalling 3,614 points. This is the second consecutive year that Battery A has been pronounced the winner.

The 91st Coast Artillery's baseball league is now well under way with Battery A (last year's winners) in the lead. Batteries G and E bringing up second and third place will probably fight it out for second place. The regimental baseball team will begin practice for the department series under the coaching of Lieutenant Shoss about February 20.

The officers of the regiment have formed a softball team, held first practice on Sunday, January 26.

The Christmas Holidays brought relaxation to the 92nd Coast Artillery but they belong to the past now. Training has been carried on intensively in preparation for record service firing of all the batteries. Battery D starts the target practice season on January 29th and we are pulling for them to even better last year's score. During December and January the regiment took a very active part in the Department maneuvers. Battery B participated as a unit while the other batteries furnished various cadres. On January 16th, Battery D, Lieutenant Kappes commanding, embarked for duty at Fort Wint.

The 92d fared well in the athletic field. By defeating the 91st, it won the Post Championship in basketball and tied 3½ to 3½ for the Post Boxing Championship. At the regimental track meet on December 17th, Battery D emerged victorious for the first time. The 92d is greatly handicapped in athletics for it has no readily available place to practice either in track, basketball, or baseball. This handicap prevents the regiment from making an entry in the baseball tournament.



First Coast Artillery District

MAJOR GENERAL THOMAS A. TERRY, *Commanding*

By Captain George R. Carey

The First Coast Artillery District continues to expand in spite of snow storms, zero temperatures, and unusual weather conditions. These conditions have created a particularly serious transportation and communications problem in the Harbor Defense of Long Island Sound with nine miles of rough and angry water between the island forts and the mainland.

Thousands of selectees were welcomed during the first months of 1941 and they may be observed daily on the parade grounds, drill fields and gun parks of all harbor defenses, learning the rudiments of the military profession. In recent weeks the garrison in the Harbor Defenses of Narragansett Bay has been augmented by more than a thousand selectees. Units of the 8th Coast Artillery are now stationed at Fort Williams, Fort McKinley, and Fort Preble.

Training proceeds at a furious pace with particular emphasis on preparations for the forthcoming target practice season. The 3d Battalion of the 243rd Coast Artillery is engaged in the preliminary phases of anti-aircraft target practice while the 1st and 2d Battalions are preparing for seacoast practices. The 10th Coast Artillery, although scarcely over its natal pains, is well into basic training. At Fort Levett a ski patrol has been formed from members of the 240th. In addition to their other duties, this patrol drills on skis twice a week, learning the tactics that proved so valuable in the recent Russo-Finnish War. One of the principal activities in the Harbor Defenses of Long Island Sound has been the training of a cadre of officers and men for the Re-

placement Center at Fort Eustis, Virginia. Target practices with the big guns at several of the forts in the Harbor Defenses of Boston are on the early spring schedule.

All new construction has been completed and beautification programs are well under way. The homey comforts of new barracks and the recreational facilities of theaters, post exchanges, and recreation buildings are sources of joy and relaxation to one and all. New buildings at Fort Rodman include a post exchange, a combination theater and chapel, and a bachelor officers' quarters.

The sub-post of the Harbor Defenses of Boston, located on Deer Island, has received official designation as Fort Dawes in honor of William Dawes who took part in the famous ride on the night of April 19, 1775 from Boston to Lexington.

The arrival and first public appearance of the Regimental Colors of the 22nd Coast Artillery was an event of real importance in the Harbor Defenses of Portsmouth.

Enlisted men of the Harbor Defenses of Portland participated in the "Soldiers' Quiz" broadcast over the Colonial Network on February 15th and again on March 1st. These programs were enjoyable to those attending and extremely profitable to those participating.

The *Sprigg Carroll*, good but ancient packet which no doubt recalls better days at Moultrie, now provides transportation across Narragansett Bay.



And now the Coast Artillery takes to skis! Patrol of the 240th.

Ninth Coast Artillery District

MAJOR GENERAL HENRY T. BURGIN, *Commanding*

Up on Puget Sound, Fort Casey, after being deserted for a number of years, is again garrisoned by troops—the 1st Battalion of the 14th Coast Artillery. The 2d Battalion remains at Fort Worden, along with the 248th Coast Artillery, while the 3d Battalion, when activated, is expected to garrison Fort Flagler. At present the recreational facilities are inadequate, but the morale of troops is excellent. Most of the selectees are from the middle west and they are enjoying life on the Sound, especially the Saturday boat ride down to Seattle in the *Virginia V*. All phases of training are progressing as scheduled. Excellent target practice results are expected.

In Oregon, the 249th Coast Artillery climaxed its battalion phase of hikes and field maneuvers by literally picking up the camp on the Clatsop dunes and marching to its new home at Fort Stevens. The old fort is booming with activity and is proud of its large cantonment erected on schedule despite the "unusual" soaking Oregon winter gales. The 18th Coast Artillery is eagerly waiting for its allotment of selectees and is anxious to begin training.

At Fort Winfield Scott, the departure of the 65th Coast Artillery (AA) left vacant barracks that were soon filled by units of the 6th, and the 2d Battalion of the 18th Coast Artillery. The selectees comprising the new units are middle westerners who were duly impressed with the Golden Gate, and are buckling down to the task of defending it. The combination of excellent barracks, fine climate, and the nearby ultra-friendly City of San Francisco, makes the morale problem very easy. The training is progressing rapidly and despite the trained men lost to the cadres, all local armament is properly manned.

In the District's newest post, Camp McQuaide, is the 250th Coast Artillery. This famous California regiment has taken root in its old training camp and is assisting in the defense of Monterey Bay. Every phase of training is progressing at top speed despite weather that has given the residents of the Camp the name of "McQuaide Mudders." This mud, however, recently saved the Regiment a noncom when he slipped and a heavy tractor ran over his leg. The treads just pressed the leg deep into the mud and as a result Sergeant Rayner sustained only minor bruises.

As usual, double energy goes into small arms practice. (The men of the 250th are well known at the Camp Perry National Matches.) Recently their ten-

man pistol team headed by the Colonel himself won an annual army match over such outstanding teams as the 30th Infantry and 76th Field Artillery. Also on February 22nd they were second in the 6th Annual National Defense Matches in San Francisco, being beaten only by the Marine team. Sports activities are many and the basket ball team is of championship caliber, winning in both Army and Civilian Leagues. The Santa Cruz paper said, "We can see that the 250th Coast Artillery is going to be league asset number one, physically, esthetically and financially—and if the National Defense is as good as that of the artillerymen the country is safe for democracy."

The Third Coast Artillery at Fort McArthur has all the problems connected with training new units. The movie industry, in the current wave of military pictures, calls for help from the willing garrison, and the War Department training film unit also keeps after the photogenic Third. The Fort also has the experimental Army Band, conducted by Mr. Leopold Stokowski. Needless to say, those band concerts are something to hear. The training of the selectees is making rapid strides and all armament is manned. However, instruction is not entirely devoted to soldiers, because the training of dogs to augment and supplement the security of Fort MacArthur is under experiment. Colonel Kimberley states that "because of the rapid expansion going on in the Army, the present personnel available for security has been taxed to the limit and the aid of trained dogs should prove invaluable. The use of these animals in guarding important localities in a military area is not new. The system has been used with great success by many foreign armies." Several excellent animals have been donated for this work and the progress of this experiment will be watched with great interest.

Fort Rosecrans is getting a large amount of justified attention in the expansion plans on the Pacific Coast. The garrison has been greatly increased. All new units have been housed in a cantonment excellently placed on the ridge of Point Loma. Rainy weather has not been a great hindrance because the hills and type of soil do not present a drainage problem. As a result, both building and training programs have moved as scheduled. Nearby San Diego, long a famous Navy town, is taking a great deal of interest in the Army. The City Federation of Music has aided the post in furnishing vaudeville and other types of amusement for the soldiers, who have been enthusiastic in their appreciation.



Fort Bragg

COLONEL CLAUDE M. THIELE

Commanding 34th Coast Artillery Brigade

By First Lieutenant William M. Smoak

The 67th Coast Artillery, a robust youngster activated July 1, 1940, and expanded into a two-battalion, mobile regiment February 10, 1941, went into action for Pathe's cameras the day after its expansion. The problem dropped into its lap was a hot one for a recruit outfit, that of firing night practice at a target towed by plane and then switching to a land target towed in simulation of attack by tank.

The tank target some 900 yards in horizontal range was towed at five to eight miles an hour and was illuminated by searchlights placed 2,000 yards on the flank. An elevation of thirty mils and fuze range of only one second were employed to bring bursts on the target. Out of seven rounds fired, four hits were obtained. The second round hit the target squarely, the projectile passing through the canvas near the center; splinters from the high-explosive bursts accounted for other hits.

