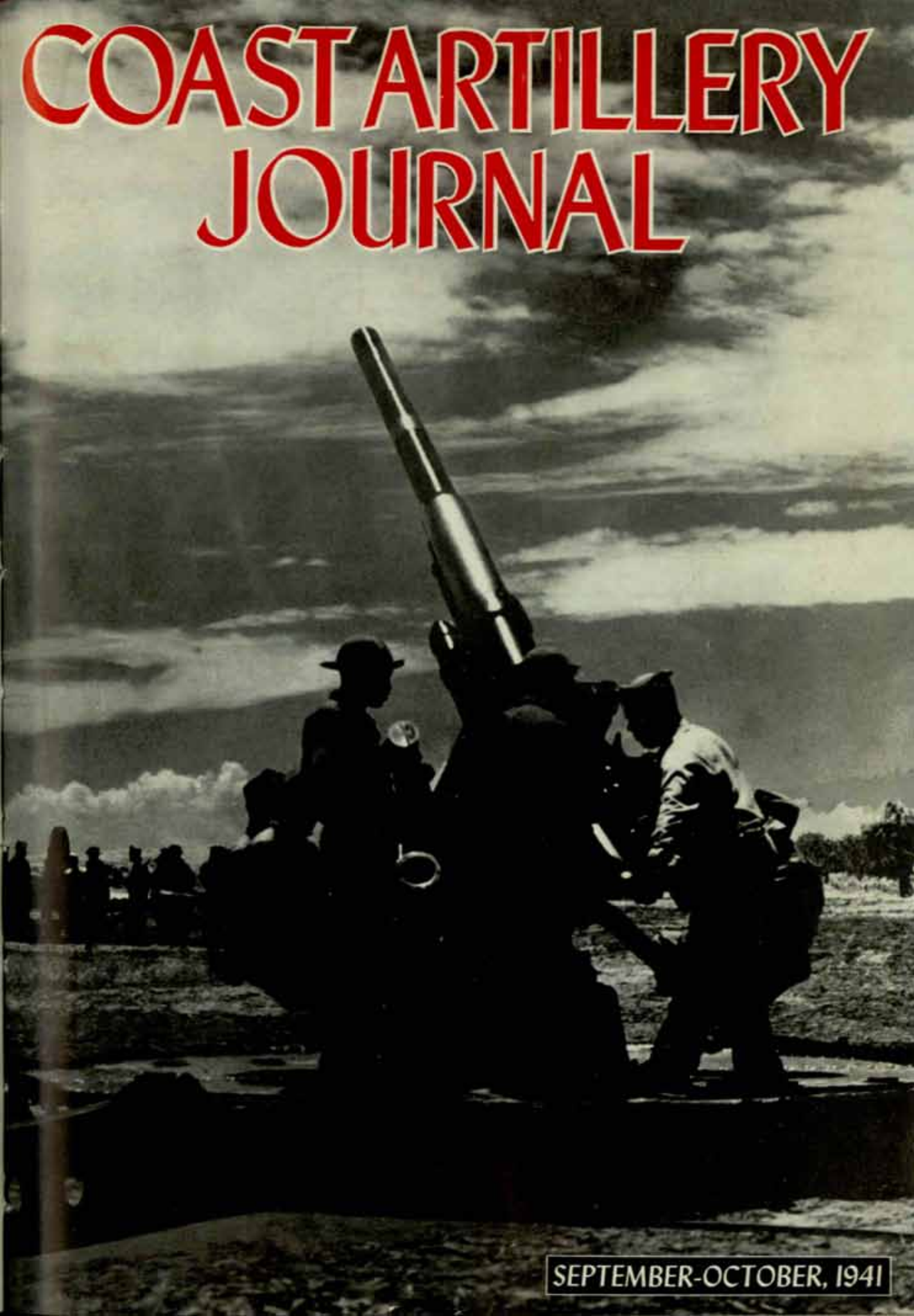
COAST ARTILLERY JOURNAL



SEPTEMBER-OCTOBER, 1941

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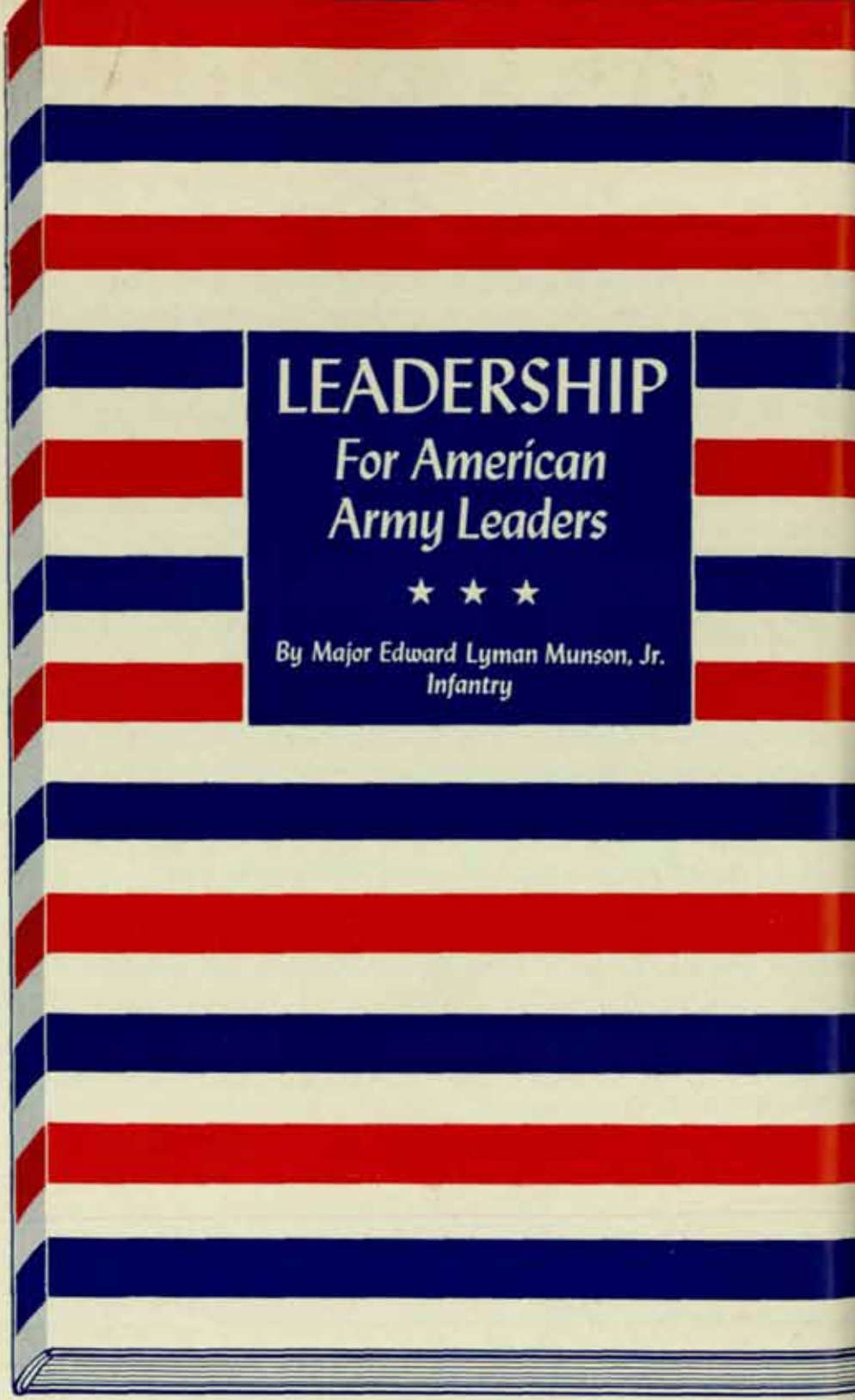

The new leaders of the Army of the United States finally have a helpful and brief discussion of the personal problems they must meet in directing and dealing with the American fighting man. Here are some passages from this new book:

. . . A word of slang may convey meaning more concisely and vividly than any other term. This is particularly true if within the leader's unit some slang term or nickname is in constant use. What particular good does it do to speak of "weapons-carriers" if they are known to every man as "jeeps"?

. . . It is not likely that there will ever be a unit in our army or any other which will deserve a wholesale reprimand. . . .

. . . The reward of competition should not be a silver cu numerical rating, or a streamer for the guidon; the reward be the satisfaction resulting from the achievement of a high of training.

. . . To demand courtesy from a subordinate and to fail turn it in full measure is to indicate either an arrogance or of interest that has no place in leadership. . . .

COAST ARTILLERY JOURNAL

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British Antiaircraft Defense

By DRYLAW

On April 21st the following official statement was made on the results of Antiaircraft fire up to that date:

"British Army antiaircraft guns have destroyed over 1,000 enemy aircraft since the beginning of the war.

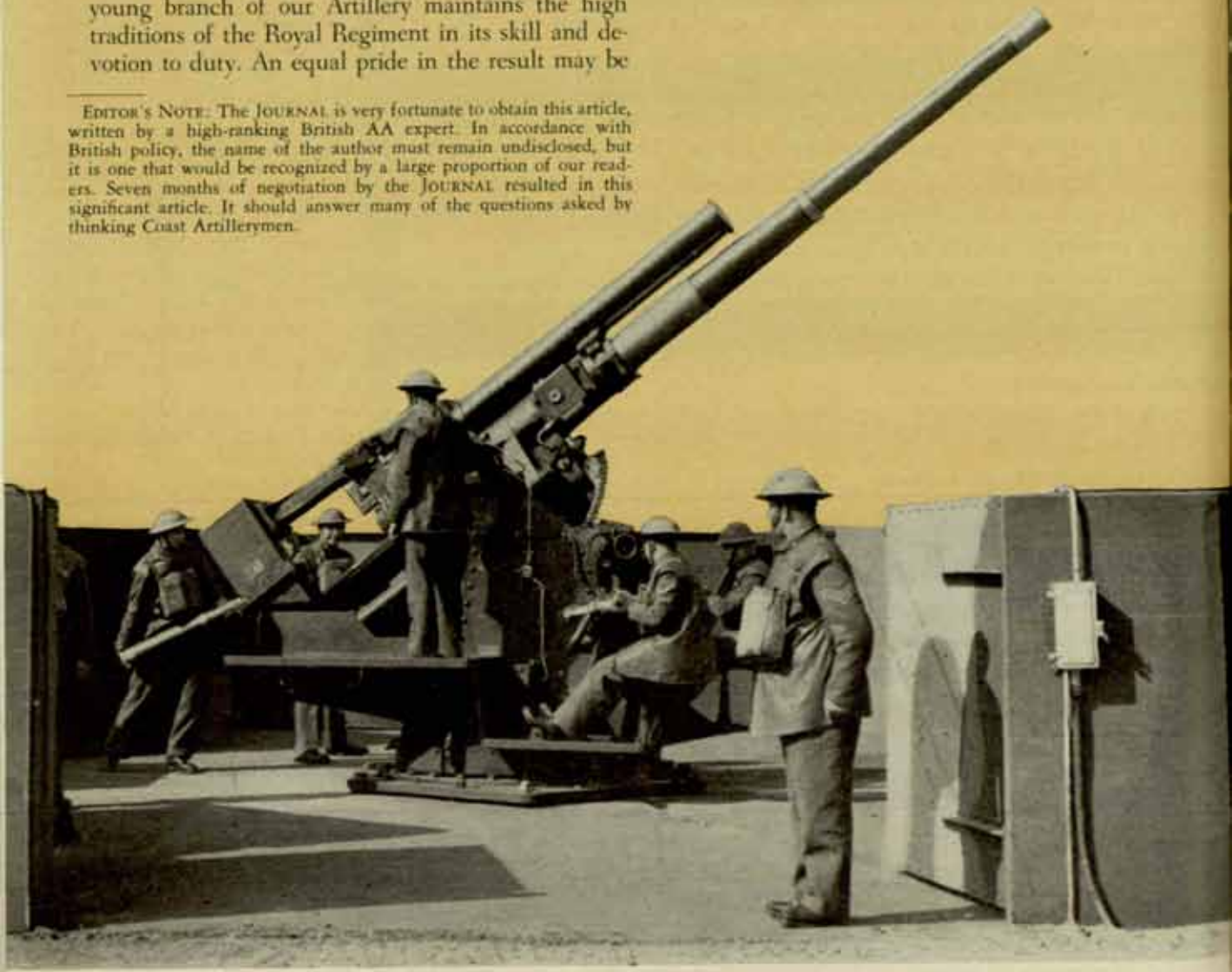
"Five hundred enemy aircraft have been definitely shot down by antiaircraft gunners in the British Isles and many others in Malta and the Middle East.

"Their achievement shows that this comparatively young branch of our Artillery maintains the high traditions of the Royal Regiment in its skill and devotion to duty. An equal pride in the result may be taken by the workers in the factories which have produced antiaircraft guns, predictors, shells and other scientific equipment on which the batteries depend."

Since that date a further toll has been taken both at home and abroad.

The figure, which may seem somewhat small in comparison with the very large numbers destroyed by fighter aircraft, is nevertheless a considerable one, and one of

EDITOR'S NOTE: The JOURNAL is very fortunate to obtain this article, written by a high-ranking British AA expert. In accordance with British policy, the name of the author must remain undisclosed, but it is one that would be recognized by a large proportion of our readers. Seven months of negotiation by the JOURNAL resulted in this significant article. It should answer many of the questions asked by thinking Coast Artillerymen.



real account in relation to the campaign as a whole. Further, it does not take into account the number of aircraft which have been seriously damaged—probably to the extent of never getting home. For instance, very recently wreckage of an aircraft with A.A. shell splinters in the fuselage has been found floating some 300 miles from the scene of attack.

Apart from mere numbers brought down there is the consideration of the large numbers of enemy aircraft which, owing to A.A. defenses (both guns and searchlights), have failed to accomplish their mission. How many attacks would have been pressed home but for the presence of A.A. defenses? How many attacks have never developed at all because of their very presence?

The above points are not brought out in order to suggest that there is no room for improvement or that perfection has been attained.

Far from it—A.A. Defense, if it is to justify itself must be in a constant state of development, battening on all that science, experience and ingenuity can offer it. Organization and training must be such as to assimilate all such developments.

It is fair to say that progress in all directions is being made and that one after another the problems set by the elusive enemy are being grappled with. Already in the relatively short period of the campaign there have been many changes of procedure arising out of new developments and new enemy tactics. Nevertheless the results already attained suggest that the general conception on which the defenses were built up in peace time was a sound one. For this reason, before describing war experience it will be of value briefly to trace the growth of the defenses in the years prior to the war.

History

Antiaircraft Defense emerged from the World War of 1914-18 with a somewhat checkered reputation. In the circumstances this was readily understandable. Prior to 1914 little attention had been given to the subject and the stress of a campaign does not lend itself to the development of a new branch of the Service or of an elaborate and complicated technique.

Small wonder, therefore, that the result was not of a startling nature, and the significance of what results were obtained was not appreciated by people not conversant with the full facts.

Yet certain salient factors did emerge:

(i) Night fighter squadrons in France, assisted by well organized and well trained searchlights accounted in a few months for some twenty-five enemy aircraft at the cost of a single fighter.

(ii) The London A.A. Defenses, in which the organization of fighters, guns, searchlights and the intelligence system had been developed over a large area, accounted for a considerable number of enemy aircraft. From May, 1918 onwards the attacks on London ceased. In fact, from the summer of 1917 the enemy was forced to resort to coming only by night.

(iii) The number of rounds required to bring down an aeroplane by A.A. gun fire, though admittedly always to be reckoned in thousands rather than in hundreds, showed a continuous diminution throughout the campaign, and this despite the improvement in the performance of aircraft. Analysis of these improved results showed a direct relationship to success in developing mechanical methods of calculating fire data, as opposed to pure "eye" shooting.

It remained to be seen whether these broad lessons of the 1914-18 campaign had application to combating the modern aircraft, with its vastly increased performance both in speed and ceiling. Could such increases be adequately offset by the development of mechanical means of fire control and improved weapons?

In times of peace, and consequential financial stringency, it was not an easy task to break down the very understandable hesitation to embark on the expensive research and much heavier consequential production expenditure to create defenses on an adequate scale—defenses which many people considered unlikely to be worth the effort involved. Nevertheless, once the necessity for A.A. defenses was accepted there was no looking back either then or since.

PEACE TIME DEVELOPMENT PERIOD

Equipment

The legacy of the 1914-18 campaign in terms of equipment left little that was likely to be of value twenty years later against modern aircraft.

Firstly there was the problem of the A.A. gun. The problem was a sufficiently clear one, if not easy to solve. The main requirements were maximum weight of shell combined with minimum time of flight for a given range. There were obviously many other considerations and limiting factors in the practical solution especially as at least a proportion of the equipments must be on a mobile basis. Our solution as regards the mobile equipment lay in the 3.7" gun, whilst heavier natures were evolved for the static rôle.

War experience has proved that the adoption of the 3.7" equipment was a correct solution. A combination of even higher muzzle velocities and smaller shell would not have proved nearly as effective in practice and as regards mobility the equipment has shown itself capable of "keeping up with the hunt" even in the more fluid conditions of the campaign.

The heavier static equipments have also lived up to expectations.

Similarly, fire control apparatus had to be developed in relation to the performance of the new equipments and to cope with the high speeds of modern aircraft. This latter factor introduced of itself the very important problem of reducing the period required for collecting fire data to a minimum. Otherwise it would have been impossible to develop adequate fire at all.

A further consideration was the problem of dealing with the low-flying aircraft—the solution of which in the last war, apart from balloons, had been sought only in terms of light automatics. Although light automatics

have taken a not inconsiderable toll of the enemy in the present campaign, something more was required, of greater range and killing power. For this reason the 40 mm. Bofors gun of Swedish design was adopted. This has proved a first class weapon, when handled by practiced detachments.

Finally, there was the problem of the provision of more modern searchlights and means of directing them in their search for the target.

The technical developments in the pre-war period outlined above did not differ substantially from those of other countries. Research had naturally been proceeding for many years, but there remained the difficulty of building up the large production program to meet the demands for very large numbers in the relatively short time before the outbreak of war.

When the history of this period is written in full the results will be a striking tribute to British Industry.

Organization

Although it is a truism that all measures of Air Defense both active and passive must work in step and be constantly coördinated if a balanced and economic system of defense is to be evolved, yet it is clearly impossible, however desirable, in a modern state to concentrate all these activities under one department.

In the circumstances the operational control of all the active defenses was vested in the Air Ministry, the War Office being responsible for producing gun and searchlight units. Similarly, the Home Office undertook the responsibility for developing the civil Air Defense organization. The above procedure did not involve, as many people imagined, plurality of control. Adequate inter-departmental liaison and coördination was maintained throughout. As in most things in life, practical compromise suited to facts is better than theoretical but illusory perfection.

Apart from the A.A. units designed for use with Field Force the defenses at home were on a Territorial Army basis, that is to say that the members of each unit carried out a number of drills per year and a period at camp, which, as regards the gunners, included yearly firing practice.

A period of energetic development ensued in many and varied directions. Drill halls had to be built, large numbers of regular instructional staffs organized, practice camps expanded, gun and searchlight sites chosen, whilst behind these activities were the problems of speeding up production. Delays there were—some which were avoidable and others which were inevitable to the development of a new and vast organization. Very large numbers of men came forward, impatient to get on with the work of defending their country. No wonder there was sometimes a feeling of impatience at the apparent slowness of progress.

In addition there were the considerable operational problems of determining the scale of defenses for each locality and allotting priorities to their completion, whilst behind this work was constant scientific research and development. This period with all its disappointments can be looked back upon as one of real achievement.

One of the features of the Territorial system was the impossibility of maintaining the units on their war sites —often at a considerable distance from the center of population. This introduced a somewhat complicated problem of deployment. However much the period of deployment could be shortened, it nevertheless meant that the country was very largely unprotected against sudden and unprovoked air attack, a possibility which could not be entirely discounted.

The crisis of 1938 afforded an opportunity to practice the deployment. As might be expected, numerous defects revealed themselves, not defects, however, which could not be overcome. However, it was an invaluable rehearsal.

Nevertheless, the disadvantages of a deployment at a moment of crisis, however smoothly it could be carried out, could not be overlooked.

In 1939 it was accordingly decided to maintain a proportion of the defenses constantly manned and in instant readiness to deal with sudden attack. This in itself was a highly satisfactory move and, further, the permanent element of the defenses served as an excellent framework on which to deploy the remainder.

So much for the pre-war period of preparation. Looking back at it in the light of all that has followed after there was perhaps one theoretical tendency common to times of peace which war experience alone could rectify into what actual practice demanded. This is perhaps worthy of comment although in many ways one which was to be expected.

From the somewhat crude methods of the last war, our technicians were continuously striving to evolve methods of calculating fire data which determined the future position with great exactitude, provided of course the target behaved itself during the time of flight of the shell.

The future position, as the Commander of the French A.A. Defenses in the last war put it, is in fact "a triple infinity of hypotheses."

It was right to aim at perfection on a basis of the most probable of these hypotheses, but there was a tendency to decry rough and ready means of fire, even as a secondary method. War, with all its elements of uncertainty, demands an elasticity of action which is apt to be forgotten in times of peace. Conditions of war soon demanded auxiliary methods of fire control which not only contributed to the morale of the detachments but in fact were instrumental—the wrong word if taken in the mechanical sense—in bringing down one of the first aircraft destroyed.

However, whatever tendencies were right or wrong during the peace time period—and, to be fair, the majority were right—they were soon to be put to the acid test of war. On that September morning, who remem-

bered that moment of pre-vision on the part of a German statesman as far back as 1925—"If there be no change of heart then night falls over Europe"?

The War Period

As far as Antiaircraft Defenses are concerned the campaign so far can be conveniently regarded in three main phases:

(i) An initial period lasting for some eight months when raiding was on a small scale.

(ii) Operations in the field.

(iii) The period of heavy day attacks over Great Britain, followed by the night "Blitz."

The First Phase

Contrary to expectations the declaration of war was not accompanied by large scale raids on this country. Londoners will, however, remember the experience of the first sirens on September 3rd, 1939, a few minutes after that fateful eleven o'clock. It was a false alarm, but none the less a test of the public reaction to the expectation of a devastating raid. This reaction was almost studied in its calm and even not without its comic side. The writer listened to an expert explaining at considerable length exactly what each noise was and how, given his experience, it was possible to separate out the 3.7" from the 4.5" burst and again exactly which were bomb explosions, and yet the source was merely doors being slammed upstairs.

Scotland was the first objective of attack. On October 16th the Forth was raided; little or no damage was done and several raiders were brought down, a mixed bag attributable to both fighters and A.A. guns. The pursuit of the enemy low down over the Edinburgh chimney pots was yet another chapter in its stormy history.

The following day Scapa was raided, again with results of little consequence. One gun site secured a direct hit at under a thousand yards' range, which was good or bad luck, depending from which point of view the matter is looked at.

Little happened thereafter until there were further raids on Scapa, in which the strongly reinforced defenses demonstrated their power to break up the attack.

This period of calm was in some ways a difficult one for the defenses. After the first flush of excitement it was difficult to maintain the alertness of detachments

continually waiting for an enemy who never appeared.

It was, however, by no means a period in which no progress was made. The defenses were strengthened from new production of equipments, communications were extended, and units given extra training as far as circumstances permitted.

Field Operations 1939-1940

Early in the spring the interest began to be focused on Norway, as a prelude to the greater happenings in France. The Norwegian campaign gave little scope for the antiaircraft defenses, not that they were not required, but that it was impossible in the circumstances to build up an adequate defense organization.

If nothing else the campaign proved the necessity of such an organization before a land force can hope to disembark and act to advantage. Nevertheless valuable individual lessons were learnt, and those units which got into action took a good toll of the enemy.

France

The scene now changes to France. Firstly the landing and deployment of the Field Force. These moves naturally called for A.A. cover under somewhat difficult circumstances.

The problem initially was one of defending the ports of disembarkation and thereafter to move forward the A.A. screen to cover the subsequent advance of the Field Force to its concentration area. In fact the period was a quiet one, though anxious enough for those concerned.

The ensuing winter was also quiet enough—ominously so. There was little in the way of shooting for the A.A. except some high reconnaissance aircraft and sporadic activity by night. Nevertheless the period was a useful one. It was possible to establish organized air defense communications, liaison with the French A.A. defenses and to carry out general training.

In the spring came the advance into Belgium and the subsequent breakthrough of the enemy, ending as far as the Field Force was concerned in the evacuation from Dunkirk.

At once the static and more or less centralized nature of the A.A. defense layout changed to one of decentralization and movement. Units were continuously on the move fighting day and night and often taking part in the land battle. There are stories of isolated searchlight detachments holding up the enemy with rifle fire, of Bofors equipments taking a toll of enemy tanks. In their main rôle, however, the A.A. defenses had plenty to do. It is not possible to assess the exact number of aircraft brought down by A.A. fire, but no claim was accepted other than an aircraft on the ground or one confirmed by independent witnesses. A conservative estimate suggests a total of at least 400. In one instance there were five dead birds round a Bofors detachment.

Whatever the exact total may have been, experience in France proved conclusively that the antiaircraft units, although small in numbers, not only took a considerable toll of the enemy, but acted as a strong deterrent to air attack.

As is always the case in war, success lay not only in the excellence of the apparatus or the technique of fire control but also on those age old requisites of a soldier: discipline, steadiness and sound drill. Antiaircraft defenses call for these qualities in special measure as by their very nature they consist of a number of comparatively small stations under the command of junior officers and N.C.O's. However centralized the control, ultimate success or failure depends on a number of small detachments facing up to quick decisions followed by even quicker action. Further, time and again it was shown that the units who got the big results were those who let the birds come into the guns. There is always a tendency to get excited and engage the target out of range or in conditions when it is difficult to hit. Not only does this tendency lead to unnecessary expenditure of ammunition, but it undermines the confidence of detachments in the efficiency of their weapons. Nothing is more demoralizing than to see the birds flying unscathed through the fire—and there is no reason why they should.

Apart from these general moralizings, experience showed how quickly the unit which had been well trained in peace time got over any stage fright and settled down to the business of war.

The last phase at Dunkirk was particularly trying and the strain on the detachments was particularly severe—almost continuous firing after long days and nights of movement.

So much for France—much equipment had naturally to be abandoned, but a large proportion of the personnel got away to be reconstituted in England. Some of them emerged from quite unexpected bolt holes, including the South of France.

Great Britain

As an immediate corollary to the fall of France was the imminence of invasion of these islands, and as a preliminary would doubtless be an attempt to beat down the air defenses of this country. The work of years was soon to be put to the test.

Fortunately there was a period of respite, which as far as the A.A. defenses were concerned meant the reforming and reëquipping of the units returned from France and hastening as far as possible the output of new equipments.

The occupation of France by the enemy meant of course that many localities hitherto relatively immune from attack came into range of hostile aircraft operating from aerodromes across the Channel. This fact implied somewhat delicate problems of planning in order not to be involved in undue dispersion. Fortunately the mobile element of the defenses enabled within limits the redistribution of resources at will.

Early in August day raiding on a large scale com-

menced, increasing in intensity as a prelude to the clear intention of the enemy to launch his invading armies.

This is not the place to describe the magnificent exploits of the Royal Air Force or to point out how much this country owes to their prowess. This is already one of the "high spots" of history, and the passage of years will only serve to accentuate the importance of these two months' air battles.

The A.A. defenses in their own sphere were no less busy, and there were few units in the South of England that did not find themselves fully occupied. Broadly speaking the targets were either very high—over 20,000 feet—or low-flying aircraft attempting to destroy aerodromes, etc. In addition there were areas such as Dover where it was possible to count on rough shooting of all natures, and the local defenses as soon as they had their eye in took a remarkable toll of the enemy.

Considerable success was also achieved against the really high targets. A case in point was a certain defense which dropped two birds from 25,000 feet with seventeen rounds. Of course such results were exceptional, but the whole experience of the period points to the wisdom of having equipments with a good performance up to these very high altitudes.

Similarly there were cases of equally satisfactory results against low-flying attacks.

The general lessons to be derived were substantially the same as had been found in France. Success lay in sound training and fire discipline. Again this success depended ultimately on the junior officers and other ranks.

The day raiding ran its course with great losses to the enemy, losses which culminated in the calling off of the invasion by the enemy. Towards this major setback to the enemy the A.A. Defenses made a not inconsiderable contribution. The history of 1918 repeated itself; the enemy had to resort to the cover of darkness.

The Night "Blitz"

"From things that go bump in the night—good Lord deliver us."

Night attacks on a large scale naturally introduced problems concerning every measure of air defense both active and passive, and the whole organization of air defense in its widest sense was put to a severe test.

In fact the night attacks served to prove what our manuals had emphasized before the war, namely that air defense problems should be approached from an analysis and development of passive measures before the appropriate active defenses in terms of fighters, guns, etc., could be kept in proper perspective. In the day raiding period the success of the active defenses had been such as to distract attention somewhat from the vitally important passive defense organizations. These now came into their own, and the wisdom which had led to their provision showed itself fully justified. Yet, and this governs all, the fact that the enemy has not achieved the success he expected by his attacks lies fundamentally in the courage of the individual citizen, a courage which lies in the very roots of the race.

The above may seem a digression from the activities of the A.A. defenses, but none the less it is the background against which alone all that has happened since can be seen in true proportion.

The main element of air defense whether by day or night is the fighter aircraft. By night the fighter must, however, be given the means to hunt the enemy and deliver his attack. An elaborate searchlight organization had been evolved for the purpose. This was satisfactory enough within certain limits, but meteorological conditions imposed very severe restrictions on their adequate handling. Further, increased altitudes and speeds of target made very severe demands on the technical handling of searchlights. For this reason the value of searchlights is apt to be underestimated.

The handling of A.A. guns by night introduces technical problems of considerable complexity, but ones which are by no means insoluble. Reasons of security do not permit relating how these problems are being approached, but results show that considerable progress has already been made. However, to revert to our story.

On September 11th, 1940 Londoners for the first time since 1918 heard massed gunfire. It certainly electrified the enemy, who shot up many thousands of feet like a frightened covey of partridges. The tonic effect on the population was also remarkable. It is the old story—a virile community will stand a lot as long as it feels the enemy is getting it back.

The night "Blitzes" spread from London elsewhere and there are few, if any, of our major townships which have not had their share, and without exception they have stood up to it. So the battle goes on, and as it goes on the life of the night bomber gets more unpleasant. It is rash to prophesy, but there are signs already that the enemy is feeling disquiet and that the war of nerves is by no means a one-sided affair.

Such is the big picture, but in its make up is the day-by-day, not to speak of the night-by-night, activities at the gun and searchlight sites themselves. It will not therefore be without interest to quote from actual experiences at these gun sites.

The first is from a gun station commander on the East Coast, the second from a sergeant in charge of a Bofors gun.

"There are two 4.5" guns at my station, together with their attendant instruments, and the hundred men who look after them. These are the big guns of the A.A. They make a big noise and when their shells burst anywhere near an aeroplane that aeroplane is reported missing.

"The other night there were a lot of planes over at about 12,000 feet, and we were firing barrages. Instructions from the control center of the zone were coming

in to the telephone dugout underneath where I stand and being shouted up to me when the bombardier in charge of the instruments called out, 'I've got a lovely target here, sir. Can we take it?' It was an aircraft coming into our area at only 8,000 feet. 'All right,' I said, 'switch on to it.'

"We only had to fire two rounds.

"One of my many jobs is to watch for the effect of the shots. What makes that difficult is that the aeroplane is nearly always invisible. It's the instruments that find it and report its course. But when this second round had been fired the invisible aeroplane became visible with a vengeance. There was a terrific flash which lit up the clouds, showers of sparks, orange-colored streaks from the tracer bullets which she was carrying, and at last lumps of blazing wreckage tumbling down.