Another stunt pulled for the cameraman was the camouflage of a 50-caliber machine gun in a collapsible hut. A farmer in typical dress was placed astride a log near the door and the cameras ground as he chewed straws and gazed skyward. Suddenly, he came to life and in full pantomime shaded his eyes toward a point in the sky and pounded on the door. In a flash the roof was washed off and the walls pushed down and the gun squad inside opened fire.

* * *

Shortly after the first of the year the 76th reached full officer strength and officers' schools were instituted.

Most of the cadres scheduled for other stations were held in this regiment pending the preparation of living quarters at the new stations. Latest information indicates that these cadres will not leave before the middle of March.



On February 10th the Regimental Headquarters Battery and the 2d Battalion were activated changing the unit from a separate battalion to a regiment. On this date an appropriate ceremony was held in honor of the event. This ceremony started off with a regular battalion parade except that in rear of the battalion commander were three staff lines, the regular battalion staff, the new first battalion staff and the new second battalion staff. In rear of these staff lines were the guidons for the new batteries.

After the parade, the batteries continued around the field and passed in rear of their original parade line. At proper positions corresponding to their positions in regimental formation the cadres for the new batteries broke off and took their places on the line, thus forming the new regiment. The new battalion commanders and their staffs and the new guidons then took their places and the formation continued as a regimental review.

The regiment moved out of the tents into their new barracks on February 17th and prepared to receive its complement of selectees about the first of March.

* * *

February, 1941, will go down in regimental history as one of the busiest and most important months the 77th Coast Artillery has experienced. On February 10th, the 77th expanded from a battalion to a regiment and on February 18th, the organization moved from its tent area into its new barracks. Add to this extensive cadre training, preparations to receive 1,284 selectees to complete expansion, and the arrival of 41 more officers, and it is readily seen why we are considering this a red-letter month.

All efforts have been spent training the cadres for new organizations. At present only one cadre of thirty-eight men has actually been sent out. This cadre went to the Quartermaster Replacement Center at Camp Lee, Va. On March 1, 84 men will leave for Camp Wallace, Texas as cadres for the 54th Coast Artillery Replacement Center there. Some time after that, 168 men will leave for Camp Davis, N. C. as a nucleus for the 100th Coast Artillery.

We are expecting the arrival of our 1,284 selectees and, with their arrival, will begin an intensive 12 weeks recruit training program. After that will come the highlight of the year for us—our first target practice.



Camp Hulén

BRIGADIER GENERAL HARVEY C. ALLEN, *Commanding*

By First Lieutenant William H. Witt

Although construction of the camp has been in progress since the camp was occupied last September by the first of the National Guard regiments to be called into Federal Service, training has been going at "full speed ahead"—and the tempo was stepped up considerably after the first of the year when firing practice with the three-inch AA guns was started at historic old Indianola on Matagorda Bay. Indianola, near Port Lavaca, Texas, is about forty miles southwest of Camp Hulén.

Going out a battalion at a time, three regiments already have sent battalions for intensive training at the Indianola firing point. The 211th Coast Artillery (AA), a Massachusetts National Guard regiment, was the first to occupy the firing point on Magnolia Beach at Indianola. The 211th stayed a month to do practice firing at targets towed by planes from Camp Beauregard, Louisiana, components of an observation squadron of the Michigan National Guard. The 197th Coast Artillery (AA) from New Hampshire was the second regiment to send a battalion to the firing point and this unit was followed by a battalion of the 203rd Coast Artillery (AA), a former Missouri National Guard organization.

Indianola, an ideally located firing point, has a colorful history and provides much interest for the soldiers now undergoing a year's training—many of whom have never before had more than a two-week's period of "field soldiering."

The history of Indianola dates back to 1685 when LaSalle, the French explorer, landed there while exploring the coastline of the Gulf of Mexico. He claimed the territory for France and by this act gave the United States considerable claim to title to Texas years later in the Louisiana purchase.

Here, in 1844, Prince Solms-Braunfels landed his German colonists and established Carl's Haven. A prosperous fishing business was established and Indianola, today a wind-swept beach, once was a principal Gulf seaport that ranked in importance with Galveston. Indianola had unburied dead in its streets as the result of a cholera epidemic in 1846 and later two devastating hurricanes struck the town in 1875 and 1886. The

town of 7,000 was partially rebuilt after the storm of 1875 but the last hurricane completely destroyed the port leaving only the building foundations, some of which still remain to be explored by soldiers off duty. Looming up majestically over the ruins is a huge statue of LaSalle—a landmark that serves as a staff for the flags that are run up to warn the fishing craft when the three-inch guns are firing out over the Bay.

Three of Hulén's National Guard regiments, the 203rd Coast Artillery (AA), the 197th Coast Artillery (AA) and the 211th Coast Artillery (AA) and the Regular Army's 69th Coast Artillery (AA) which moved here from Fort Crockett, Texas, have completed the initial period of basic training and are at work on more advanced training schedules while another regiment, the 204th Coast Artillery (AA) from Louisiana and two separate battalions, the 105th and 106th—the 105th from Louisiana and the 106th from Kentucky—are in the process of winding up their early training.

The training of the selective service trainees on a separate schedule is progressing as a coincidental part of the regular organizational training schedules. The 203rd, the 197th, the 211th and the 69th, have "graduated" their first groups of selectees from provisional trainee battalions into regular organizational batteries but separate basic training will continue for a month.

The construction program, now nearing completion, has transformed the former temporary summer encampment site of the 36th Division, Texas National Guard, into a modern semi-permanent city with paved streets and all the facilities of a well-organized and carefully-developed community. The camp hospital, of wood construction, is a modern city within itself, having 37 separate buildings, most of which are connected by covered walk-ways. Facilities of the camp include a tent theater that will seat 2,300; a modern bakery, laundry, a cold storage plant, incinerator, sewage disposal plant, a service club, a guest house or hotel, post office, and newspaper.

The Camp, 1,300 acres in size, is a mile west of Palacios, Texas, and fronts on Tres-Palacios Bay which connects with Matagorda Bay which in turn connects with the Gulf of Mexico.



Camp Callan

COLONEL FRANCIS P. HARDAWAY, *Commanding*

By Captain William J. Hauser

Rapidly nearing completion of its construction program, Camp Callan, the Pacific Coast's new artillery replacement center, is preparing to receive 4,976 trainees in March for the first twelve-week training program. Camp Callan was named in honor of the late Major General Robert E. Callan.

Activation of Headquarters, Coast Artillery Training Group, CASC Unit No. 1953, was accomplished on February 1. Headquarters of six training battalions and twenty-three batteries were activated on February 15.

The Camp is located on the Pacific Coast Highway, U. S. 101, fourteen miles north of the business district of San Diego, a few miles from the extreme southwest corner of continental United States. The reservation is located within the city limits of the City of San Diego, on Torrey Pines mesa. Nearby suburbs of San Diego include La Jolla, Pacific Beach, Mission Beach and Ocean Beach. Other communities within a few miles of Camp Callan are Del Mar, Coronado, Carlsbad and Oceanside.

The Quartermaster General designated Major Harry B. Schuppner, Q.M.C., to construct the camp. After considerable heavy grading, construction was started in late November. Myron Hunt and H. C. Chambers, architect-engineers, designed the camp and are supervising its construction. The W. E. Kier Construction Company has the general contract.

On December 11, Colonel Francis P. Hardaway, and Lieutenant Colonel Gordon deL. Carrington, arrived at Camp Callan. The first enlisted detachment, Regular Army personnel of the service sections, arrived and occupied quarters January 15th, and participated in the flag-raising ceremony, marking official occupation of the camp by troops of the Army of the United States.

Millions of feet of lumber have gone into the construction of one of the finest training centers of the National Defense Program. The building program is pro-

ceeding close to schedule, with the major portion of the structures near completion. Present contracts call for barracks and service units for seven and one-half training battalions, plus necessary buildings for the station complement and headquarters units. A station hospital to provide 350 beds, quarters for the medical section and nurses will soon be ready for occupancy.

Service section officers and enlisted men arrived between January 15th and February 28th.

Enlisted cadres for the headquarters units and training batteries joined on February 14 and 15. They came from Fort Worden, Fort Stevens, Fort Winfield Scott, Camp Haan, and Fort Barrancas.

Over 250 officers and 7,000 enlisted men will be operating in the 23 batteries and service detachments before the end of March. Batteries thus far authorized and organized are as follows: three batteries, headquarters; one battery, antiaircraft gun; two batteries for automatic weapons (antiaircraft); eight batteries, harbor defense; eight batteries for 155-mm. guns, and one searchlight battery.

Training facilities include 155-mm. gun ranges, a three-inch antiaircraft gun range, an automatic weapons range, a 200-yard rifle range of sixty targets, a pistol range, a 1,000-inch range, a .22 caliber range, a bayonet court and the necessary ammunition magazines, power plants, plotting rooms and observation and base-end stations.

Indoor recreational facilities will include a theatre, seating over one thousand, and recreation halls conveniently located through the barracks areas, and other units. With miles of Southern California's beaches adjoining the reservation, those who enjoy surf swimming, sun bathing and beach games will find ample opportunity for outdoor sports. La Jolla, five miles from the camp, has a splendid golf course and polo is played on a wide, firm stretch of beach sand.



Camp Edwards

COLONEL CHARLES B. MEYER, *Commanding 36th Coast Artillery Brigade*

By Lieutenant James S. Webb, Jr.

In process of organization at this time (March 1) is the 36th Coast Artillery Brigade (AA). Units which will make up this command are the 68th Coast Artillery (AA), the 198th Coast Artillery (AA), the 208th Coast Artillery (AA), and the 102d Separate Battalion Coast Artillery (AA).

Brigadier General Olin H. Longino is expected to arrive at Camp Edwards shortly, to take command of the 36th Brigade.

The 68th Coast Artillery (AA), up to full war strength in almost every department, modern in every respect, plows monthly through convoys, schools and other elements of its final training stages toward the goal of maximum efficiency.

Thirty-two junior officers left the regiment to report to the AA Replacement Center, Fort Eustis, Va. Selectees have poured in by the hundreds, been molded into privates and turned over to batteries for duty.

Schools for officers and enlisted men are running day and night, including intelligence school, stereoscopic observer's school, cooks and bakers, clerks, radio and communication schools.

Each battalion goes on a day-long convoy once a week, cooking meals en route with the new field kitchens, defending an imaginary target with guns in position and communication lines laid. This is enlarged upon twice a month when the entire regiment goes out for the day. The second week in February found the regiment at the East Taunton, Massachusetts airport where guns and equipment were displayed for thousands of interested civilians. Searchlights in cooperation with the 101st Observation squadron from Boston, Mass., gave a spectacular night "attack" demonstration. A night convoy back to Edwards concluded the maneuver. Another of the same type is planned for the end of the month with Providence, Rhode Island as the objective. These maneuvers will be followed by longer,

overnight convoys when the cold weather abates.

The 68th participated in the Air Defense Command's New England maneuvers in January when the searchlight battery defending the Newport, Rhode Island sector distinguished itself by illuminating all targets that came into the area, some of which were not picked up by the civilian observers. The entire regiment occupied Newport for one day and at the termination of "hostilities" was commended for its efficiency by Major General J. E. Cheney, chief of the Air Defense Command. Said General Cheney in a wire to Colonel C. B. Meyer, commanding officer of the 68th, "The 68th has demonstrated its ability to do its part in providing a territorial unified air defense."

Lieutenant Colonel Paul H. French, executive officer of the 68th, made a radio address from the Boston Army Base in February and the International News Service put it on their wires from coast to coast.

We look forward to target practice and maneuvers.



Second Coast Artillery District

BRIGADIER GENERAL FORREST E. WILLIFORD,

Commanding

By Major Charles Crane

The Headquarters of the Second Coast Artillery District moved on March 5, from 90 Church Street in Manhattan to Fort Hamilton, Brooklyn, New York and is now settling down in the building formerly occupied by 1st Division Headquarters.

With the departure of the 18th Infantry, the posts of Fort Hamilton and Fort Wadsworth have returned to the fold of the Coast Artillery. These two forts are garrisoned by the 5th Coast Artillery (HD), which has grown from forty men last November to a battalion at present, and will reach full regimental strength in June. Little new construction work has been required because the artillerymen have moved into quarters formerly occupied by the doughboys.

One of the many attractive features of Fort Hamilton is the Officers' Club, reconstructed and expanded in the old casemates by W.P.A. personnel directed by a designing staff that made the most of the possibilities provided by these historic structures. A dance and reception welcoming General and Mrs. Williford to the post was given on February 22d. At the same time it was a farewell party for the Infantry who departed the following week.

At Fort Hancock the housing for troops is almost completed. The officers of the 245th Coast Artillery moved to their new quarters early in February. This regiment now has been in service for half a year and training is in an advance stage except for the new selectees. Service target practices have been held all through the winter months. The 52d Coast Artillery

(Ry) is now at about two-thirds strength and will reach its maximum in June. It has been officered largely by the 602d Coast Artillery. Since the formation of the 602d Coast Artillery in 1924, all summer training of reserve officers has been with the 52d so that the amalgamation has been a logical one. All units of the 7th Coast Artillery (HD) have been activated except the searchlight battery which will come along in June. This regiment at present is divided between Fort Hancock and Fort Tilden, one battalion having recently moved to the latter post.

The mine planter *General Ord* is undergoing reconditioning preparatory to engaging in a heavy schedule to keep up with the training programs of the newly activated mine batteries in the District. The cable ship *Joseph Henry* is making many work trips necessitated by the heavy demands at the various Harbor Defenses.

At Fort DuPont the 21st Coast Artillery (HD) has been brought up to a strength of one battalion by selectees and is in the middle of first-stage training. For many years Fort DuPont has been primarily an Engineer post with only a caretaking detachment of Coast Artillery troops. In January the 1st Engineer Battalion left for its new station at Fort Devens and with the exception of the 70th Engineer Company, left the post entirely to the Coast Artillery. In February the 261st Coast Artillery Separate Battalion (HD) arrived from the Delaware National Guard. Also the 122d Separate Coast Artillery Battalion (AA Guns) arrived in the same month from the National Guard of New Jersey.

COAST ARTILLERY ORDERS

(Covering period January 1 through February 28, 1941)

Colonel James B. Crawford to Camp Davis.
Colonel William D. Frazer to 101st Coast
Artillery Brigade, March Field.

Colonel Albert Gilmore, orders to Second
Corps Area Service Command, Fort Ontario,
revoked.

Colonel Robert E. Guthrie to 20th, Fort
Cockett.

Colonel Samuel F. Hawkins to 74th, Fort
Monroe.

Colonel George F. Humbert to Miscellaneous
Station, Hollyridge, North Carolina.

Colonel Edward W. Putney to retire, Janu-
ary 31, 1941.

Colonel Willis Shippam to Second Corps
Area, Service Command, Fort Ontario.

Lieutenant Colonel Albert A. Allen to
Camp Davis.

Lieutenant Colonel Coburn L. Berry to Re-
placement Center, Camp Wallace.

Lieutenant Colonel Philip F. Biehl to
10th, Camp McQuaide.

Lieutenant Colonel Aaron Bradshaw, Jr.
to Replacement Center, Camp Wallace.

Lieutenant Colonel James D. Brown to
21st, Coast Artillery Brigade, March Field.

Lieutenant Colonel Robert D. Brown to
Camp Davis.

Lieutenant Colonel Oliver D. Bucher to
Office of the Chief of Coast Artillery.

Lieutenant Colonel Charles W. Bundy
(GSC) to Office of the Chief of Staff.

Lieutenant Colonel William R. Carlson to
10th, Camp Stewart.

Lieutenant Colonel Robert T. Chaplin to
Camp Davis.

Lieutenant Colonel Albert D. Chipman,
orders to 261st, Fort Du Pont, revoked.

Lieutenant Colonel Harrington W. Coch-
ran, detailed at Western Military Academy,
Alton, Illinois, in addition to present duties.

Lieutenant Colonel Morris E. Conable to
10th, Fort Stevens.

Lieutenant Colonel Richard H. Darrell
(Cv.) to First Corps Area, Service Com-
mand, Fort Constitution.

Lieutenant Colonel Thomas D. Davis to
10th, Fort Barrancas.

Lieutenant Colonel George W. Dunn, Jr.
to Camp Davis.

Lieutenant Colonel Percy C. Fleming (FA)
to Headquarters, Second Corps Area, Gov-
ernment Island, N. Y.

Lieutenant Colonel Percy C. Fleming (FA)
to retire upon his own application.

Lieutenant Colonel John W. Fletcher to
War Department General Staff.

Lieutenant Colonel Ferdinand F. Gallagher
to Camp Davis.

Lieutenant Colonel Roy S. Gibson (Inf)
transferred to Coast Artillery Corps.

Lieutenant Colonel Richmond T. Gibson
to Camp Davis.

Lieutenant Colonel Walter J. Gilbert to
Replacement Center, Fort Eustis.