"However, bits of jam like that don't often come our way. Usually we see nothing of the damage we do, though that doesn't mean we're wasting ammunition. Reports of planes flying badly on their way home or found in the sea show that we're not, besides our own observations of formations being turned back.

"We've had regular raids on our port. The warning usually goes at dusk, when I've finished tea in the bungalow which is my mess. The men double out, I run across to the gun-pits, and all guns and instruments can report ready for action in 52 seconds. Then we wait.

"There are two gun-pits, of concrete; I stand in a command post behind them. Reports are coming in to me all the time through the central control from the close network of observers which covers the country. When aircraft come near we begin to mark their paths on our map, red for enemy, blue for friendly, brown for unidentified. If they're only in small numbers we may be ordered to attack them singly.

"It may seem that we have little chance of hitting single aircraft until you realize that our shells can knock anything down within 90 feet of them when they explode, and disable at much greater distances. On the other side of the picture is that on a clear night an alert pilot can see the gun-flash and have time to alter course before the shell reaches him.

"Often we don't aim at a single plane; we put up a barrage at a certain height and place. Sometimes we may be firing barrages for hours and a strenuous time is had by all. We can put eight rounds a minute into the air and besides the noise of them there are the telephones going and the incessant shouting of fire orders. I remember a formation of seven enemy aircraft coming into our area. We put up a good accurate barrage—we and the other batteries in our zone—and the aircraft turned back. Those aeroplanes must have had a ton or two of the bombs aboard. Well, wherever else they dropped those bombs, they didn't drop them on our port."

Now for the Light A.A. Gunner:

"We have our own method with our searchlights; we hold them until Jerry's quite close and then snap them on so it blinds him and we get in three or four bursts with the Lewis and Bofors guns before he has time to do anything. By this method we've spotted as many as eighteen targets a night—some of them three or four planes at a time. I've seen myself three brought down at night within the last two or three months. One of these we followed with the light after we'd hit him; he seemed to be breaking to pieces in the sky as though tracer bullets were coming at him all over his body. One day this month we sank one and crippled another within a quarter of an hour, and the heavies finished off the crippled one.

"Something ought to be said about the searchlight men. Our light guns couldn't do anything without them at night, and they're always on the job. One night our lights got a plane that was coming back from the West and our chaps were holding him till we had him in range. While they were doing that another plane came in from the East and dropped a bomb within 50 yards of the light. It didn't half whistle down. But the men on the lights never worried; they held Jerry, because they knew we were waiting for him."

A.A. Abroad

Leaving the home coverts for the moment it will be perhaps of some interest to review the A.A. happenings abroad. Malta has shown what a powerful and concentrated A.A. defense can do. The Italian Air Forces have on many occasions had their fill and more.

The Middle East has produced interesting A.A. experiences, both in mobile warfare and in the more straightforward problems of the defense of bases. The picture of Greece and Crete is not yet a fully clear one, but one clear lesson emerges and that is the need for a high scale of defense. It is, however, gratifying to hear in almost any communiqué dealing with air activity that the A.A. defenses are inflicting losses on the enemy, not to speak of their indirect influence in preventing enemy attacks being pressed home unmolested.

Conclusion

The middle of a campaign is no time to draw exact conclusions from events—they are too close. All that can be done is to chronicle them and, with full knowledge that we are living too close to them, to attempt to guide future developments onto the right lines. There are many directions in which progress can and is being made. Fortunately much that has already transpired does give us clear indications of the lines to pursue. Looking back, we can say that the foundations of our A.A. organization were sound and that the results have justified the effort put into it and that it has played an important part in the much larger problem of air defense as a whole. The orphan of the 1918 storm has now grown to maturity, and wherever the scene of battle there will his services be required—in ever increasing quantity.

A History of the COAST ARTILLERY CORPS

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

"There are two delusions which seem to be misleading in this country. One is that torpedoes (mines) can be depended upon to protect the accumulated wealth of three hundred years, that is located along our seaboard and navigable rivers; and the second is that our coast of four thousand miles in extent can be defended by a navy."—*Lieutenant General Nelson A. Miles, 1895.*

PART I

Any genealogy of that fraternity of specialized toilers in Uncle Sam's vineyard known as the Coast Artillery Corps, United States Army, must show a family tree that grew from an English acorn planted in the sandy soil of Tidewater Virginia nearly two and a half centuries ago.

As far back as 1700 the adventurous colonists of his most Britannic Majesty, charged with the safekeeping of those crown properties of the new world named in honor of England's Virgin Queen, had decided that coastal fortifications were needed against possible foreign aggression. The problem of finding the most strategic location for a key fort was finally solved in terms of that sandy spit that projects into the Chesapeake Bay at the confluence of the James and York Rivers, called Old Point Comfort; and here in 1711 were 70 cannon mounted behind makeshift breastworks. In 1728 these gave way to the more formal ramparts of a carefully planned scheme of defenses that were completed four years later and royally named Fort George. However awe-inspiring this bit of construction may have been to earthly enemies, it proved to be of no account at all against those celestial agencies that control hostile wind and rain; in 1749 a hurricane came whirl-

ing up from the southward and when the sand and spume had settled, there was hardly enough left of Fort George to make a convincing ruin.

Had the fort been rebuilt and adequately manned through the next few decades it might have changed the whole course of our national history. But it wasn't; the course of empire passed it by to put a colonial capital at Williamsburg, and finally to attempt to establish a naval base up the York River. So a French fleet was able to swing in through the Virginia capes and unimpeded land the white-uniformed legions that would help Washington run to earth the mighty Cornwallis at Yorktown, and so establish our independence in fact as well as theory.

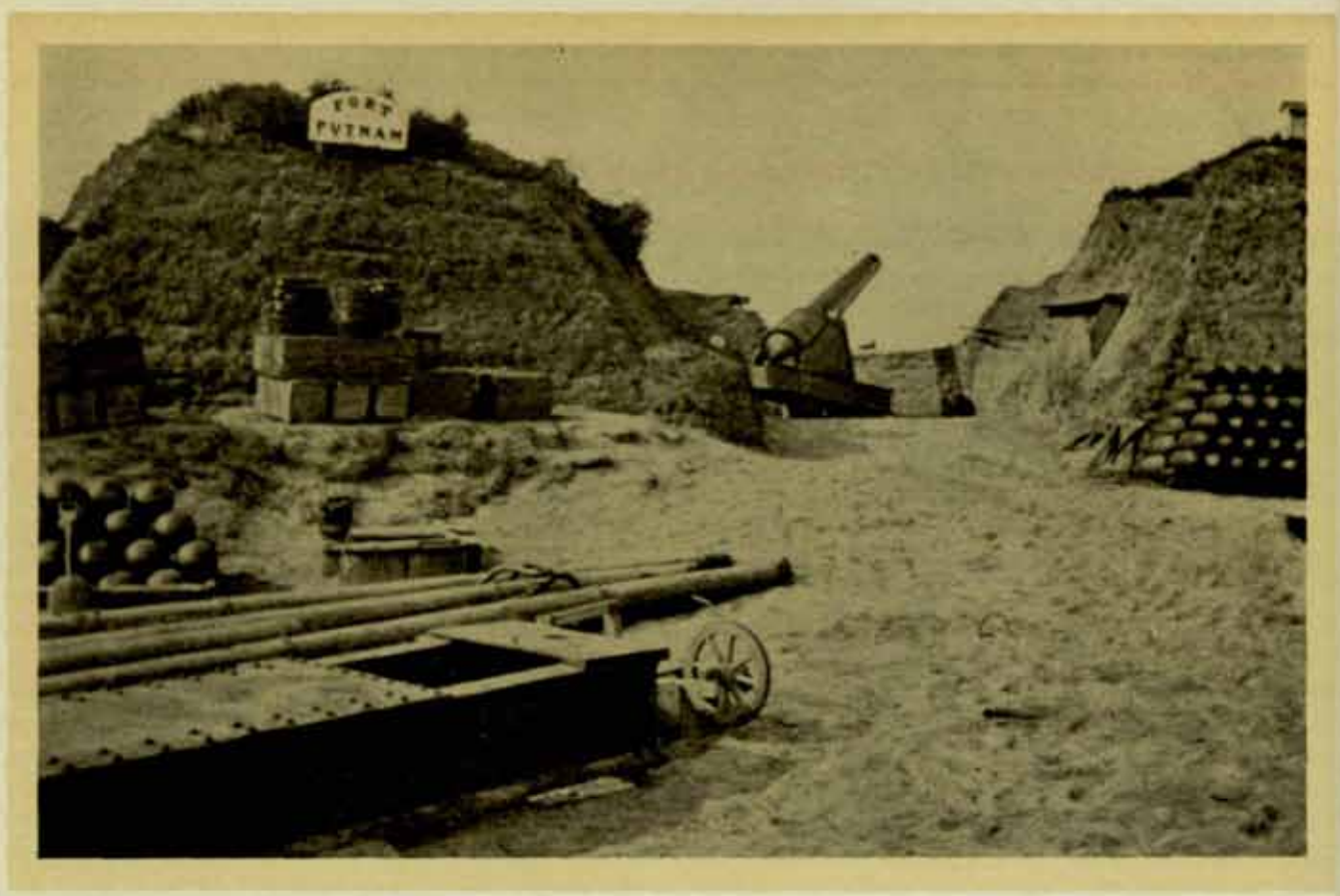
Following the Revolution came the War of 1812 to engage the national attention, and it was not until 1817 that any thought was again given to the defensive possibilities inherent in the scarified mole of Old Point Comfort. Then a board weighted with such mighty naval names as Commodore John Rodgers, Stephen Decatur and David Porter was appointed to consider the establishment of defenses for Chesapeake Bay, and after due deliberation announced that the only logical location for such defenses was Point Comfort. So in 1819 the building of another fort was begun, to be completed in 1836 as the largest fort in the world not enclosing a town. It was named Fortress Monroe in honor of the president and, manned by 2,625 artillerists to work its 412 guns, began its continuing career as the alma mater of America's seacoast artillerymen.

As was the case with the rest of our army, the artillery branch was still undergoing severe growing pains. At the close of the Revolution all of our gunners were grouped in one battalion of four companies; this was known as the "Battalion of Artillery" and totaled fourteen officers and 280 enlisted men. Five years later, with ninety-five officers and 992 enlisted files, the battalion had become the "Corps of Artillerists and Engineers"; in 1799 the growing personnel of 2,270 was divided into two regiments, and in 1802 the Engineers were put into a corps of their own, leaving the Artillery with one regiment.

For service in the 1812 fracas, a regiment of artillery and a regiment of light artillery were added to the current organization. This force of 237 officers and 6,018 enlisted men was reorganized in 1814 to make a "Corps of Artillery" out of the two Regular artillery regiments, later to be increased to four. The light artillery outfit remained as a separate unit.

It was from this Corps of Artillery that, on July 18, 1823, Captain M. P. Lomax was ordered by the War Department to proceed with Company G of the 3rd Artillery to uncompleted Fortress Monroe as a guard for Federal prisoners, and so originated what was actually our first garrison of coast artillery troops although no one thought of so calling them at the time.

Battery Rodgers, 15-inch Rodman gun, Defenses of Washington, 1863



To join these pioneers in 1824 came two companies of the 1st Artillery, three from the 2nd and 3rd, and two from the 4th, all under the command of the austere Lieutenant Colonel Abraham Eustis, an officer of distinguished service whose strictness as a disciplinarian made his associates dislike him even while his fairness in administering that discipline made them glad to serve under him. To him then fell the task that has forever linked his name indissolubly with our seacoast protection—the establishment of the institution we now know as the Coast Artillery School.

Back in September of 1776 Colonel Henry Knox had first suggested such a school. "As officers can never act with confidence until they are masters of their profession," said he, "an academy established upon a liberal plan would be of the utmost service to the continent, where the whole theory and practice of fortification and gunnery should be taught." His idea fell on deaf ears at the time, but it was not allowed to die as its originator progressed to major general, to secretary of war and to general-in-chief. In the early 1800's appointments as artillery and engineer officers were made direct from the newly founded military academy at West Point. Then it was decided that while West Point was satisfactory for the first phase of a general military education, the final special work should be done in separate schools and an "Artillery Corps for Instruction" was organized, becoming the "Artillery School of Practice" nine months later. This was followed by General Order 18 from the Adjutant General's office under date of April 5, 1824, setting up the school at Fortress Monroe. In addition to the troops already there, a faculty was prescribed of a colonel, a lieutenant colonel, a director of artillery and an assistant, a professor of chemistry, an instructor in mathematics and an assistant, an instructor in military drawing, and an instructor of engineering. The administrative staff was to be headed by Brevet Brigadier General John R. Fenwick, but for one reason and another the general found it impractical to report for duty right away, so Eustis stepped in as the school's first superintendent, a post he was to hold with one short interruption until 1834.

The first order of the new school was issued April 11, 1824. It directed that henceforth all artillery batteries would be designated by the names of their respective captains—a practice familiar to the Army down through the Spanish-American War—and then went on to the daily schedule of drill and instruction: Sunrise—General fatigue, followed by battalion drill until 8:30; 9 A.M.—Breakfast; 9:30 to 11.30 A.M.—Infantry or artillery drill; 11:30 A.M.—Guard mount; 12 noon—Officers in laboratory, enlisted men in mathematics class; 3 P.M. —Dinner; 4 P.M.—Dress parade, followed by battalion drill until Retreat, followed by supper; 9 P.M.—Tattoo. On Sundays, an inspection in ranks and in barracks was substituted for the week-day routine.

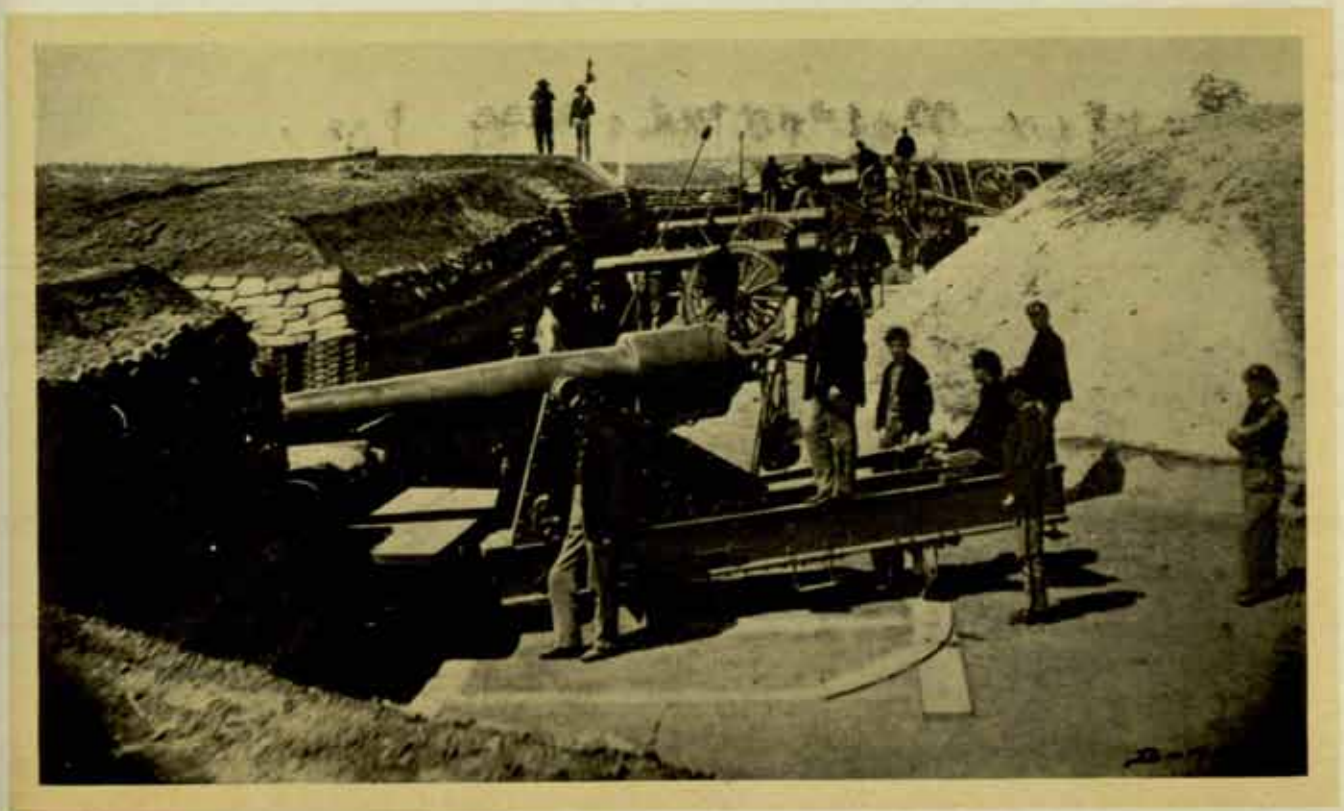
In addition to the above schedule, which would seem to have been sufficient to keep those concerned

reasonably well occupied, all hands had to turn to and secure uniforms and equipment; erect barracks, quarters, a hospital and a post office; recruit a band, and clear and level a parade ground. Yet the entire establishment must quickly have shaken itself down into the accepted tradition of a regular military post for on May 20, 1824, Col. Eustis found it necessary to issue his famous "Dog Order": "The number of dogs at this place has increased until they have become a decided nuisance. Henceforth no dogs will be permitted to go at large on the public grounds at Old Point Comfort." This directive may well have served as the inspiration for that commander at Fort Totten, N. Y., who, a full century later, was to publish an official ukase against the prevalence and fecundity of some non-regulation rabbits living beneath the post chapel.