Lieutenant Colonel Walter J. Gilbert to
retire, upon his own application.

Lieutenant Colonel Edward O. Halbert to
Camp Davis.

Lieutenant Colonel Linton Y. Hartman to
Inspector, National Guard, Reno, Nevada.

Lieutenant Francis A. Hause to 212th,
Camp Stewart.

Lieutenant Colonel Frank A. Hollingshead
to Replacement Center, Camp Wallace.

Lieutenant Colonel Lewis A. Hudgins to
Replacement Center, Fort Eustis.

Lieutenant Colonel James C. Hutson to
Camp Davis.

Lieutenant Colonel Harold R. Jackson to
Headquarters, 34th Coast Artillery Brigade,
Fort Bragg.

Lieutenant Colonel Harold S. Johnson to
263d, Charleston, S. C.

Lieutenant Colonel John F. Kahle to Pan-
ama Canal Department, sailing New York,
March 20.

Lieutenant Colonel Harry W. Lins to 8th,
Fort Preble.

Lieutenant Colonel Samuel L. McCroskey
to Camp Davis.

Lieutenant Colonel Robert N. Mackin to
Replacement Center, Fort Eustis.

Lieutenant Colonel James D. MacMullen
to Camp Davis.

Lieutenant Colonel John B. Martin to
Camp Davis.

Lieutenant Colonel Reinold Melberg to
Camp Pendleton.

Lieutenant Colonel Maurice Morgan to
33d Coast Artillery Brigade, Camp Hulon.

Lieutenant Colonel James B. Muir, Jr. to
101st Coast Artillery Brigade, March Field.

Lieutenant Colonel Gooding Packard to
39th Coast Artillery Brigade, Fort Bliss.

Lieutenant Colonel Thomas R. Phillips to
GSC with troops, Puerto Rican Department.

Lieutenant Colonel Kenneth Rowntree to
249th, Camp Clatsop.

Lieutenant Colonel John W. Russey to
Camp Davis.

Lieutenant Colonel William Sackville to
Office of the Chief of Staff.

Lieutenant Colonel Wilfred H. Stewart to
208th, Camp Edwards.

Lieutenant Colonel Edward L. Supple to
Replacement Center, Camp Wallace.

Lieutenant Colonel Louis H. Thompson to
Camp Davis.

Lieutenant Colonel Robert J. Van Buskirk
to Fort Ontario.

Lieutenant Colonel Eugene Villaret to
Camp Davis.

Lieutenant Colonel Albert H. Warren to
37th Coast Artillery Brigade, Camp Haan.

Lieutenant Colonel William W. Wertz to
38th Coast Artillery Brigade, Camp Stewart.

Major John E. Adkins, Jr. to Camp Davis.

Major Wayne L. Barker to 52d, Fort Han-
cock.

Major Edward J. Carey to Replacement
Center, Fort Eustis.

Major Clair McK. Conzelman, orders to
Miscellaneous Station, Hollyridge, N. C., re-
voked.

Major Frank J. Cunningham to 34th Coast
Artillery Brigade, Fort Bragg.

Major Dean S. Ellerthorpe to 38th Coast
Artillery Brigade, Camp Stewart.

Major Richard A. Ericson to General Staff.

Major Walter R. Goodrich to 260th, Fort
Bliss.

Major George F. Heaney, Jr. to 200th,
Fort Bliss.

Major Donald B. Herron to 101st Coast
Artillery Brigade, March Field.

Major Ephraim P. Jolls to 21st Coast
Artillery Brigade, Fort Du Pont.

Major Francis B. Kane to Rio De Janeiro,
Brazil.

Major Lewis S. Kirkpatrick, orders to Mis-
cellaneous Station, Hollyridge, N. C., re-
voked.

Major Lyman L. Lemnitzer to Head-
quarters, 38th Coast Artillery Brigade, Camp
Stewart.

Major Frank C. McConnell to Head-
quarters, 39th Coast Artillery Brigade, Fort
Bliss.

Major Donald McLean to 37th Coast Artil-
lery Brigade, Camp Haan.

Major Joe D. Moss to Office of the Chief
of Coast Artillery.

Major Paul B. Nelson to 37th Coast Artil-
lery Brigade, Camp Haan.

Major William F. Niethamer to 33d Coast
Artillery Brigade, Camp Hulon.

Major John E. Reiersen to 36th Coast
Artillery Brigade, Camp Edwards.

Major Joseph H. Rousseau, Jr. to 77th,
Fort Bragg.

Major Harold W. Smith to Camp Davis.

Major Andrew P. Sullivan to Head-
quarters, IV Army Corps, Jacksonville, Flori-
da.

Major Benjamin A. Thomas to 33d Coast
Artillery Brigade, Camp Hulon.

Major Carl F. Tischbein to Headquarters,
38th Coast Artillery Brigade, Camp Stewart.

Major Maxwell W. Tracy to duty in the
office of the Assistant Secretary of War.

Major Elmer L. C. Wegner to Camp Davis.

Major C. Forrest Wilson to 207th, Camp
Stewart.

Major Walter J. Wolfe to Camp Davis.

Major Willard L. Wright to 5th, Fort
Hamilton.

Captain Julian S. Albergotti to Camp
Davis.

Captain Kenneth O. Alberti to Camp
Davis.

Captain Stuart C. Allingham to Camp
Davis.

Captain Frederick C. Amos to Philippine
Department, sailing San Francisco, January
24.

Captain Ernest H. Aue to Replacement
Center, Fort Eustis.

Captain Cecil B. Aul to Camp Davis.

Captain William C. Barksdale to Camp
Davis.

Captain Elliott J. Barnette to Camp Davis.

Captain Robert W. Baschnagel to Camp
Davis.

Captain Willard F. Bean to Camp Davis.

Captain Daniel G. Bell to Camp Davis.

Captain Leelin A. Bemis to Replacement
Center, Fort Eustis.

Captain Ernest W. Bennett to Camp Davis.

Captain Wesley T. Benson to 6th, Fort
Winfield Scott.

Captain William C. Benton to Replace-
ment Center, Fort Eustis.

Captain Fulton D. Berry to Camp Davis.

Captain George R. Berry to Camp Davis.

Captain Carl E. Berzelius to 54th, Camp
Wallace.

Captain Walter E. Best to Camp Davis.

Captain George C. Bestor to 54th, Camp
Wallace.

Captain James C. Bice to Replacement
Center, Camp Callan.

Captain Julius W. Bischoff to Replacement
Center, Camp Callan.

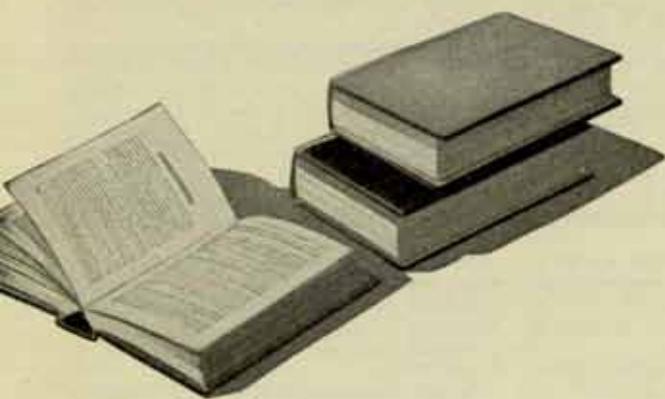
Captain James R. Black, Jr. to Camp
Davis.

- Captain Warren S. Blair to Camp Davis.
 Captain Webster I. Bowler to Replacement Center, Fort Eustis.
 Captain William Branam, Jr. to Camp Davis.
 Captain Charles J. Brandt to Camp Davis.
 Captain Robert C. Brewster to Camp Davis.
 Captain William D. Britt, Jr. to Camp Davis.
 Captain Harold A. Brusher to Camp Davis.
 Captain Norman J. Bukey to Camp Davis.
 Captain Freeman C. Buckley to Replacement Center, Camp Wallace.
 Captain Edward T. Cahill to Camp Davis.
 Captain Thomas H. Cahill to 54th, Camp Wallace.
 Captain Wofford T. Caldwell to Camp Davis.
 Captain Lawrence H. Calloway to Camp Davis.
 Captain Jans J. Carlen to Camp Davis.
 Captain Alvin M. Cibula to 54th, Camp Wallace.
 Captain Preston C. Clayton to 70th, Camp Stewart.
 Captain Andrew W. Clement to Coast Artillery Board, Fort Monroe.
 Captain John R. Clifton to Replacement Center, Camp Wallace.
 Captain Francis E. Coleman to Replacement Center, Fort Eustis.
 Captain Cleo E. Coles to Replacement Center, Camp Wallace.
 Captain Hervey D. Columbia to Camp Davis.
 Captain Henry F. Conner to Camp Davis.
 Captain Bradley M. Cooper to Camp Davis.
 Captain Clifford F. Cordes, Jr. to 52d, Fort Hancock.
 Captain Keith F. Cordrey to Replacement Center, Fort Eustis.
 Captain Frank A. Courtenay to Replacement Center, Camp Wallace.
 Captain Justin A. Courtenay to Camp Davis.
 Captain Sheldon M. Covell to Replacement Center, Fort Eustis.
 Captain George J. Cowper to Replacement Center, Fort Eustis.
 Captain John C. Cox to Camp Davis.
 Captain Edwin R. Culp to Camp Davis.
 Captain Walter J. Cummings to Camp Davis.
 Captain William F. Curren, Jr. to Camp Davis.
 Captain Isaac J. Dalrymple to Camp Davis.
 Captain Francis W. Darling to Replacement Center, Fort Eustis.
 Captain Wilfred D. Darling to Camp Davis.
 Captain Ralph Davidson to Camp Davis.
 Captain John W. Davis to 8th, Fort Preble.
 Captain Lee J. Davis to Camp Davis.
 Captain Dean R. Dickey, CA-Res., to active duty, Washington, D. C.
 Captain Fred Dixon to Camp Davis.
 Captain John H. Dodge, Jr. to Camp Davis.
 Captain Joseph C. Dolan to Replacement Center, Fort Eustis.
 Captain James M. Donohue to Camp Davis.
 Captain Raymond E. Dunnington to Camp Davis.
 Captain Laurence J. Ellert to Camp Davis.
 Captain Leonard K. Ellsworth to Camp Davis.
 Captain Carl F. Ende to Camp Davis.
 Captain Perry H. Eubank to 52d, Fort Hancock.
 Captain John E. Evans to Camp Davis.
 Captain Ralph W. Farrar to Camp Davis.
 Captain Carl H. Fernstrom to Camp Davis.
 Captain Kenneth W. Foster to Replacement Center, Fort Eustis.
 Captain Robert J. Foster to Replacement Center, Fort Eustis.
 Captain Edward M. Foxworth to Camp Davis.
 Captain Albert G. Franklin, Jr. to Camp Davis.
 Captain Ralph W. Freeman to Camp Davis.
 Captain Robert E. Frith, Jr. to Camp Davis.
 Captain Jesse B. Funchess to Philippine Department, sailing San Francisco, January 24.
 Captain William L. Gage to Replacement Center, Fort Eustis.
 Captain Andrew S. Gamble (Inf) transferred to Coast Artillery Corps.
 Captain Harold A. Gardner to Camp Davis.
 Captain Paul H. Gates to Camp Davis.
 Captain Burton R. Gilbert to Camp Davis.
 Captain William T. Gillham to Replacement Center, Camp Callan.
 Captain Malaeska M. Ginter to Camp Davis.
 Captain Arden C. Goffe to Replacement Center, Fort Eustis.
 Captain Harry McR. Gray to Philippine Department, sailing San Francisco, January 24.
 Captain Halford R. Greenlee, Jr. to 52d, Fort Hancock.
 Captain Victor L. Groff to Replacement Center, Fort Eustis.
 Captain James D. Guilfoyle to Camp Davis.
 Captain Millard W. Hannon to Camp Davis.
 Captain Harry N. Hardsog to Camp Davis.
 Captain Robert D. Harrison to Camp Davis.
 Captain James A. Hart to Camp Davis.
 Captain Leslie F. Hart to Camp Davis.
 Captain Vernon E. Harvey to Replacement Center, Camp Wallace.
 Captain Harold G. Haskell to Replacement Center, Camp Callan.
 Captain Charles E. Hennessy to Camp Davis.
 Captain Urban J. Hess to 54th, Camp Wallace.
 Captain Jesse J. Hinson to Replacement Center, Fort Eustis.
 Captain Rossiter H. Hobbs to Camp Davis.
 Captain Ralph D. Hodges to Camp Davis.
 Captain Maurice B. Hoffman to Camp Davis.
 Captain Edmund L. Holland to Camp Davis.
 Captain Darwin S. Holton to 54th, Camp Wallace.
 Captain Jack D. Hunnicutt to Camp Davis.
 Captain Paul M. Hunt to Camp Davis.
 Captain Thomas T. Hurst to Camp Davis.
 Captain Matthew A. Hutmaker to Camp Davis.
 Captain Julius Jacobson to Replacement Center, Fort Eustis.
 Captain Jason E. Jennings to Camp Davis.
 Captain Lester E. Jennings to Camp Davis.
 Captain Arnold R. Johnson to Camp Davis.
 Captain Carter S. Johnson to Camp Davis.
 Captain John B. A. Johnson to Camp Davis.
 Captain Ralph S. Johnson to Camp Davis.
 Captain Thomas W. Johnson to Camp Davis.
 Captain Ellie B. Jones to Camp Davis.
 Captain Alfred E. Kardos to 54th, Camp Wallace.
 Captain Roy K. Kauffman to Headquarters, 39th Coast Artillery Brigade, Fort Bliss.
 Captain James S. Keller to Camp Davis.
 Captain Stanley R. Kelley to Camp Davis.
 Captain Frederick D. Kenison to Replacement Center, Fort Eustis.
 Captain Elmer I. Kenneweg to Replacement Center, Fort Eustis.
 Captain Allen D. Kerr to Replacement Center, Camp Wallace.
 Captain Arthur G. Kiel to Camp Davis.
 Captain Carl W. Kietzman to Replacement Center, Camp Wallace.
 Captain Ben E. King to Philippine Department, sailing San Francisco, January 24.
 Captain Lewis S. Kirkpatrick to Camp Davis.
 Captain Harry Knox to Replacement Center, Fort Eustis.
 Captain Russell L. Koerper to Camp Davis.
 Captain Arthur Kramer to 18th, Fort Winfield Scott.
 Captain Werner L. Larson to Replacement Center, Fort Eustis.
 Captain James L. Langford to Replacement Center, Camp Wallace.
 Captain Morrill W. Leavitt to Replacement Center, Fort Eustis.
 Captain Wallace R. Leek to Camp Davis.
 Captain Hubert duB. Lewis to Camp Davis.
 Captain Richard L. Lodge to Camp Davis.
 Captain Conrad J. Lutgen to Camp Davis.
 Captain Stanley W. Luther to Camp Davis.
 Captain Roger A. MacArthur to Camp Davis.
 Captain Murry J. Martin to Replacement Center, Camp Wallace.
 Captain Richard H. Mattern to Camp Davis.
 Captain Metticus W. May, Jr. to Camp Davis.
 Captain Samuel May to Replacement Center, Camp Callan.
 Captain John Y. Mazeau to duty in office of the Assistant Secretary of War.
 Captain Clifford O. Mellin to Camp Davis.
 Captain John W. Melville to Camp Davis.
 Captain Austin W. Merchant to Camp Davis.
 Captain Oswald H. Milmore to Camp Davis.
 Captain Arthur N. Milster to Replacement Center, Fort Eustis.
 Captain Frederick C. Mohr to Camp Davis.
 Captain Dwight E. Moorhead to Camp Davis.
 Captain Samuel H. Morrow to Camp Davis.
 Captain Henry S. Morton to Camp Davis.
 Captain Thomas F. Mullaney, Jr. to Camp Davis.
 Captain Joseph D. Mullender to Replacement Center, Camp Callan.
 Captain Alfred J. Murphy to Replacement Center, Camp Callan.
 Captain Walter H. Murray to Camp Davis.
 Captain Arthur C. Musselman to Replacement Center, Fort Eustis.
 Captain Christian G. Nelson to Camp Davis.
 Captain Milton L. Ogden to Camp Davis.
 Captain Harold R. Ohlbeiser to Camp Davis.
 Captain Charles S. O'Malley, Jr. to Camp Davis.
 Captain John Parmakian to Camp Davis.
 Captain Truman E. Perrin to Camp Davis.
 Captain Milton J. Perry to Camp Davis.
 Captain Willis A. Perry to Coast Artillery Board, Fort Monroe.
 Captain James W. Phillips to Camp Davis.
 Captain Warren B. Pinney to Camp Davis.
 Captain Herman W. Pontius to Camp Davis.
 Captain Charner W. Powell to Camp Davis.
 Captain Ralph H. Pryor to Camp Davis.
 Captain Daniel A. Ranney to 54th, Camp Wallace.
 Captain Leon J. Reed to Replacement Center, Camp Callan.
 Captain James H. Riopelle to Camp Davis.
 Captain Ernest L. Rowell, Jr. to Camp Davis.