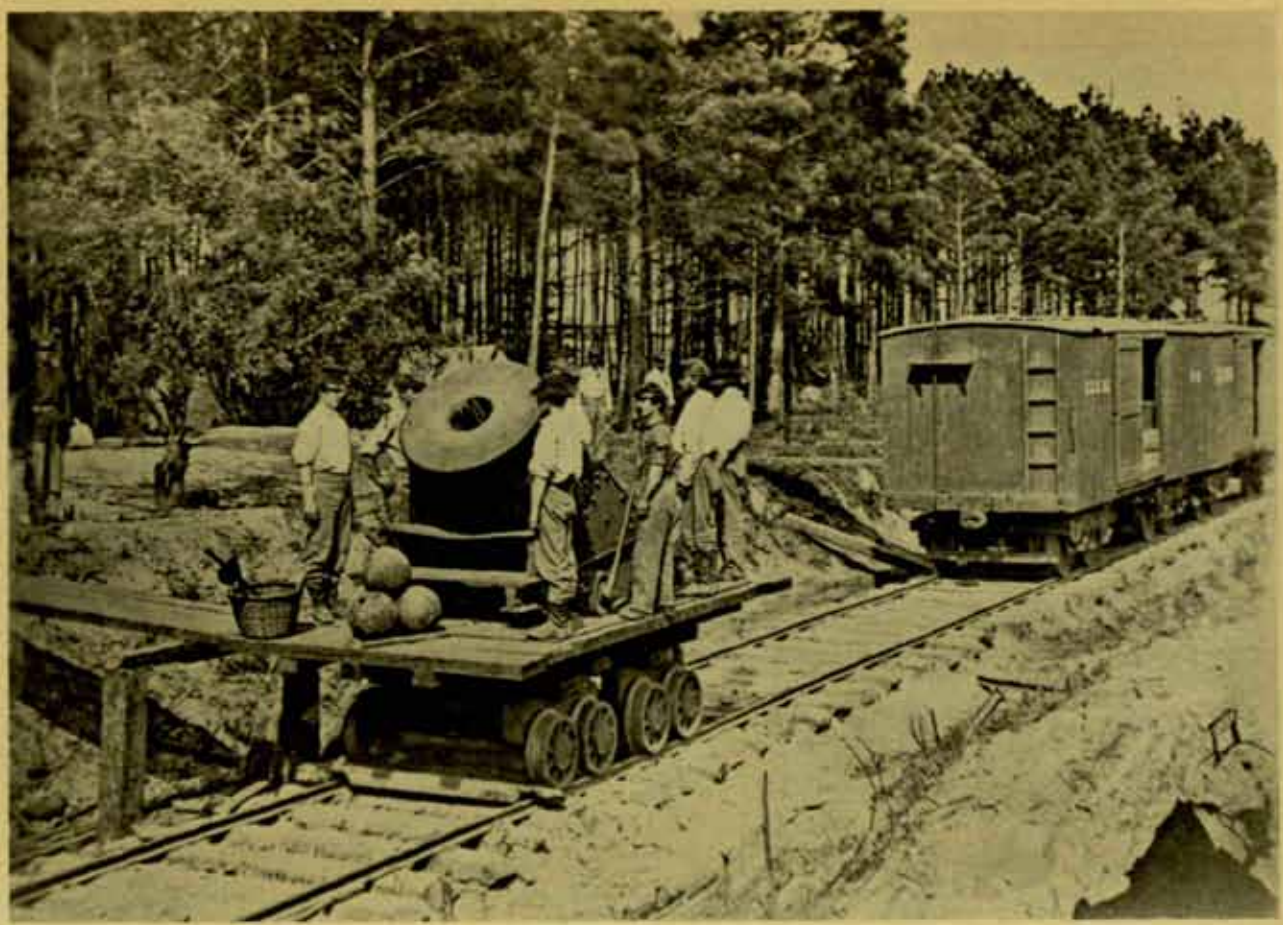
So valuable did the artillery school prove itself that an Infantry School of Practice was inaugurated at Jefferson Barracks, Mo., in 1826, and the idea of special service schools may be said to have become permanently accepted in our military minds. Meanwhile the calm flow of life at Monroe was broken only by the appearance on the post of one E. A. Perry, a high-spirited private from the 1st Artillery who had come to Virginia by way of Fort Barrancas. Black haired, pale skinned, slender almost to the point of emaciation, this volatile individual soon won for himself a reputation for eccentricity that today would have brought him before a board of neuropsychiatrists; among other vagaries of behavior he was given to midnight stalkings along windswept ramparts, to solemn posturings that formed no part of the approved martial carriage, and there were even whispered rumors that he wrote poetry. But these unsoldierly activities were more than offset by the unusual acuteness of the Perry mind; his mentality was far above that of the average man of his station, and in 1828 he won the coveted chevrons of a sergeant major. A year later he obtained an appointment to West Point, where his genius for actions prejudicial to good order and military discipline secured him a return to civil life in 1831, and to non-martial laurels under his proper name of Edgar Allen Poe.

It was in 1831 too, that the coast guardians received their first taste of that versatility which has ever since been a distinguishing characteristic of the Coast Artillery which they were to become. A slave uprising imperiled the families of the landowners of Newburn, N. C., and thence was sent Company I of the 1st Artillery to keep the peace, acting in the rôle of infantry. The erstwhile wagon soldiers remained on this duty from September to November, and when they were withdrawn the ladies of the town petitioned President Jackson that the soldiers be returned. How greatly they were thus influenced by fear for their own safety and how much by the pleasant increase in the local male society which Company I afforded is not now clear, but "Old Hickory" accorded the request his most courteous consideration and dispatched the following bland reply:

"LADIES: On the receipt of the memorial of the ladies of Newbern, N. C., I lost no time in referring the same to the secretary of war, with directions if



Harbor defense guns of 1862



Railway artillery

Capt. Whiting's company had been removed from thence to order another company to Newbern for their protection and safety. I herewith enclose the reply of the secretary of war. That will show with what promptness I have met the prayer and wishes of the fair petitioners. Be pleased to communicate this to the memorialists, and believe me, with great respect,

Your most obedient servant,

ANDREW JACKSON."

The inclosure referred to was this no less courtly assurance from the Secretary of War:

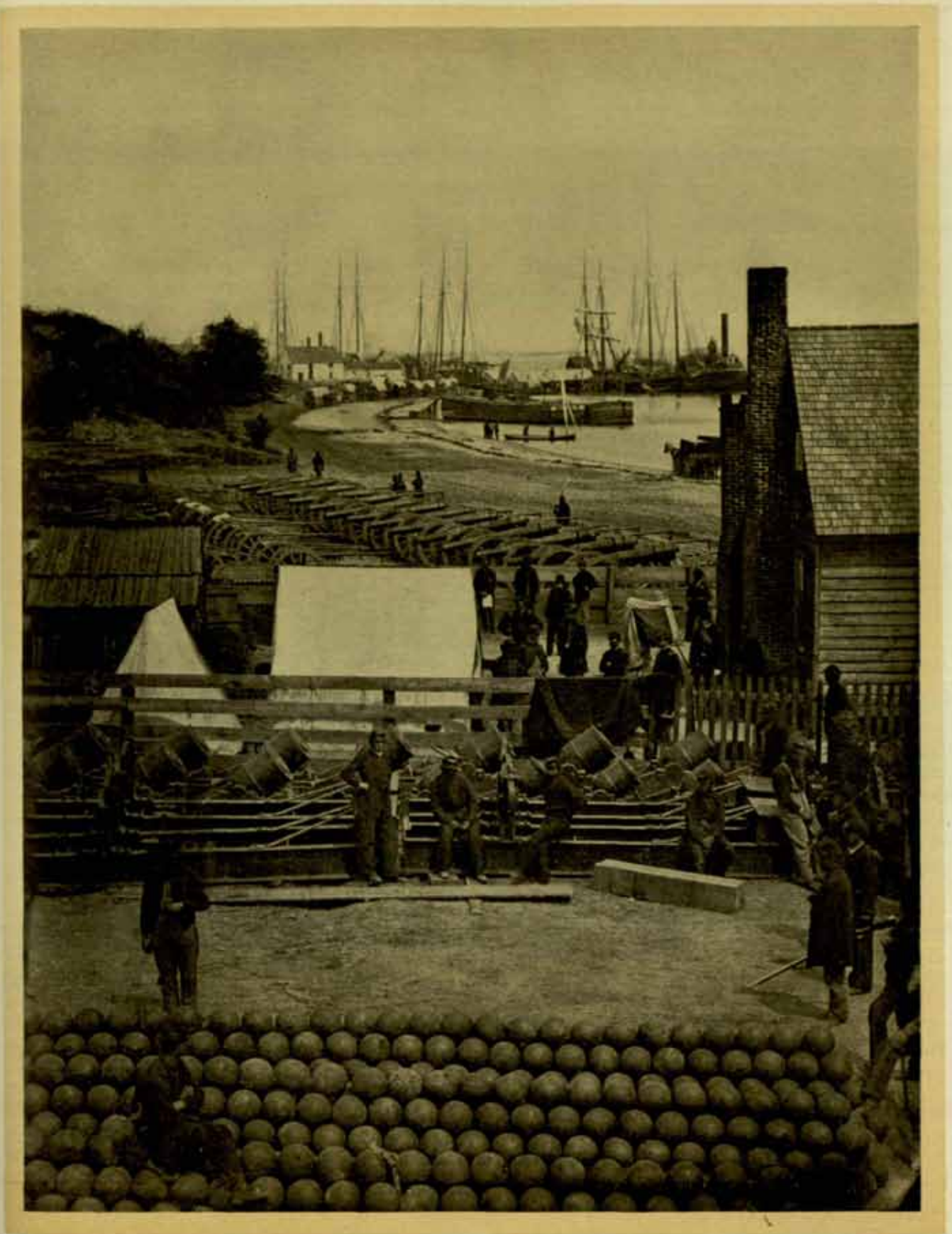
"WAR DEPARTMENT, Dec. 5, 1831.

"The secretary of war has the honor to return to the president the letter of the ladies of Newbern, inclosing their memorial, and to inform the president that Capt. Whiting's company was some time since withdrawn, but that another has this day been ordered from Old Point Comfort to supply its place."

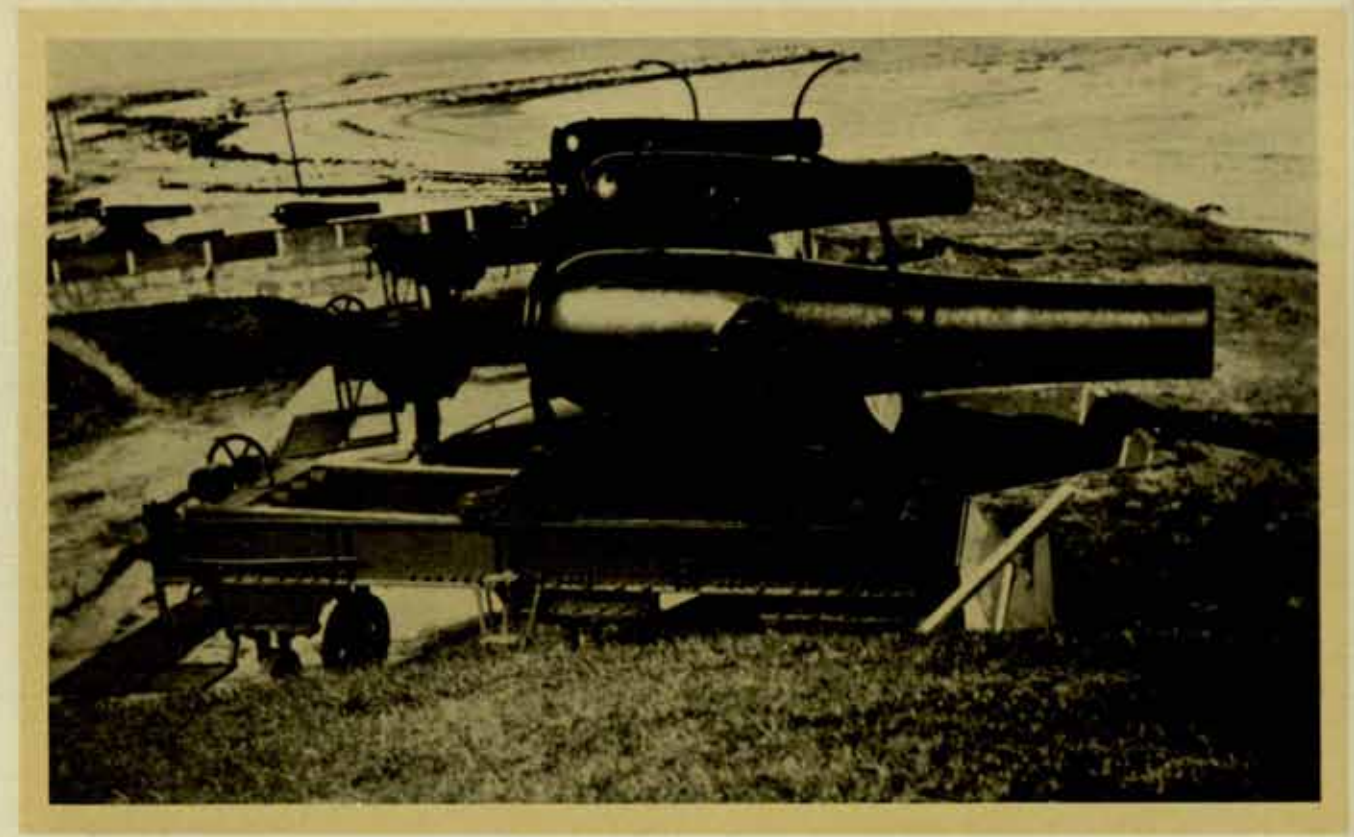
Then came the Black Hawk War, with further drains upon the personnel of the school, causing it to be closed in 1834 and its troops dispersed to various field duties. By the time of the Mexican War the Army boasted of forty-eight artillery companies, and of these forty-five served south of the Rio Grande as both infantry and artillery.