- Captain Irving H. Rowell to Replacement Center, Camp Wallace.
- Captain George W. Ruckert to Camp Davis.
- Captain Wendell P. Rynerson to Camp Davis.
- Captain Walter H. Sapp to Camp Davis.
- Captain Harry C. Sawin to 54th, Camp Wallace.
- Captain Frank N. Sawyer to Replacement Center, Fort Eustis.
- Captain Frederick F. Scheffler to 52d, Fort Hancock.
- Captain William W. Scripps to Camp Davis.
- Captain James K. Searcy to Camp Davis.
- Captain Frank N. Seitz to Camp Davis.
- Captain David F. Sellards, Jr. to Camp Davis.
- Captain William B. Semple to Camp Davis.
- Captain Charles E. Shepherd to 2d Coast Artillery District, New York City.
- Captain Charles M. Sherfesse to Replacement Center, Fort Eustis.
- Captain Donald W. Shive to Camp Davis.
- Captain Harold M. Shumate to Philippine Department, sailing San Francisco, January 24.
- Captain Frank R. Singer, Jr. to Camp Davis.
- Captain Bailey B. Smith to Replacement Center, Fort Eustis.
- Captain Eugene Smith to Replacement Center, Fort Eustis.
- Captain Herman R. Smith, Jr. to Camp Davis.
- Captain William C. Smith to Camp Davis.
- Captain George F. Snodgrass to Replacement Center, Camp Callan.
- Captain Charles E. Snyder, Jr. to instructor, Coast Artillery School.
- Captain Russell B. Sorrells to Camp Davis.
- Captain Robert B. Southworth to Replacement Center, Camp Wallace.
- Captain Harold J. Spaeder to Camp Davis.
- Captain Cecil E. Spann, Jr. to Camp Davis.
- Captain John J. Stark to Camp Davis.
- Captain Tom V. Stayton to Headquarters, 1st Division, Fort Jackson.
- Captain Lawrence A. Strobel to Replacement Center, Camp Wallace.
- Captain Edgar O. Taylor to Camp Davis.
- Captain Victor F. Thomas, Jr. to Camp Davis.
- Captain Maxwell H. Thompson to Replacement Center, Fort Eustis.
- Captain Paul L. Thompson to Replacement Center, Camp Callan.
- Captain Kenneth M. Thrash to Camp Davis.
- Captain Harold E. Todd to Replacement Center, Camp Callan.
- Captain Harry F. Townsend to Camp Davis.
- Captain William N. Van Koughnet to Camp Davis.
- Captain Ford E. Van Voorhis to Camp Davis.
- Captain Russell Vincent to station at Seattle, Washington.
- Captain John S. Walbert to Camp Davis.
- Captain Frederick N. Walker, Jr. to Camp Davis.
- Captain John R. Walker to Camp Davis.
- Captain Alexander J. M. Wannamaker to Camp Davis.
- Captain Donald B. Webber to instructor, Coast Artillery School.
- Captain Robert E. L. Welch to Replacement Center, Fort Eustis.
- Captain Francis L. Wellenreiter to Camp Davis.
- Captain George G. West to Camp Davis.
- Captain Donald McQ. White, Jr. to Camp Davis.
- Captain Kenneth G. Wilkes, CA-Res. to active duty with QMC, Fort Ord.
- Captain Joseph B. Wilkinson to Replacement Center, Camp Wallace.
- Captain Paul T. Wilson to Camp Davis.
- Captain Joseph B. Yost to Camp Davis.
- First Lieutenant Robert F. Augut to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant Frank W. Bovee to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant Richard DeF. Cleverly to Camp Davis.
- First Lieutenant Joseph Conigliaro, orders to Miscellaneous Station revoked.
- First Lieutenant Harry DeMetropolis, orders to 52d Fort Hancock revoked.
- First Lieutenant James S. Dougherty, Jr., orders to Panama Canal Department revoked.
- First Lieutenant Perley L. Everett to Panama Canal Department, sailing New York, January 18.
- First Lieutenant Kenneth N. Gray to Wright Field.
- First Lieutenant Elmer E. Hallinger to Camp Davis.
- First Lieutenant Herman H. Hauck, orders to 21st Fort Du Pont revoked.
- First Lieutenant John C. Hultquist to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant Sidney Klein to Replacement Center, Fort Eustis.
- First Lieutenant Alfred R. Loos to Camp Davis.
- First Lieutenant John H. O'Toole to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant Stanley J. Owens to Camp Davis.
- First Lieutenant John B. Pattison, Jr. to Camp Davis.
- First Lieutenant George W. Percy to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant Edward F. Peck to Fort Du Pont.
- First Lieutenant Nicholas P. Prime, CA-Res. to active duty, Fort Monroe.
- First Lieutenant Charles W. Reeves to Camp Davis.
- First Lieutenant Robert E. Rouze to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant William G. Thompson to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant Wallace W. Thurston, orders to Panama Canal Department revoked.
- First Lieutenant George J. Treacy to Philippine Department, sailing San Francisco, January 24.
- First Lieutenant Robert J. Verde to Philippine Department, sailing San Francisco, March 15.
- First Lieutenant William T. Weaver to Panama Canal Department, sailing New York, February 18.
- First Lieutenant Albert F. Werner to Camp Davis.
- First Lieutenant Oliver E. Wood to Camp Davis.
- Second Lieutenant Kenneth H. Bayer to Camp Davis.
- Second Lieutenant Robert McC. Carswell, Jr., CA-Res., orders to active duty revoked.
- Second Lieutenant Thomas H. Corey to 6th, Fort Winfield Scott.
- Second Lieutenant Sidney G. Fisher to Camp Davis.
- Second Lieutenant Charles E. Fuqua to University of Kansas, Lawrence, Kansas.
- Second Lieutenant Charles M. Gilbert to Camp Davis.
- Second Lieutenant William K. Gillmore to Camp Davis.
- Second Lieutenant Thomas F. Gordon to Camp Davis.
- Second Lieutenant Gilford D. Green to Camp Davis.
- Second Lieutenant John J. Guy to 22d Fort Constitution.
- Second Lieutenant Rolland W. Hamelin to Camp Davis.
- Second Lieutenant John E. Hart to Camp Davis.
- Second Lieutenant Harold D. Higgins to Camp Davis.
- Second Lieutenant Andrew M. Lundberg to Panama Canal Department, sailing New York, February 18.
- Second Lieutenant Edison A. Lynn, Jr. to Camp Davis.
- Second Lieutenant Harold Maloney to Panama Canal Department, sailing New York.
- Second Lieutenant Henry A. Miley, Jr. to 57th Fort Monroe.
- Second Lieutenant James M. Moore to Camp Davis.
- Second Lieutenant Elmer A. Neely to Panama Canal Department, sailing New York, February 18.
- Second Lieutenant Burton A. Neuburger to Panama Canal Department, sailing New York, February 18.
- Second Lieutenant Robert G. Platt to Camp Davis.
- Second Lieutenant Albert P. Richards to Camp Davis.
- Second Lieutenant John C. Tredennick, orders to 57th Fort Monroe revoked.
- Second Lieutenant Everett H. Ware to 18th Fort Winfield Scott.
- Second Lieutenant Kulon E. Yelverton to 244th Camp Pendleton.



BOOK REVIEWS



War in the Desert

ALLENBY: A Study in Greatness. By General Sir Archibald Percival Wavell. New York: Oxford University Press, 1941. 301 Pages; Maps; Illustrated; Index; \$3.50.

It is a rare thing in warfare for a book by a successful commander to appear while he is in the midst of his campaigns. Commanders usually wait until the fighting is over before they appear in print. But there is no criticism to be attached to General Sir Archibald Wavell because his book, *Allenby: A Study in Greatness*, comes off the presses while he himself is going Allenby one better. Actually, General Wavell has been engaged for some time in writing Allenby's life. It was his original intention to publish a biography in two volumes, the second to cover the period of Allenby's career from the close of the World War until his death. But the war prevented the author from finishing his work, and so the single volume now issued closes with the end of the World War.

In the circumstances, it is most natural to read the pages of this book with a constant watch to see what light it throws on General Wavell's successes in Libya. And though his book is primarily a straightforward, thoroughly readable biography, rather than a treatise on any particular aspect of modern warfare, much light of the kind the reader will look for is to be found.

A splendid example is the passage dealing with pursuit, which has reference to Allenby's pursuit of November 8-18, in 1917:

To the uninitiated pursuit seems the easiest possible form of war. To chase a flying, presumably demoralized enemy must be a simple matter, promising much gain at the expense of some exertion and hardship, but little danger. Yet the successful or sustained pursuits of his-

tory have been few, the escapes from a lost battle many. The reasons are partly material, but mainly moral. A force retreating falls back on its depots and reinforcements; unless it is overrun, it is growing stronger all the time. And there are many expedients besides fighting by which it can gain time: bridges or roads may be blown up, defiles blocked, supplies destroyed. The pursuer soon outruns his normal resources. . . . He may possibly be able to feed himself at the expense of his enemies or of the countryside; he is not likely to be able to replenish his ammunition and warlike equipment in the same way. But the chief obstacle he has to overcome is psychological. The pursued has a greater incentive to haste than the pursuer, and, unless he is demoralized, a stronger urge to fight. It is only natural that the soldier who has risked his life and spent his toil in winning a battle should desire relaxation in safety as his meed of victory, and that the general and staff should feel a reaction from the strain. So that, while coolness in disaster is the supreme proof of a commander's courage, energy in pursuit is the surest test of his strength of will. Few have carried out pursuits with such relentless determination as did Allenby in 1917 and 1918.

An incident illustrates his attitude in a pursuit. One of his staff brought to him early in a pursuit a draft order to the Twenty-first Corps to move to a certain line. Allenby at once scratched out the line indicated and substituted two places much farther north. The staff officer, who considered the line indicated by Allenby beyond what could be expected of the troops, pointed out that he was making no allowance for any difficulties or unavoidable delays, due to the enemy's resistance or to other causes. Allenby said, "Is it impossible for the troops to reach the line I have given?" The staff officer replied, "Not necessarily impossible, but . . ." "There must be no buts," replied Allenby. "In pursuit you must always stretch possibilities to the limit. Troops having beaten the enemy will want to rest. They must be given as objectives, not those that you think they will reach, but the farthest that they could possibly reach." And on this principle Allenby always acted.

The parallel here with General Wavell's present campaign is perfectly apparent. Allenby was a master of the pursuit and so is his pupil, Wavell.

"History, and more especially military history, is dry, misleading stuff without a clear understanding of the characters and motives of the chief actors." Thus writes General Wavell in his prologue. *Allenby: A Study in Greatness* not only shows us the character of its subject, but through emphasis and mode of writing, the character of the author. General Wavell is already close to Allenby in stature. It is surely to be hoped that one day we shall have an equally fine study of the present-day master of desert warfare. Perhaps, indeed, when we consider the fair judgment and clear writing which go to make up the present book we should hope for a work on his own campaigns by General Wavell himself.

Economic Defense

TOTAL DEFENSE. By Foreman and Raushenbush. New York: Doran and Company, 1940. \$1.25.

This is a very clever book in two parts. The first part deals with the "economic conquest of the Americas" by Germany after the totalitarian nations have triumphed in Europe. The second part gives the author's ideas on just how this campaign may best be combated.

The first part shows how easy it will be for Germany through her complete monopoly of all the purchasing and selling power of Europe to undersell and finally drive out American commerce from South America. It catalogues the wealth of the various countries and also lists the weaknesses of the commercial, social and political set-ups in their same countries. It points out how these very weaknesses may be exploited and turned to Germany's advantage.

All the defects of our own political and economic systems are carefully investigated as well. The authors, as a matter of fact, rather over-do this phase of their investigation. They magnify our weaknesses and ignore our virtues. But they make their point; that after this war, Germany if successful will have a tremendous advantage through its gigantic monopolies over our uncoordinated and often mutually jealous and competing commercial activities. When economic conquest is completed, the political conquest would be extremely simple.

In the second part of the book the authors are just as clever but whether or not just as sound is a matter of opinion. They look with alarm and disfavor on all big business. They say that Latin Americans "do not and will not respect a Santa Claus." Yet they advocate a benevolent attitude on our part that in the end would cost us billions.

The weakest part of this second section appears, to this reviewer at least, to lie in the rather loose economic thinking of the authors. The "new deal" is to be extended internationally, at our expense of course. When it is all over everyone is to be happy and contented, with the possible exception of the tax payer.

The book has one very good point. It is provocative. It makes you think. In my case it made me think that perhaps a different line of action was indicated; that the best way to meet and defeat the approaching economic assaults

of the Axis would be to use our full economic, industrial and capitalistic power to produce cheaply and undersell our adversaries all along the line. This simple solution however would be anathema to the authors, who want to help everybody in the Americas.

Primer for Citizens

WHAT THE CITIZEN SHOULD KNOW ABOUT THE ARMY. By Harvey S. Ford. New York: W. W. Norton and Company, 1941. 230 Pages; Illustrated; Index; \$2.00.

Here is a book that fulfills the promise in the title. Lieutenant Ford, who is Associate Editor of the *Field Artillery Journal*, has gone into considerable research to give the reader facts about the army. The chapter headings give a fair idea of the content: The Organization of the Army, The Enlisted Man, The Officer, The Arms, The Services, The General Staff, The Conduct of War, The Citizen and the Army.

The soldier will find nothing new here, but the citizen who is just awakening to the fact that the army has functions in addition to marching in Armistice Day parades will find many of his questions answered.

Lieutenant Ford's facts are indisputable—there may be some question about where he places his emphasis. But for the civilian, who knows little about the army and knows he knows little, this volume will prove valuable.

Nations In Durance

UNDER THE IRON HEEL. By Lars Moën. Philadelphia: J. B. Lippincott Company, 1941. 350 Pages; Illustrated; \$2.75.

To those whose imagination has made them wonder what it is like to live in an occupied country, this book is the answer. It should be especially interesting to those of our armed forces who took part in the occupation of Germany—the contrast should be striking.

Lars Moën is an American citizen who happened to be in Belgium when the German military machine overran that country. Mr. Moën did a good job of observing, deducing, and then placing his observations and deductions on paper. Both his newspaper and scientific training helped him to write an informative book.

Not the least of the commendable things about the book is the fact that the author admits that he is no military expert, and admits it time after time. Therefore his observations are not tinged nor colored with his ideas of what should have been—they are frankly and honestly nothing more nor less than the trustworthy observations of an intelligent civilian with a faculty for making friends and getting people to talk. His hearsay evidence is openly labeled as such.

Getting into the content of the book, Mr. Moën gives the impression that the German military machine is not infallible—but that it is undoubtedly efficient. The individual German soldier seems little different from the individual American soldier, except that he thinks less for

Field and Technical Manuals of General Interest

These training publications may be purchased direct from the Superintendent of Documents, Government Printing Office, Washington, D. C., or from the JOURNAL. If ordering from the JOURNAL, use the envelope which has been inserted in this issue.

FM 5-20	Camouflage	\$.15
FM 5-25	Explosives25
FM 8-40	Field Sanitation25
FM 21-6	List of Publications for Training10
FM 21-10	Military Sanitation and First Aid25
FM 21-15	Equipment, Clothing and Tent Pitching15
FM 21-30	Conventional Signs, Military Symbols and Abbreviations20
FM 21-35	Sketching20
FM 21-40	Defense Against Chemical Attack20
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TM 5-236	Surveying Tables40
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TM 9-2900	Military Explosives20
TM 10-205	Mess Management10
TM 12-250	Administration	1.00
TM 20-250	Field Music10

The following training publications are *not* for sale, but must be requisitioned through channels, if desired.

TM 10-515	The Motorcycle
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The Coast Artillery Journal

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himself, and is much more prone to worship the head of his state.

The food situation in Europe today takes a large part of the author's attention, as well it might. In the final analysis he seems to feel that feeding Europe will feed Hitler—but that starving Europe will *not* bring about revolt in the conquered countries. The Nazi occupation is much too efficient for that to happen.

As for the collapse of Germany through the defection of the military, the author believes that it is more than a bare possibility, but that it cannot be expected very soon. He is definite in his belief that the German Army has passed its peak of enthusiasm and effectiveness, and that garrison life in occupied countries is sapping its strength both physical and moral.

In the reviewer's opinion, this is a book that should be read for the information it offers—and will make enjoyable reading because of the style in which it is written.

✓ ✓ ✓

1776 and the South

ALEXANDRIANA: THE REVOLUTION IN THE SOUTH, 1768-1781. By LeGette Blythe. Harrisburg, Stackpole Sons. \$3.00.

This is a historical novel dealing with events occurring in North Carolina prior to and during the Revolutionary War. With the hero of the book and his people and friends in Mecklenburg County in the backwoods of the colony we first meet the colonial governor Tryon as he was reviewing a few companies of backwoods militia, at that time loyal to the King. The people of the colony, especially in the hinterland, felt they were oppressed and unjustly taxed by Tryon and his satellites. Here was implanted the seed of discontent that later grew into open rebellion. We are apprised of the fact that certain sections of North Carolina pioneered the movement toward independence from the mother country long before matters came to a head in New England. The first open armed and organized resistance to British rule in the American colonies occurred at Alamogordo. The first declaration of independence was made by the citizens of Mecklenburg County.