Fort Monroe was completed in 1836. However, the artillery academy there did not reopen until 1858, under the designation "The Artillery School." Meanwhile the War Department had ordered four companies of Light Artillery to be detached from that branch and, taking a leaf from the English Army's tables of organization, designated them as "Garrison, Sea-Coast and Siege Artillery." This experimental combination was assigned to Monroe for both post and instruction duties, and there initiated a comprehensive program of target practices for all armament then in use by our artillery. This included 3-, 8-, 10- and 15-inch guns, 21- and 30-pounders, 4.5-inch siege guns, 1-inch Gatling guns, 10- and 13-inch sea-coast mortars and 8- and 10-inch siege howitzers. The firings were overland at targets placed on what is now Buckroe Beach—the ranges were 1,510 yards for rifled guns and 1,110 for smooth bores—and the proceedings were made of extreme social importance by the neighborhood belles.

The Civil War was first brought squarely home to the artillery in June of '61 when Lieutenant John T. Greble from Monroe lost his life near Yorktown in a



Artillery at Yorktown, 1862



Old cast-iron cannon along the seawall at Fort Monroe

running fight with marauding Greyjackets under command of John Magruder—the dashing "Prince John" whose family name has ever since been active on Army rolls. On the 8th of March, 1862 the artillerymen at Old Point Comfort had grandstand seats for the *Merrimac's* battle with the Union *Cumberland* and *Congress*, and the next day saw the set-to between the Confederate ram and the *Monitor*. Later in April the entire Army of the Potomac—121,500 men and 14,592 animals, complete with wagons, ponton bridges and communication agencies—moved ponderously across the Point and into Virginia, but from then on the coast defenders had little to engage their attention until peace between the states brought Jefferson Davis as a prisoner of war to Fort Monroe.

Judging from contemporary accounts, the incarceration of the ex-president of the Confederacy in May, 1865, must have been something of a public holiday. The captive rebel was landed on the Point from a steamer, escorted by Major General Nelson A. Miles, with whom he walked arm-in-arm. Promenading to the fort between a double line of sentinels, the couple was preceded by some of the 4th Michigan Cavalry and followed by a squad of artillerymen (marching as infantry), Colonel Pritchard who had captured Davis, the rest of the 4th Michigan, Clement Clay of Davis' official family, and a regiment of infantry. When this penal parade had passed within the walls of Monroe, Davis was placed in a cell in one of the casemates, where four guards were required to hold him while the fort blacksmith put leg irons on him.

This shackling caused great public indignation on both sides of the Mason Dixon line and the fetters were removed after a few days, but the prisoner was kept under the constant surveillance of two sentinels at the door of his cell, two more in the room outside his cell, and an officer who was required to look at Davis every fifteen minutes; in addition, there was a line of sentinels outside the casemate itself, on the parapet over the cell, and on the glacis across the moat from the casemate. Many protests were made to the Army authorities over the indignities to which a political prisoner was thus subjected, but the Army authorities correctly pointed out that Davis was not a political prisoner but was held on the criminal charge of treason against the Federal government plus possible complicity in the assassination of Lincoln. However, his captors later relented to the extent of moving the Confederate ex-president into a special house where he could be joined by his wife until he left for his trial in Richmond.

Although the start of the conflict between the states had found our coast defenses splendidly manned and equipped, the post-war lethargy which has ever been a national characteristic sank the heavy artillery service into a condition of innocuous desuetude from which it was only partially aroused by the formation in Washington in 1866 of a "permanent Artillery Board" for the consideration of all matters pertaining to the furtherance

of the science of major caliber armaments, and by the reopening of the Artillery School in 1868 under the aegis of that superb organizer, Major General W. F. Berry. The diplomas to the first batch of new graduates were presented by General W. T. Sherman himself, and under this indirect endorsement of the redoubtable "Cump" the interest in and development of heavy artillery material and training received fresh impetus.

The first indication of this was the consideration by the Artillery Board of an experimental "counterpoise gun," the forefather of the modern disappearing carriage rifle. This weapon was a 15-inch Rodman gun, and was first emplaced and fired at Fort Foote, Maryland early in February of 1869; further firings were conducted with the same gun the following fall in New York Harbor, and although adjustments and changes in the counter-poise mechanism were made after each firing, the mount was pronounced to have many advantages over the barbette mount.

In 1875 a great change was made in the Artillery School's curriculum to include courses in English, Law, History, Strategy and Infantry Tactics, but it was in the 1880's that really great steps forward were taken in behalf of the big guns and the men behind them.

Primary attention was given to the little-understood art of fire direction and in 1881 there was published Army Regulation 466: "The flight of a shell may be noted with sufficient accuracy by a stop watch . . . and the range may sometimes be computed by the time of flight. Other modes of ascertaining the range will readily occur to officers of science." Among the officers of science thus put on the spot was one Captain Ingalls, head of the Department of Ballistics at the Artillery School and in 1883 he produced a textbook on exterior ballistics which was the first of its kind to be seen in North America. It was for many years the outstanding authority on its occult subject.

This same officer also introduced a course of study on submarine mines, interest in which had been greatly aroused by Farragut's encounters with the torpedoes in Mobile Bay, although they had been recognized as a potentially powerful instrument of warfare since David Bushnell's experiments with floating powder kegs in 1775.

Meanwhile Monroe was gaining additional renown in a strictly non-martial manner. When Colonel Eustis first took command of the post he gave to the post office he established there the name of "Old Point Comfort." This seemed entirely adequate until 1879 when the Post Office Department decided that the station might more logically be called "Fortress Monroe" and promptly changed its title thereto. Apparently this move caused enough letters to go astray to warrant a public petition to the authorities in 1885 to change the name back to "Old Point Comfort." This was sternly disapproved by the War Department, which stated that the correct name of the post was now "*Fort*" and not "*Fortress Monroe,*" and if any changing was going to be done it would be in favor of the new name. This suggestion did not please the public any too well, and the matter was left in the anomalous condition it still enjoys: the post office address of Fort Monroe is Fortress Monroe, listed on railroad and boat schedules as Old Point Comfort.

The national administration began to evince great interest in the improvement of our seashore protection and in 1885 Secretary of War W. C. Endicott assumed the presidency of a special "Board for Fortifications and Other Defenses." This was the famous "Endicott Board" whose report, submitted a year later, formed the basis of all seacoast construction until after the Spanish-American War.

The Board's findings provided that the type of fortifications then in use be abandoned. The self-contained forts of solid masonry walls pierced by rows of gun ports were declared outmoded, and in their place it was recommended there be substituted systems of detached batteries behind earthern parapets, with such extra turrets and armored casemates as might be needed to meet local conditions. Stone work was to be used only in the construction of magazines, bombproofs and storerooms.

For armaments, appropriate selections for each fort would be made from a catalog of newly designed ordnance that included 16-inch breech-loading rifles to be mounted in turrets, 10-inch rifles on disappearing and barbette mounts, 12-inch rifles in casemates and 12-inch rifled mortars. Provision was also made for the installation of submarine mine fields, and for fleets of torpedo boats for bay and river service. The estimated total cost of this ambitious project was approximately $7,500,000, to be allocated on a strict priority program on which the defenses of New York stood first; then came San Francisco, Boston, the Great Lake ports, and finally Fort Monroe and the Gulf coast. In 1890 an appropriation of $1,221,000 was made for this work, with another $750,000 in '91, and the idea began to be a reality.

The War Department itself had kept in stride with the fast-stepping Endicott Board, and that the newly authorized equipment might be used to greatest advantage had issued in General Orders 108 of '88 a directive that every coast fort should have "one or more carefully measured base lines, with the extremities marked, and angle measuring instruments." Also, all forts were desired to have charts of adjacent harbors in the scale of 100 yards to the inch, with 1-inch grid squares marked thereon and the exact range of every square to every cannon in the fort. (Maximum ranges then enjoyed by our major armaments had increased from those of civil war days to 2,700 yards for guns, 3,000 yards for mortars and 1,500 yards for siege mortars.) Various methods of checking the accuracy of fire were given trials, and at Fort Hamilton it was reported that sixty consecutive observations were made at a moving target within thirty minutes.

The invigorating effect of all this sudden interest in

our artillery soon found reflection in the appearance in January of 1892 of the first issue of the "Journal of the U. S. Artillery," published as a quarterly. This became the COAST ARTILLERY JOURNAL in 1922. It immediately began to prove its worth as a clearing house for professional data and discussion, and in 1895 printed an article by Lieutenant Lassiter which for the first time proposed a system of fire *control* instead of merely *direction*.

Concurrently experimentation was initiated with the "dynamite gun," proposed to supplant the usual type of ordnance. This weird weapon, jointly planned by the civilian engineer, B. C. Batcheller, and Captain John Rapieff, late of the Russian Army, used a propelling charge of compressed air and 529-pound shells loaded with dynamite. The gun barrel was fifty feet long, supported on a concrete platform by trunnions fifteen feet from a breech which was connected with a compressed air reservoir and an intricate arrangement of steam boilers, air compressors and electric generators. The shell, fifteen inches in diameter, was loaded in the barrel in the conventional manner; compressed air was then released into the breech through six vents in the breech block, covered by a movable sleeve, and the shell was on its way. The range of the gun could be varied from 1,471 to 2,638 yards by changing the air pressure, although it was usually kept at 1,000 pounds to the square inch. Experimental batteries of these guns were emplaced at Fort Hancock on Sandy Hook, and at The Presidio, San Francisco, but their attendant mechanisms were found to be too cumbersome and undependable to justify their official adoption. This decision was amply proved correct when another dynamite gun, adapted to a mobile field mount, jammed into complete futility during the San Juan engagement in the Spanish-American War. It was this same imbroglio that saw the first use of foot batteries of coastal artillery as siege artillery.

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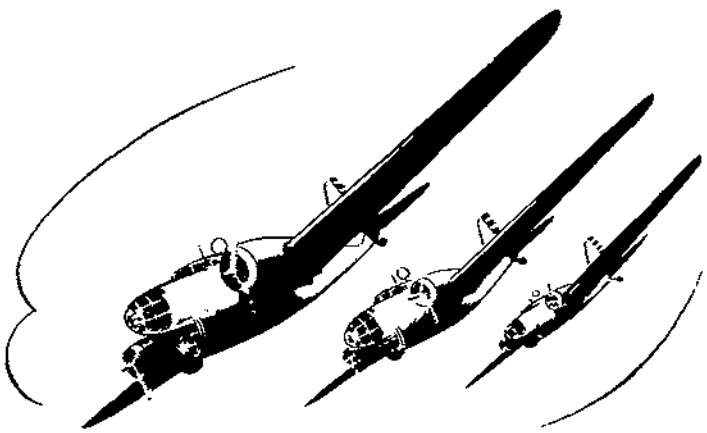
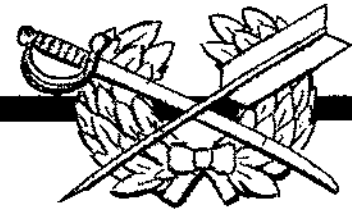
Part II of "Great Guns" will appear in the November-December issue.



THE ARMY COURT-MARTIAL SYSTEM



By Colonel Archibald King*

In view of the recent large increase in the personnel of the Army, many of whom are unfamiliar with its court-martial system, it is hoped by the review of that system made in this article to be helpful to those who may be required to take some part in its operation and to assure all personnel that their rights will be adequately protected if they should be so unfortunate as to be put on trial before a court-martial.

What then are courts-martial? How are they called into existence? What are their jurisdiction, procedure, and powers? In what manner are the interests of those brought before them protected?

As a court-martial in the United States Army is an instrumentality of the federal government, let us turn first to the United States Constitution. There we find a number of provisions relating to war and the Army and Navy. The preamble says that one of the reasons for the adoption of the Constitution is to "provide for the common defense." Article II, Section 8, empowers Congress "to declare war," "to raise and support armies," and "to make rules for the government and regulation of the land and naval forces." Article II, Section 2, provides that, "The President shall be commander in chief of the army and navy of the United States." The foregoing provisions are the constitutional basis for the existence and powers of courts-martial.

From the Constitution let us turn to the statutes of the United States. Substantially all the statutory law on courts-martial is found in the "Articles of War," a code of military justice of 121 numbered articles, enacted as Section 1, Chapter II, of the act of June 4, 1920 (41 Stat. 787), and since amended in a few minor particulars by the act of August 20, 1937 (50 Stat. 724). They are carried into the United States Code as Title 10, Chapter 36, sections 1471-1593; and are reprinted as Appendix 1 of the Manual for Courts-Martial, where they may most conveniently be consulted by military personnel.

The Articles of War begin with definitions and an enumeration of the persons subject to military law, briefly, all persons in the Army, of whatever rank, as well as certain other persons accompanying or serving with the Army. Next follow articles stating the different grades of court-martial, by whom they are appointed, their composition, jurisdiction, and procedure. Then there are articles dealing with limitations on prosecution and with approval, confirmation, mitigation, suspension, remission, and review of sentences. Next there are 43 articles (A.W. 54-96) known as the

*This article is an abridgment of an article of the same title by Colonel King in the *Wisconsin Law Review*, and is here published with the permission of the editors of that publication.

punitive articles, defining or mentioning various crimes and offenses punishable by courts-martial. Some of these are of a purely military character, such as desertion (A.W. 58), disobedience of orders (A.W. 64-65), and mutiny (A.W. 66); but others are common law crimes such as murder, rape (A.W. 92), arson and burglary (A.W. 93). The last two of the punitive articles are Article 95, declaring that any officer or cadet convicted of conduct unbecoming an officer and a gentleman shall be dismissed from the service, and Article 96, commonly called the general article, as follows:

> *ART. 96. General Article.*—Though not mentioned in these articles, all disorders and neglects to the prejudice of good order and military discipline, all conduct of a nature to bring discredit upon the military service, and all crimes or offenses not capital, of which persons subject to military law may be guilty, shall be taken cognizance of by a general or special or summary court-martial, according to the nature and degree of the offense, and punished at the discretion of such court.

Among the offenses which have been held to be violations of the 95th Article are making a false official statement, opening another's letters without authority, cheating at cards, failure to support one's family to the best of one's ability, gross public drunkenness or disorder. The expression, "crimes and offenses not capital," in the 96th Article of War does not give the court-martial power to create new crimes; but means crimes which are not mentioned or defined in any other Article of War, but which are denounced by other federal legislation. Among the offenses held to be within the expressions, "disorders and neglects to the prejudice of good order and military discipline" and "conduct of a nature to bring discredit upon the military service" are appearing in improper or unclean uniform, disorderly conduct, abusing a horse, carelessly discharging a fire-arm.

The last part of the Articles of War contains a number of miscellaneous provisions, some of which have nothing to do with military justice.

A few moments' reflection will show the necessity for some form of court-martial or military tribunal and for some sort of a military penal code such as the Articles of War. If an army is to be an army and not a mob, it must have discipline. If it is to have discipline, punishments must be imposed for crimes and military offenses, and the imposition of punishment must be prompt, certain, uniform as between offenders of like degree, and neither too light nor too severe. It must not be inflicted upon the innocent, nor must the guilty escape. Though military law, no more than any other system of law operated by human beings, can be one hundred per cent efficient, yet if it seriously fails in any of these respects, the morale and discipline of the Army, and therefore its efficiency, will be much diminished.

All this is merely another way of saying that discipline must be administered according to law. This has been recognized ever since the days of Romans, who were both great soldiers and great lawyers. One of the writer's colleagues in the Judge Advocate General's Department, Lieutenant Colonel Clarence E. Brand, while at the Law School of Yale University, wrote a thesis on Roman military law, unfortunately not published. From that scholarly paper it appears that, though the consul, proconsul, or *imperator* (corresponding to our commanding general) had unlimited disciplinary

powers, the military tribunes judged the commoner offenses according to the custom of the service or unwritten law military. In the later Roman empire various writings on military law appeared, the most detailed of which is the Military Laws of Ruffus. This work consists of 65 numbered articles, denouncing various military offenses, many of which are punishable under our own present Articles of War, such as fraudulent enlistment, desertion, straggling, disobedience of orders, and fleeing from battle, as well as crimes such as larceny and rape. Punishments include fines, reduction in rank, dishonorable discharge, and others from which we have fortunately gotten away, such as torture, cutting off the nose, beating with a whip or with rods, and death by cudgeling or beheading.