With the hero we participate in both of these historical events. We learn about the common people and life in plantations, taverns, and settlements, in the remoter parts of the colony. The only time we travel far is to visit General Washington's camp at Valley Forge, the occasion being to bring as much food as we can load on a couple pack animals, to the boys from home. Of course, hundreds of soldiers from other colonies relieved us of most of our provisions on the outskirts of camp before we won through with some of it to our friends. Food was scarce at Valley Forge. We tarry long enough to see Baron Von Steuben drill the colonials in the battle formations of the day.

The book tells of the stout resistance offered by the revolutionists of North Carolina to the British Regulars and Tories fighting under the leadership of Cornwallis and Tarleton. The Battle of Kings Mountain, which resulted in the defeat of "Pat Ferguson and the marauding Tories who came flocking to him," is described in some detail. This was one of the decisive battles of the war. The fate

Cornwallis and Tarleton advanced into North Carolina, the greater was the resistance opposed to them. Great difficulty was experienced in maintaining their line of communications and of obtaining supplies in a hostile country. The British troops suffered much from ill health. They could not come to grips for a decisive victory against the colonials who were fighting Indian fashion. After "Kings Mountain" Cornwallis decided to withdraw, and peace returned to Mecklenburg County.

A thread of romance runs through the entire story. "Alexandria," from which the book takes its title, was the plantation of John McKnitt Alexander. The hero, McKnitt's "bound-boy," was like a son to the master and mistress of the plantation.

The book does not purport to be a treatise on tactics, but contains descriptions of campaigns and battles accompanied by maps or sketches. It is a very entertaining novel.



FIND TREASON. By Richard Rollins. New York: William Morrow and Company, 1941. 291 Pages; Illustrated; Index; \$3.00.

Buttressed with reproductions of correspondence, membership cards and other pertinent data, this book tells much of the story of the totalitarian drive in the United States. The assorted megalomaniacs and musical comedy dictators who flash across its pages, as well as the sordid tale of hate, graft and exploitation that the book reveals, make strong reading for any citizen who has faith in the democratic way of life.

The unbelievable part of Mr. Rollins' book concerns the sympathy with which the activity of these foreign agents and naive dupes is treated. Few people in high places seem interested in the revelations that have been made in the newspapers and in Congressional hearings.

Mr. Rollins writes in a manner that convinces the reader of his sincerity. The book is as interesting as a combination of an adventure story and a novel could be, and the presentation of facts adds to, rather than detracts from, the interest and suspense.

Recommended both for edification and readability.



THE CADENCE SYSTEM OF TEACHING CLOSE ORDER DRILL. By Colonel Bernard Lenz. Harrisburg: Military Service Publishing Company, 1940. 108 Pages; \$1.75.

Intended not to replace, but to supplement, the new Infantry Drill Regulations, the 1940 revision of *The Cadence System of Teaching Close Order Drill* contains many helpful hints to the instructor. The cadence system has been used to a great extent since World War I—this volume shows the instructor how to get the most out of the system. The book is replete with diagrams showing the proper placing of the feet for many of the movements.

If there is any criticism of the book, it is that it does not duplicate much of the material in the IDR.

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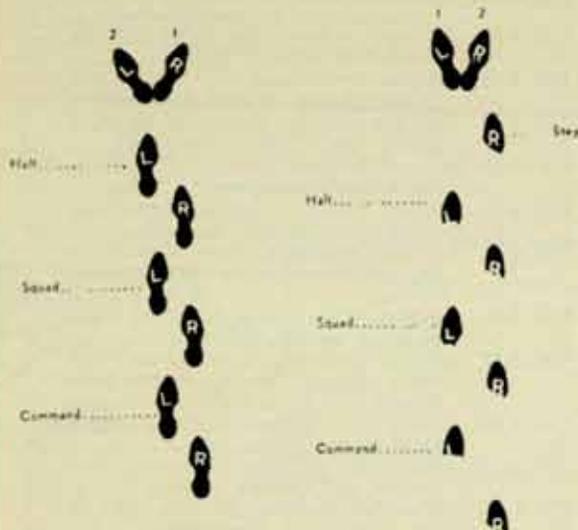
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Here is the long-awaited revision of Colonel Moss' popular bible for the newly-assigned or inexperienced officer. As in the older editions, Colonel Moss goes into the subject thoroughly and in a manner easy to understand. The author's sympathetic understanding of the problems of the junior officer makes the book especially valuable.

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This latest revision, though very complete, still retains some of the flavor of the army of thirty years ago; many officers would question the propriety now of some of the advice given. However, it is still one of the best works on the subject.

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TERROR IN OUR TIME: The Secret Service of Surprise Attack. By Richard Wilmer Rowan. New York: Longmans, Green and Company, 1941. 438 Pages; Index; \$3.00.

The book is good—well-written, replete with information about the new methods and results of spying, counter-spionage and propaganda—but to the military mind, laboring under the delusion that today's wars are fought in an honorable manner, with troops, matériel, and blockades, the disillusionment is shocking.

This is recommended reading for every officer. The officer who doesn't believe in secrecy, the officer who is willing to give the enemy the benefit of the doubt, and the officer who believes everything he reads and hears will do well to read this volume to learn that things are not what they seem.

Perhaps the world in general and the United States in particular is not honeycombed with spies, saboteurs, and traitors—but after reading *Terror In Our Time* one isn't sure. The author gives logical explanations for the fall of Czechoslovakia, Poland, and the other submerged nations—Ethiopia, the Irish terror in England, the case of General von Fritsch and many more incidents are treated. We must give Mr. Rowan credit for a complete and logical work, even if we cannot attest to the truth of the facts from which he draws his conclusions.

✓ ✓ ✓

RIFLE MARKSMANSHIP. By William L. Stephens. New York: A. S. Barnes and Company, 1941. 88 Pages; Index; \$1.00.

The conscientious small-bore marksman requires this book for his library; any marksman will find it valuable. Although Lieutenant Stephens did not write the book for the soldier, there is much that is valuable for our riflemen. For ROTC teams, rifle clubs, or even the unorganized civilian interested in learning how to shoot, this work is recommended.

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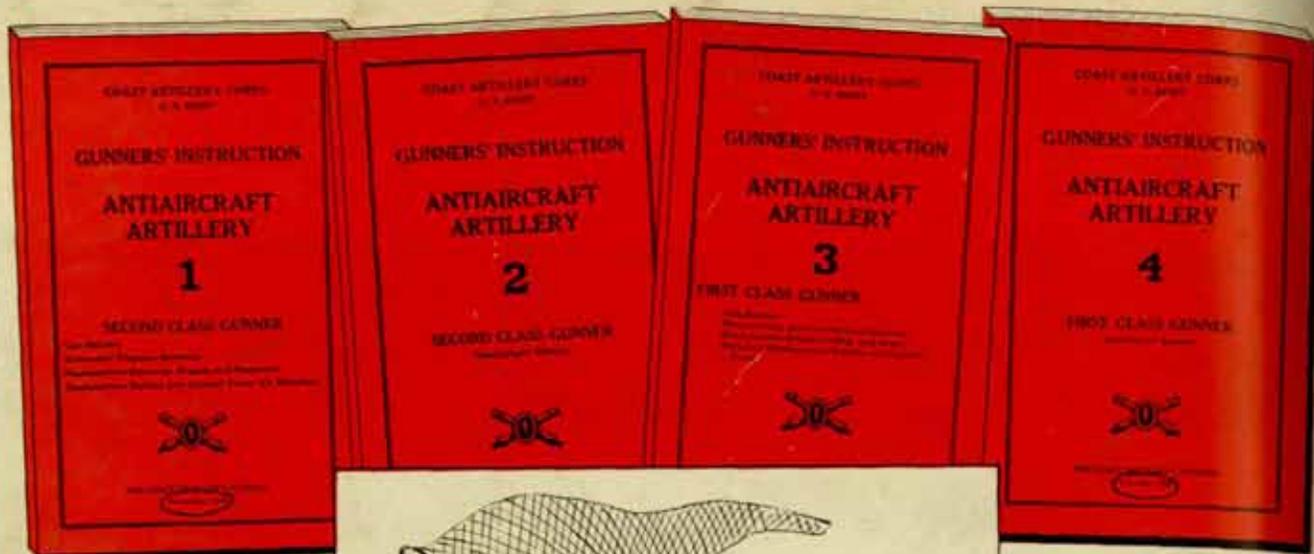
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