In English history, the earliest document in the nature of a military code is a brief ordinance of King Richard I, the Lion-Hearted promulgated in 1190, for the government of his crusaders about to set out by sea to the Holy Land. One of its provisions is interesting. It reads:[1] ". . . A robber who shall be convicted of theft shall have his head cropped . . . and boiling pitch shall be poured thereon, and then the feathers of a cushion shall be shaken out upon him, so that he may be known, and at the first land at which the ship shall touch, he shall be set on shore. . . ."

The foregoing shows the antiquity of the extra-legal punishment of "tar and feathers."

Among other famous military codes are the Articles of War of Gustavus Adolphus, the great Swedish soldier king, promulgated in 1621. It is interesting to note a few of them:[2]

"135. Very requisite it is, that good justice be holden amongst our Souldiers, as well as amongst other our Subjects.

"136. For the same reason was a king ordained by God to be the Soveraigne Judge in the field as well as at home.

"137. Now therefore in respect of many occasions which may fall out, his single judgment alone may bee too weak to discerne every particular circumstance; therefore it is requisite that in the Leaguer, as well as otherwhere, there be some Court of Justice erected for the deciding of all controversies; and to be careful in like manner, that our Articles of warre be of all persons observed and obeyed so farre forth as is possible.

"138. We ordained therefore that there be two Courts in our Leaguer: a high Court and a lower Court."

Observe that Gustavus knew, as it is recognized by all soldiers now and has been stated in this paper, that it is requisite "that good justice be holden amongst our souldiers" as well as amongst civilians, and that the court-martial sits as an aid to the commanding general in enforcing discipline by assuring justice.

The Articles of Gustavus Adolphus had great influence on subsequent British Articles of War.

Even before the beginning of hostilities, the embattled American colonists felt the need of a code of law for the government and discipline of their troops. On April 5, 1775, two weeks before "the shot heard round the world" was fired at Lexington, the Provisional Congress of Massachusetts enacted Articles of War for the government of its troops.[3] The second Continental Congress, on June 14, 1775, appointed a committee of which George Washington was chairman "to prepare rules and regulations for the government of the Army."[4] Before the Committee had completed its labors, the Congress appointed Washington general and he departed. The Congress adopted our first national Articles of War on June 30, 1775, three days before Washington took command of the Continental Army under the famous elm on the common at Cambridge, Massachusetts.[5]

The early dates at which the Massachusetts and the Continental Articles were enacted show that the founding fathers held the same opinion as has been here expressed, that in order to have military efficiency an army must have internal order and discipline; and, in order to have order and discipline, it must be governed according to law.

These early American articles were largely copied from the British articles of 1765, with which many of the colonists were already familiar. The Continental Articles of 1775 were amended and reënacted several times by the Continental Congress, the Congress of the Confederation and Congress under the Constitution. In the years preceding our entry into the World War, a comprehensive revision was made. The articles were arranged in a more logical order, archaic expressions inapplicable to modern conditions were eliminated, greater precision in language was sought, and many improvements in procedure were introduced. This revision was enacted August 29, 1916 (39 Stat. 650). At the close of the World War, as a result of experience in that war and of certain criticisms of the operation of the court-martial system during it, further amendments were made to the Articles of War, designed particularly to give greater protection to defendants, who in military parlance are called "the accused." The Articles as thus amended were reënacted June 4, 1920, as has already been stated.

The foregoing survey shows that our present Articles of War have a long and honorable ancestry, that they are descended directly from the Articles of War of Gustavus Adolphus of 1621, and ultimately from the Romans.

From this preliminary examination of the history of

[1] Winthrop, *Military Law*, Appendix I, original p. 1411, reprint p. 903.

[2] Winthrop, *Military Law*, Appendix III, at p. 915.

[3] Winthrop, *Military Law*, Apendix VIII, original p. 1470, reprint p. 947.

[4] *Journals of Congress*, 82, 83.

[5] *Journals of Congress*, at 90; Winthrop, *Military Law*, original p. 11, reprint p. 21; Appendix IX, original p. 1478, reprint p. 953.

courts-martial and the constitutional and statutory basis for them, let us turn to their actual operation. Let it be supposed that a soldier commits some minor military offense, such as failure to stand reveille. When this is reported to the offender's company commander it will be the latter's duty to decide what disciplinary measures it is necessary to take. If the offender is a recruit or a soldier with a previously excellent record, the company commander will probably do no more than give him an unrecorded "bawling out" and drop the matter. If, however, he is of the opinion that something further is necessary for the maintenance of discipline he may take action in accordance with the 104th Article of War and give what is commonly called "company punishment." According to that article, he may, by way of punishment for a minor offense and without trial by court-martial impose a reprimand, the withholding of privileges for not exceeding one week, extra fatigue for not exceeding one week, restriction to limits for not exceeding one week, and hard labor without confinement for not exceeding one week; but he may not impose forfeiture of pay or confinement. Furthermore, he may not impose company punishment at all if the accused demands trial by court-martial.

Suppose however that the offender has committed the like offense before, or that for some other reason the company commander decides that company punishment is inadequate for the maintenance of discipline. In such event he will take the printed form of charge sheet (A.G.O. Form No. 115), will turn to Appendix 4 of his Manual for Courts-Martial, a list of forms for charges and specifications covering common offenses, and look for a form or forms of specification appropriate to the case before him. If he finds none, he will write an appropriate specification himself.

He will also fill in at the appropriate places on the charge sheet the accused's age, his rank, and a record of his military service, including the dates of enlistments and discharges and the character given the accused on former discharges. He will also attach a memorandum of any previous convictions by court-martial within the past year and within the accused's current enlistment or term of service.

He must then go before the regimental Adjutant or some other one of the officers authorized by Article of War 114, to administer an oath, sign the charges in his presence, and make affidavit either that he has personal knowledge of the truth of the charges or that he has investigated them and believes them to be true. He will then forward the charge sheet and accompanying papers to the Commanding Officer of the regiment or similar organization.

It will be the duty of the Commanding Officer of the regiment to decide to what court the charges shall be referred. A charge no more serious than absence from reveille will be referred to a Summary Court, the lowest grade of court-martial, consisting of a single officer. That officer would call the accused and witnesses before him, question first the witnesses for the prosecution, and second any witnesses whom the accused may desire called. He will also explain to the accused that he may testify or keep silent, and hear his testimony if the accused chooses to testify. The Summary Court will then announce his findings and sentence and write them on the back of the charge sheet, which will then be returned to the Commanding Officer of the regiment. That officer may approve the sentence imposed by a Summary Court appointed by him, may reduce the sentence to one less severe, or may disapprove the findings of guilty and the sentence entirely. He may not increase the sentence.

If the charges are of a more serious nature, as, for example, being drunk and disorderly under such circumstances as to bring discredit upon the military service, or allowing a prisoner to escape through neglect, the Commanding Officer of the regiment may refer them to a Special Court-Martial for trial. Such a court is composed of three or more officers. A trial judge advocate is detailed to prosecute and a defense counsel to defend persons brought before it. It may not impose a sentence more severe than confinement for six months and forfeiture of two-thirds pay for the same period. The procedure of a Special Court-Martial is like that of a General Court-Martial, which will be subsequently discussed in detail, except that the record which is made of its proceedings is merely an abstract and not a full stenographic report. As is also true of other courts, the sentence imposed by a Special Court-Martial must be approved by the regimental Commander or other officer who appointed it. The officer thus reviewing the record may cut down the sentence or disapprove it altogether, but may not increase it.

Let us next suppose charges of a more serious character still. Let us suppose that a soldier has committed several serious offenses, that he has stolen a suit of clothes belonging to another soldier, put it on, that while leaving the post without permission so dressed he had disobeyed the order of a sentinel to halt, struck the sentinel, and run away, and that he is apprehended in another town several weeks later and brought back to the post. In such a case the charges would be worded thus:

Charge I. Violation of the 93rd Article of War.

Specification. In that Private John Doe, Company A, 1st Infantry, did, at Fort Sheridan, Illinois, on or about the 2d day of January, 1941, feloniously take, steal, and carry away one suit of clothes, value about twenty-five dollars ($25), the property of Private Richard Roe, Company A, 1st Infantry.

Charge II. Violation of the 58th Article of War.

Specification. In that Private John Doe, Company A, 1st Infantry, did, at Fort Sheridan, Illinois, on or about the 2d day of January, 1941, desert the service of the United States, and did remain absent in desertion until he was apprehended at St. Paul, Minnesota, on or about the 2d day of March, 1941.

Charge III. Violation of the 96th Article of War.

Specification 1. In that Private John Doe, Company A, 1st Infantry, having received a lawful order from Private Benjamin Bayne, Company B, 1st Infantry, a sentinel in the execution of his duty, to halt, did, at Fort Sheridan, Illinois, on or about the 2d day of January, 1941, willfully disobey the same.

Specification 2. In that Private John Doe, Company A, 1st Infantry, did, at Fort Sheridan, Illinois, on or about the 2d day of January, 1941, strike Private Benjamin Bayne, Company B, 1st Infantry, a sentinel in the execution of his duty, in the face with his fist.

The supposed charges set out in the proceeding paragraph include a specification alleging larceny of a suit of clothes from another soldier. Soldiers live together in barracks or tents, and it is impossible for them to keep their belongings locked up at all times. The members of a company, troop or battery must work together in combat as a team, like a football team; and it is impossible for them to do so harmoniously and efficiently if there is a thief in their midst. Every man will suspect his neighbor, and the fraternal feeling which must exist if they are to perform their duties efficiently will disappear. Furthermore, there is much valuable government property in an army post or camp which can not be kept under lock and key at all times. Consequently, the view is generally held that the Army must rid itself of a thief even though his thievery be on a small scale. Therefore, even if the specification alleging larceny stood alone, the Colonel would probably desire it tried by a general court-martial. The supposed charges also contain a specification alleging desertion. An army whose members may run away with impunity is not a dependable instrumentality; and desertion, even if there be no other charge, is generally regarded as an offense of such gravity as to require trial by General Court and the imposition of a sentence of dishonorable discharge. The charges also contain specifications alleging disobedience of a sentinel and striking him. A sentinel is the representative of the Commanding Officer, and as such may lawfully give an order even to his superior in rank. His authority must be maintained.

In view of the nature and gravity of the charges, it may therefore be assumed that Private Doe's Colonel will desire to have these charges tried by a General Court-Martial.

By the 70th Article of War it is required that no charge shall be referred to a General Court-Martial for trial until after a thorough and impartial investigation of it shall have been made. Such an investigation may and often is made even of less serious charges. The regimental Commander will therefore either conduct such an investigation himself or as its more usual detail some other officer (not the accuser) to do so. The purpose of this investigation is to see whether the available evidence will justify a trial. It protects both the accused and the Government from waste of energy, time and money involved in a trial on charges to support which the evidence is insufficient.

The investigating officer will call before him the accused and all known witnesses either for the prosecution or the defense and will informally question them. He will inform the accused that he may testify if he so wishes, but that he is not required to do so. The investigating officer will write a brief report including or attaching abstracts of the testimony of the witnesses and close with a recommendation either that the charges be tried by a particular grade of court-martial or that they be dropped.

If he recommends that the charges be tried by a General Court-Martial and the Colonel of the regiment approves that recommendation, the latter officer will forward the charges to the Commanding General of the division or other larger unit to which the regiment belongs. At division headquarters, pursuant to another requirement of Article of War 70, the charges will be referred to the Judge Advocate on the staff of the Commanding General. That officer will examine the charges carefully to see whether they are in proper form and whether the evidence is sufficient to justify a trial. He may recommend to the Commanding General that the charges be sent back to the post at which they originated for further investigation, that they be dropped, or that they be referred to a General Court-Martial for trial. If he makes the latter recommendation and it is approved by the Commanding General, the charges and all accompanying papers will be sent to the Trial Judge Advocate of a General Court-Martial for trial before such court.

A general court-martial is composed of at least five officers and usually more. The senior officer present is the President of the court and presides at the trial. One of the officers on the court, who is a member of the Judge Advocate General's Department, if one is available, and who in any event is an officer with considerable experience in court-martial work, is designated as the law member and decides questions of the admissibility of the evidence and other questions of law arising in the course of the trial. There are also detailed to each general court-martial a Trial Judge Advocate who prosecutes the case, as does a District Attorney, and a Defense Counsel whose duty it is to defend all persons tried before the court. Assistants to each are also usually detailed. Any accused who so desires may ask some other officer to defend him, or may employ a civilian lawyer for that purpose.

We now come to the trial itself, which begins with the administration of an oath to the stenographic reporter faithfully to perform his duties (A.W. 19). The reporter is a soldier if one can be found in the command who can write shorthand fast enough, otherwise a civilian specially employed. Then, the prosecution, *i. e.*, the trial judge advocate, asks the accused if he wishes a copy of the record of trial, to which he is entitled as a

matter of right. The trial judge advocate next invites any member of the court to disclose any facts on account of which he might be challenged. Whether or not there is any answer to this invitation, either side may challenge any member of the court for cause and each side has one peremptory challenge. Challenges for cause are decided by the court, other than the challenged member, by majority vote (A.W. 18).

The members of the court are next sworn well and truly to try the case before them without partiality, favor, or affection (A.W. 19). The Trial Judge Advocate and his assistants, if any, are next sworn faithfully to perform their duties.

The accused is then arraigned by reading the charges and specifications to him and requiring him to plead to each.

From this point the trial is conducted much as the ordinary criminal trial in a federal court. The prosecution makes its opening statement and presents its evidence, the defense does the like, and there may be evidence in rebuttal.

The senior member of the court present is its president. The law member, although he is not the president unless he happens to be the senior officer present, rules finally on all questions of the admissibility of evidence, and rules in the first place on all other interlocutory questions, subject to being reversed by a majority of the court. (A.W. 31.)

Finally come the closing arguments. As the members of the General Court-Martial perform many of the functions of both judge and jury, there is no charge to the jury.

When the closing arguments have been made the court goes into "closed session." In closed session the members discuss the case and then take a separate, secret, written ballot as to the guilt of accused of each specification and charge. Unanimity is not required for a conviction, except of an offense for which the death penalty is mandatory, and there is but one such, spying (A.W. 43, 82). For all other findings of guilty, a two-thirds vote only is necessary. Any vote in which less than the required number vote guilty is a finding of not guilty. The necessity of celerity in military justice makes it desirable to avoid unduly long deliberations, hung juries, and consequent new trials.

When the court has made findings as to the guilt of accused, it resumes its open session; and, if the accused has been acquitted on all charges and specifications, the president so announces and the trial is at an end. If, on the other hand, the court has found him guilty of any specification, the president asks the trial judge advocate if he has anything further to present. This is the cue for the Trial Judge Advocate to read to the court a military biography of accused, showing his age; when he enlisted; when, if ever, he has previously been discharged; the character given him on such discharge; any promotions, etc. Next the Trial Judge Advocate reads an abstract of any convictions of accused by court-martial within the past year and within the accused's current enlistment or term of service, or announces that there have been none. Finally he asks the accused if the statement of his military record is correct. The court then goes into closed session to fix the sentence.

In closed session, the members discuss what the sentence should be, and then vote on it by secret written ballot. A unanimous vote is required for a death sentence, the concurrence of three-fourths for imprisonment for life or more than ten years, and of two-thirds for any other sentence. (A.W. 43.)

In fixing a sentence the members of a court-martial do not have unbounded discretion. The 43d Article of War provides that no sentence of death shall be imposed except "for an offense in these articles expressly made punishable by death." The only offenses so punishable are murder, rape, and a few very serious military offenses such as desertion in time of war, cowardly behavior before the enemy, and mutiny. Even as to such offenses, except as to spying, for which a death sentence is mandatory, the court may impose a lesser penalty.

There is one other Article of War which names a mandatory punishment, the 95th, already mentioned, which provides that "any officer or cadet convicted of conduct unbecoming an office and a gentleman shall be dismissed from the service." That punishment may not be increased, for the offense is one against the military standard of honor, for which confinement or a fine would be inappropriate; nor may the penalty be diminished, for on no account ought a man who has done anything dishonorable to be permitted to retain his commission as an officer.

The members of the court are also limited in the imposition of punishment by the Table of Maximum Punishments prescribed by the President pursuant to Article of War 45 and printed in the Manual for Courts-Martial, paragraph 104c.

When a sufficient number of the members of the court agree upon a sentence, the court is opened and the president announces the findings and sentence, and the court proceeds to the trial of another case or adjourns.

When the reporter has typed the record of the trial from his shorthand notes it is signed by the President and the Trial Judge Advocate and forwarded to the officer who appointed the court, who, as has been said, is usually the Commanding General of the division or like unit. When the record reaches the division headquarters, it must, pursuant to Article of War 46, be referred to the Judge Advocate on the Staff of the Commanding General. Either he or one of his assistants reads the record carefully and writes a review of the case summarizing the evidence and closing with a recommendation to the Commanding General of the action which he should take. Here also the Commanding General may approve the sentence, disapprove or reduce it; but he may not disapprove or set aside an acquittal or increase a sentence.

When the staff judge advocate has studied the record thoroughly and written his review, the practice is for him to have a personal interview with the reviewing authority, *i.e.*, the commanding general, at which he lays before that officer the record and his written review, makes an oral explanation of the case, and presents a draft of the action (approval or disapproval of the findings and sentence in whole or in part) which he recommends that the reviewing authority sign. If the reviewing authority has full confidence in his staff judge advocate, he may sign the draft at once; or, on the other hand, he may direct the staff judge advocate to prepare a different draft or he may take the record and study it in detail himself before deciding what action to take on it. Thus, we see that the accused has the benefit of the labors of a trained military lawyer, who is not a prosecutor but an impartial student of the record, and of the wide military experience of the reviewing authority, who is usually a major general.

At the time that he approves the sentence, the reviewing authority may suspend the execution of the sentence or any part of it. (A.W. 52.)

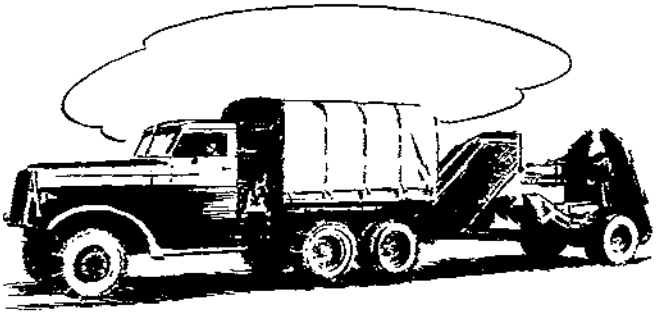
In cases in which the offense involved is a military one not involving moral turpitude, such as desertion, it is the general practice, and not the exception, for the reviewing authority to couple his approval of the sentence with a direction that "the execution of that portion thereof adjudging dishonorable discharge is suspended until the soldier's release from confinement." This permits the remission of the dishonorable discharge at a later date and the offender's honorable restoration to the colors if his conduct while in confinement shall make that course advisable.

After the Commanding General has acted upon the sentence the record is forwarded to the Office of The Judge Advocate General in the War Department at Washington. There every record is read by at least two officers; and those of the graver sort or in which preliminary examination indicates serious error or irregularity are read by the Board of Review, composed of three experienced officers. If it is decided that there has been a serious violation of or deviation from the law in the trial, or that the evidence is legally insufficient to support the findings and sentence, the case is sent back to the division or other unit in which it originated, and a rehearing or new trial may be had, or the case may be dropped and the accused released or other curative action taken.

Sentences of death and a few other grave sentences require personal confirmation by the President of the United States himself. In time of war, with a few exceptions, such sentences may be confirmed by the Commanding General of an army in the field or of a territorial department.

Even after all the authorities required to pass on a sentence have done so and the offender has begun serving his sentence of confinement, he still has a chance. Army Regulations 600-375, paragraph 15*f*, provides for the abatement of the terms of all prisoners for good conduct. Furthermore, while a sentence is being served, the mitigation or remission of the unexpired part of it is always possible. If a prisoner's offense is not one involving moral turpitude, he may be restored to duty. As to general prisoners confined at an army post, the power to exercise clemency is vested in the Commanding General of the Corps Area in which the post is located or other officer exercising General Court-Martial jurisdiction over the prisoner, or the Secretary of War; as to prisoners at the disciplinary barracks, in the Secretary alone. Finally, a prisoner who does not desire restoration to duty as a soldier, or who for any reason is disqualified or unsuited therefor, after having served one-third of his sentence and at least nine months, becomes eligible for home parole.

The Army believes, in view of all the foregoing, that its court-martial system is as lenient and as considerate of the accused as any system of criminal law, and has the advantages of celerity and simplicity.



YOU CAN GET HITS

By Captain Wofford T. Caldwell, Coast Artillery Corps

Since January 1, 1941, the automatic weapons section of The Coast Artillery School has fired well over a half million rounds of ammunition in the instruction of student officers. Of this amount, about 3,500 rounds were 37-mm., 80,000 rounds were caliber .50 ammunition, and the remainder was .30 caliber. All firing was done using the Central Tracer Control Box. Some firing was done at balloons, but about nine-tenths of the total was against a towed sleeve. About one half the caliber .30 ammunition was fired with the gun on the M2 mount and the rest as subcaliber on the 37-mm. mount. Caliber .50 was fired with the gun on the M2 mount. All 37-mm. fire was with the M1A2 gun on the M3 mount. It can be assumed, therefore, that four requisites are present for authority of the conclusions to be enumerated in this article. First, the ammunition expended has been sufficient to draw definite conclusions. Second, all calibers of automatic weapons ammunition were used. Third, all types of automatic weapons now provided units were used; and fourth, firing was done under a wide range of weather conditions.

Too Few Hits

In eight months of firing one half-million rounds of ammunition, the percentage of hits has been, until recently, pitifully small. The records that have been kept over this period of months show about the following percentages of hits for the various caliber guns fired: caliber .30 about 0.7%; caliber .50 about 0.6%; and 37-mm. about 0.2%.

Several reasons were offered at first as an explanation for this small percentage of hits. In the first place, student officers did not have sufficient time in their short course to really gain sufficient knowledge of leads and lead characteristics. So much theory was given them in so short a time that they were left momentarily confused. Furthermore, they were confused at the seeming complexity of the control box adjuster's job.

The matériel was new to many. This led to poor gun pointing; poor gun pointing leads to wide dispersion. Too great a dispersion in the cone of fire leads to poor adjusting, and few hits. All in all, the setup was not particularly conducive of securing a large percentage of hits.

These things, however, were only part of the reason. Lack of familiarity of leads, lack of "feel" for the control box, and wide dispersion can account for some of the poor score. The main reasons were found to be elsewhere. This is now known because scores have been tripled in many instances in the past several weeks. The solution of these difficulties will, it is believed, be of interest to commanders in the field.

The Problem to be Solved

Obviously, the problem that had to be solved was increasing the percentage of hits. In *studying* this problem, one very pertinent observation was made. In *solving* the problem, several experiments were tired, and four proved to be very valuable. The observations that led to the experiments were that *the few hits obtained were in the tail of the sleeve.*

The solutions are not given in the order in which they were tried, but in the order of their importance. They are (1) to train the adjusters and their spotters to interpret what they appear to see in the sky, (2) to train adjusters to understand the things that affect leads, (3) to add "coaches" to the control box detail, and (4) to modify lead charts so they are more readily useable.

Do Not Trust Your Eyes

Neither an adjuster nor his spotter can trust his vision when it comes to looking at a tracer stream with reference to a target in the sky. This is due mostly to three things: (1) the illusion of the curved tracer stream, (2) inability to determine the relative range of two distant objects, and (3) natural tendency of the eye to focus on the brighter of two objects.

The fact that the target is moving causes the illusion of the curved tracer stream. This illusion makes it possible for the observer to find a point somewhere along the tracer stream where the tracers appear to him to be going through the target. (The exception to this rule is where the tracer stream is either very high or very low, or behind the target.)

Inability on the part of the observer to determine the relative range of two distant objects in space makes it very hard for him to pick the correct range at which to make the tracer stream appear to go through the target. If he could look at the target at a range of 500 yards and then look at the tracer stream at the same range, he could move it accurately to the target. He cannot do this, however, due to the limitations imposed by depth perception. If his target is at range 500 yards, he cannot be sure within 250 yards that the tracer he is looking at is the same range.

The eyes will naturally focus on the brighter of two objects. Tracers appear to burn less bright the farther away they get from the gun. They appear to lose fully one half of their intensity at ranges beyond 400 yards for the caliber .30 tracer bullet. If the target is flying at a greater range than this bright part of the tracer's path the observer must overcome his natural tendency to focus his eyes on this bright part of the stream, and must try to look beyond to the range of the target.

The answer to these difficulties is training and experi-

ence. Training can be accomplished in two ways: (1) by using the Tracer Trainer and (2) by actual firing. The Tracer Trainer gives valuable knowledge of the magnitude of leads, as well as practice in turning adjusters' handwheels at the proper rate. Practice with the trainer does not, however, give the solution to the problem that arises from depth perception limitation nor to an observer's tendency to focus on the brighter of two objects. These two problems have their solution in the field. They can be solved to a great extent by firing at targets with known range.

Yardstick in the Sky

An adjuster must be able to estimate ranges and altitudes. He can learn to estimate ranges to his targets only by looking at targets that are flying courses whose ranges are known. This can be done by simply taking records on various courses. The instructor then has his adjusters estimate these ranges and check their estimate against fact.

An adjuster must further know what his tracer stream looks like at various ranges. He can learn what the tracer stream looks like by firing at land, air and water targets at known ranges. He can learn at what ranges tracers appear to suddenly dim. He can get the "feel" for time of flight to certain ranges. His tracer stream then will become something that he can use rather than being just an illusion. He will have his yardstick in the sky.

The Spotter

Without proper training, the spotter may prove to be of more harm than good to an adjuster. Unless the spotter has been trained to know what the tracers look like at various ranges and unless he can estimate ranges to the target as well as the adjuster can, he is apt to be looking at the tracer stream at a different range than is the adjuster.

Figure 1 represents a target in the sky, the control box, the lateral spotter (L) and the vertical spotter (V).

Suppose that the target is being engaged and the tracer stream actually is going through the target's po-

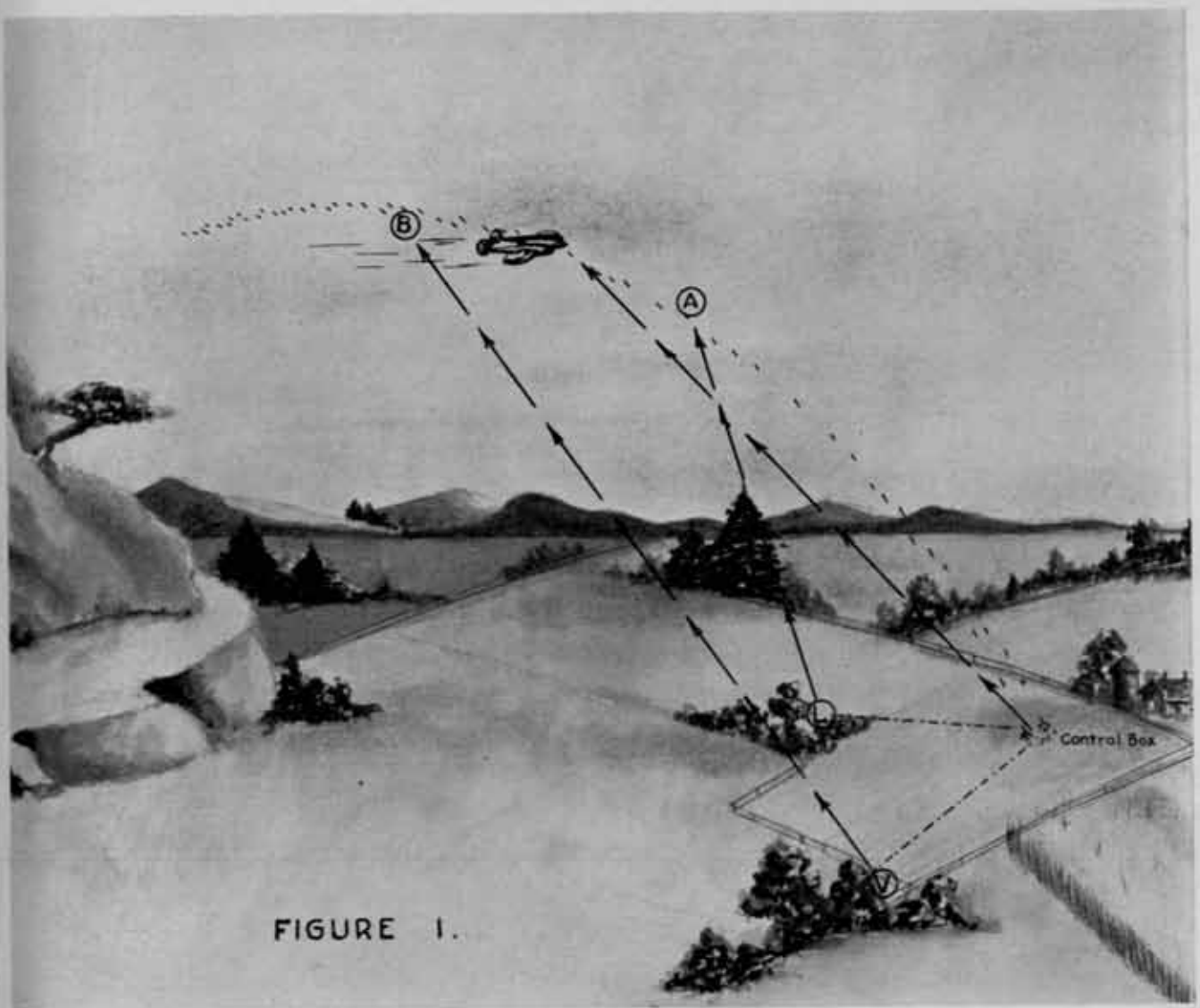


FIGURE 1.

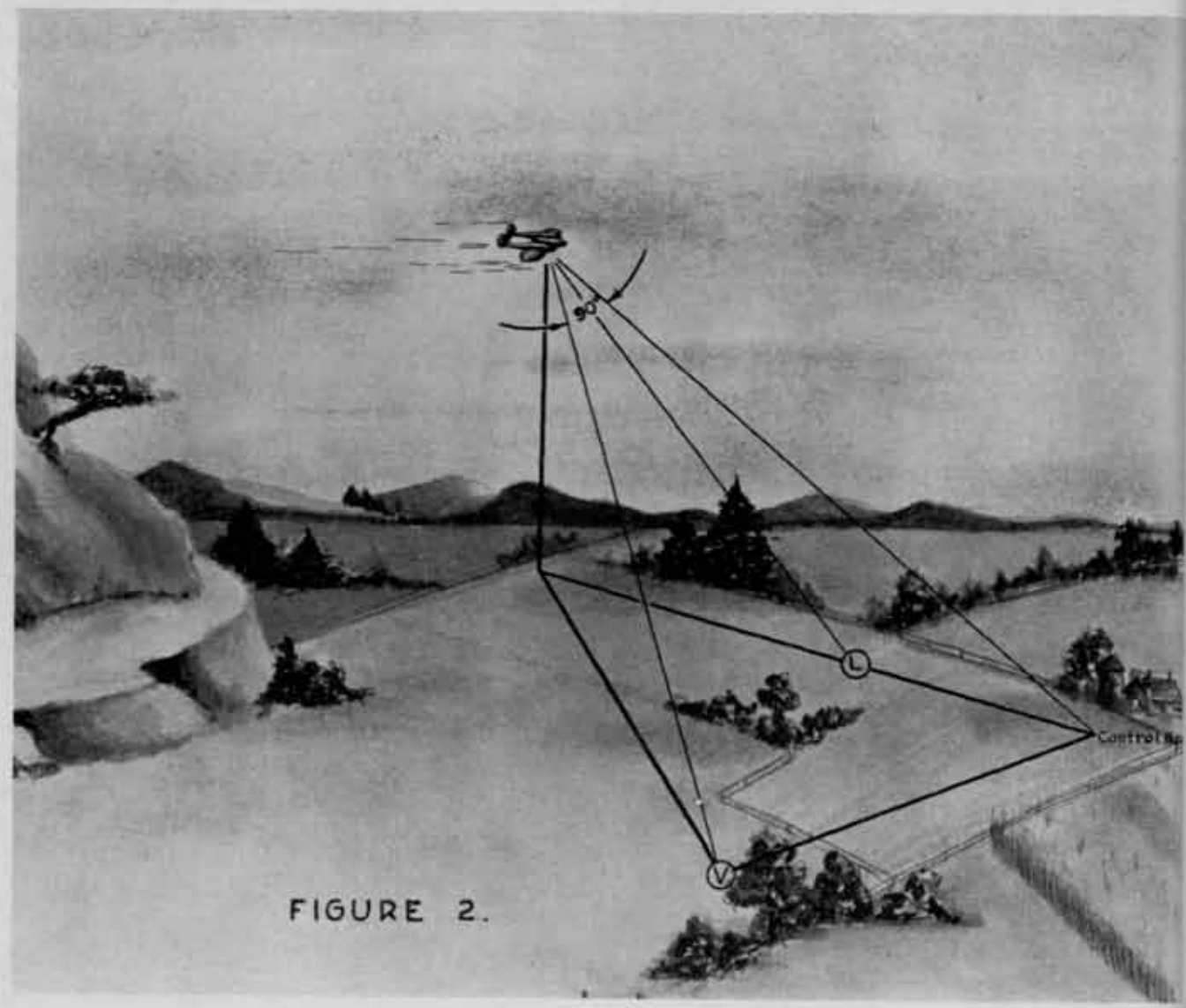


FIGURE 2.

sition. In this figure the adjusters at the Control Box are looking at the correct range along the path of the trajectory and are actually seeing that they are getting hits. Suppose, however, that the lateral spotter (L) is not looking at the tracer stream at the right range but is looking at a point (A); the tracers will appear to be ahead of the target and he will call *right* to his adjuster. Similarly, suppose that the vertical spotter (V) is looking at too great a range along the path of the tracer stream. The tracer stream will appear to be too high and he will call high to his adjuster. It is an obvious conclusion that, until spotters have been given the same training in estimating range and determining what tracers look like at those ranges, they will be of very little value to the adjusters.

It is common belief that, because he is on the flank away from the gun position, the spotter is always in a better position than the adjuster to observe deviations of tracer fire. This is true only within certain limits. It is true when the lateral spotter is on a line between the guns and the target, and it is true when the vertical spotter is in a position where his line of sight to the target makes a right angle in the slant plane with the path of the projectiles from the guns. (See Fig. 2.)

The lateral spotter's advantage diminishes, however, as the position of the target changes so he is no longer on the line from the guns to the target. The vertical spotter's advantage diminishes, too, as the angle "spotter-target-gun" becomes more acute. The conclusion is NOT that spotters are valueless, but that adjusters must understand the limitations imposed by the spotters' position during the course of the target; and that adjusters must be taught to take the responsibility for making fire adjustment even while listening to the deviations being called in by the spotters.

Differential Effects

Differential effects are those various determinables that affect leads. Leads are calculated in terms of range to midpoint, altitude and ground speed. Several other things affect the values of these calculated leads, such as, wind, gun dispersion and muzzle velocity. Muzzle

velocity loss has the greatest effect, since it also causes some gun dispersion.

Match Your Guns

Improper matching of gun barrels will cause the magnitude of dispersion laterally to become too great while firing at a moving target. The job of matching gun barrels is not difficult. To bore gauge a machine gun barrel to determine wear, use a projectile with a rod on it if none is furnished by the ordnance. Field manuals give the method of making the bore test, but briefly it is measuring how far a bullet will drop down the breech end of the barrel. All the gun barrels of a platoon should be matched to within one inch of gauge depth before firing. You will thus be able to compute the loss of muzzle velocity and keep down excessive lateral dispersion.

Loss of Muzzle Velocity

It is estimated that the effective life of a machine gun barrel is gone when the bullet gauge shows six inches of depth for the caliber .50 and three inches for the caliber .30. These seatings indicate a loss of muzzle velocity of about 200 f.s., and the effective life of the barrel. Loss of muzzle velocity means longer time of flight. Difference in time of flight means greater dispersion in shots fired from the several barrels. Increase in time of flight means increased leads. At a normal MV of 2,600 f/s, a loss of 200 f.s. with a target at 1,000 yards range, there will be an increase of 1/10 second in time of flight. If a target is moving at a speed of 150 yards per second, it will travel 15 yards in this 1/10 second increased time of flight. Fifteen yards at 1,000 yards means that 15 mils additional lateral lead would be necessary to get hits at this range. Any appreciable loss of muzzle velocity must be taken into account when firing. Lead charts are computed with definite muzzle velocity assumed, so lead chart values will not give hits when guns are not developing this standard muzzle velocity.

If the bullets fired from the machine guns of a platoon vary in time of flight as much as a tenth of a second, it has the effect of spreading out the cone of fire in the direction of flight of the target. Two projectiles, let us say, are fired at the same instant at a target 1,000 yards away. One arrives at the target just in time for a hit on the nose. The one that is a tenth of a second slower will arrive when the target has moved ahead fifteen yards. This gives the effect of spreading out the cone of fire, and decreases the probability of hitting. It further gives a cone of fire that is difficult to adjust. The importance of matching gun barrels in platoon is therefore quite obvious.

Wind

Wind not only changes the speed of the target but it affects the flight of the projectile. Adjusters have no way of knowing air speed of targets in combat, and only make an estimate of the ground speed, and since only ground speed concerns the adjuster, the effect of wind on the target's air speed is disregarded.

Wind does affect the path of the projectile. A thirty mile an hour cross wind will deflect a caliber .30 projectile four mils in 500 yards and 10 mils in 1,000 yards range, if the developed muzzle velocity is 2,800 f.s. This will increase to twelve mils in 1,000 yards if the developed muzzle velocity is only 2,500 f.s.

A thirty mile an hour head wind will affect superelevation roughly in the following manner: At 2,700 f.s. muzzle velocity and firing at angular height 800 mils, the projectile will be deflected about three mils higher at 500 yards slant range and about seven mils higher at 1,000 slant range.

These values of lateral and vertical deflection for cross and head wind are not particularly great when it is taken into consideration that opening fire will seldom be closer to the target than these differences. But, these effects on lead charts values must be kept in mind before fire is opened so initial leads will be as close as possible to the target.

Ground Speeds Shown on Lead Charts

The practice has been to compute leads and construct lead charts for a twenty yard per second increase in ground speed of the target. Thus one lead chart will show leads for targets with speeds of fifty and seventy yards per second. This is done because it covers the speeds expected in target practices.

A great deal of the thinking and study at the place of business of the units in the field should be in terms of combat targets. These combat targets are going to fly at speeds ranging from a mere fifty yards per second to a possible speed over 200 yards per second. That is quite a range of speeds, especially considering that ranges and altitudes will have great variations as well.

It is splitting hairs to compute the leads caused by an increase of a mere twenty yards per second. In the first place it is rather difficult for an adjuster to estimate variations in speed of only twenty yards per second for air targets. Fifty yard increases would be readily noticed, however, and he could interpolate half way between.

Look at a few figures in this connection. Suppose that the lateral lead for one place on a target's course is sixty mils for a fifty yard per second target. The lead would be 122 mils for a 150 yard per second target. This follows the rule of thumb that lateral lead increases proportionally with speed.

The adjuster can study leads sufficiently to be able to know the key values for large differential effects. He can know that if a 100 yard per second target needs a lateral lead of 120 mils at the midpoint it will need about 240 mils at same point for a 200 yard per second target. He will also be aware that a target flying at something less than 100 yards per second will cause that lateral lead to decrease a proportionate amount. Further, that a target flying at 150 yards per second will

need a lead about half way between the 100 and 200 yard per second target lead.

Such figures will not confuse him too greatly. It will give him a broad understanding of lead values. Lateral leads and changes in speed have been used in the illustration of this problem. Changes in range, altitude or angle of dive could as well have been used. Vertical lead, too, could have been used. The differential that causes the greatest effect was used so that the point might be emphasized.

If the adjuster tries to remember the actual values that will result from small changes in target speed, altitude or range, he will become confused. If he has the broad picture of differential effects in mind, however, he can open fire fairly close to the target. If he can open fire relatively close to the target he can adjust to it quickly. He must keep in mind always that the theory behind the practical use of central tracer control is *adjust fire to the target—from the control box—by observation of the tracer stream.*

Coaches

An expedient to the training of adjusters on the control box has been the addition of coaches. For practice and instructional purposes, two men are added to the control box detail. One man is stationed at the elbow of both the lateral and the vertical adjusters. They are given lead charts especially prepared for their use. Their job is simply to help the adjusters set the correct lead chart values on the control box dials.

Let us examine the job of the adjuster. He determines where the midpoint will be, what the range to that point will be, the altitude, and the target's speed. If a lead chart is available for this data he can look up the value of the leads for any point along that target's course.

As the target flies, he must put on to his adjuster's dial the values of the leads to be transmitted to the gun sights. These values change constantly during the target's course. This change, however, is not uniform. This means that the adjuster not only has to know the correct value of a lead at any one point, but must be able to change that lead at the proper rate. This is too much of a job for an adjuster just learning his job, so coaches may be used to help him.

Method of Using Coaches

(See Figure 3: Modified Lead Chart.)

(1) Each coach is furnished with a lead chart that gives the vertical or lateral leads for the target being engaged.

(2) The instructor (or the adjuster) determines the following:

a. Altitude,

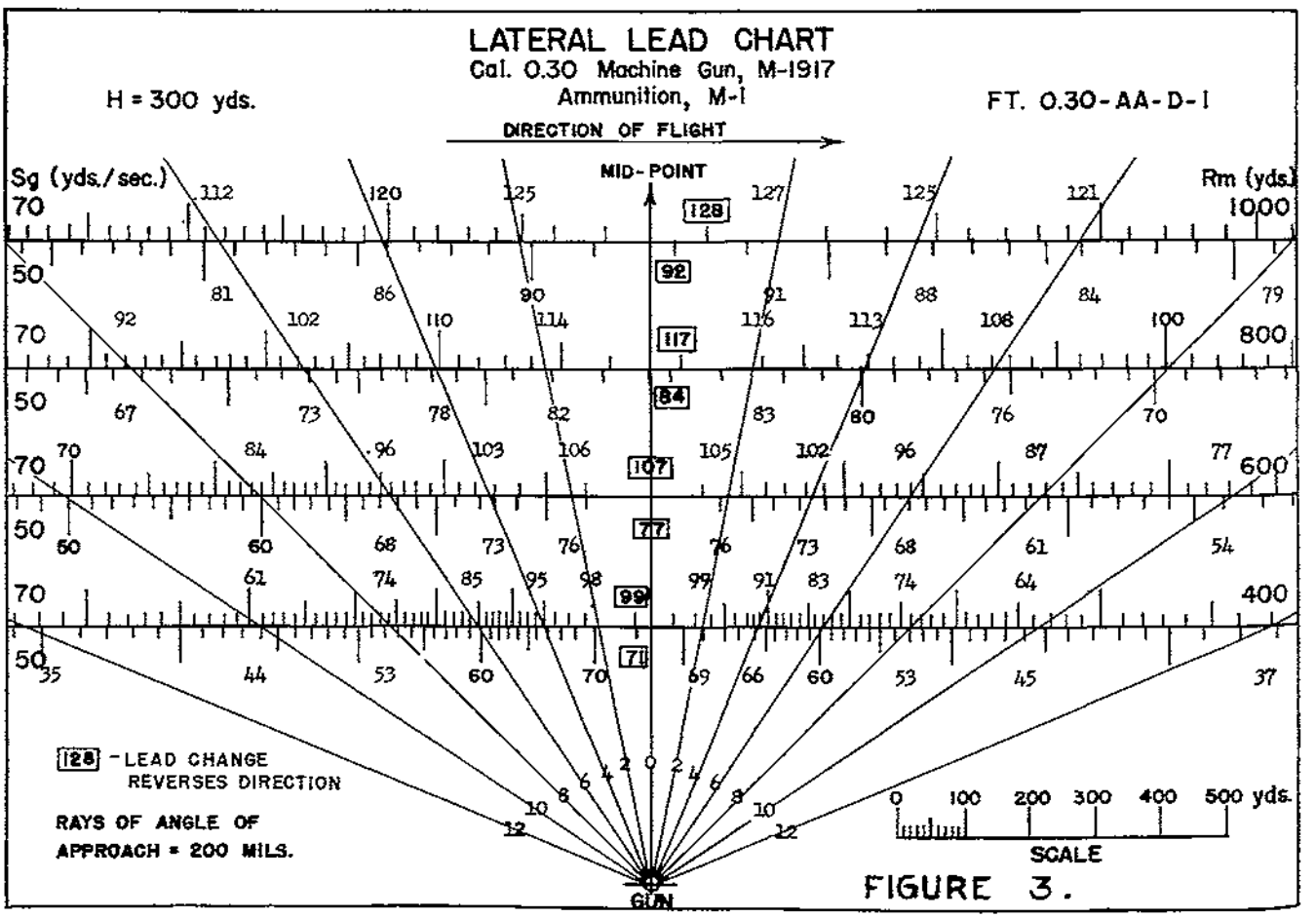


FIGURE 3.

b. Range to midpoint,
c. Speed of target.

This designates the lead scale to be used on the chart.

(3) The instructor then locates the various positions of the target as it flies along the course. This is done by calling out the angle "midpoint-gun-target." An examination of the lead chart will show that the mil ray lines are numbered for each 200 mils, starting with zero at midpoint. For instance if the instructor calls *800* the coach has designated to him the point on his scale where he will read a lead value.

(4) The coaches call off the value of the lead at the points as designated by the instructor.

(5) The adjusters set these values on their dials and *continue to turn their knobs at what they assume to be the proper rate.*

(6) This process continues until *commence fire* is given.

(7) At *commence fire* the adjusters concentrate on the target and adjust fire by observing the tracer stream.

The result of all this is simply that proper lead chart values are set on the box when fire is opened. The adjusters get a "feel" of the proper rate of turning. Opening fire is nearer the target and fire adjustment is made earlier. The coaching method should prove very valuable in training adjusters, and might even be used in preliminary target practice.

Modified Lead Charts

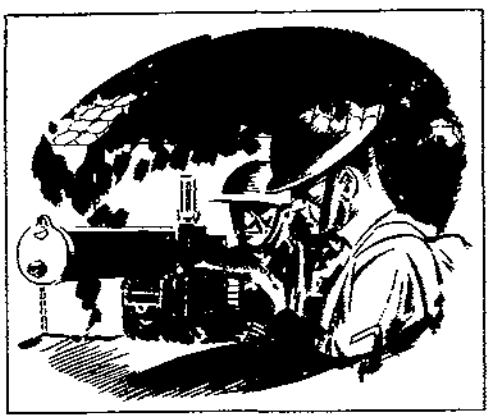
As will be seen by examination of the lead chart in figure 3, two modifications have been made. The first is to designate the mil ray lines by their value in hundreds of mils away from midpoint. The second change is to erase the even ten mil values from the chart and substitute the lead values at the point where the mil ray lines cross the lead scale lines.

An adjuster cannot look at a target in space and determine the value of alpha-sub-o. One very definite angle, however, can be estimated. For a crossing course it is the horizontal angle that the target makes with the control box and the midpoint. For a coming course it is angular height. Making scales where even ten mil values show gives a good looking chart, but an adjuster wants values at points that he can determine by examination. Show lead values only where the mil ray lines show; number the mil ray lines with reference to a point that can be determined and you will have a chart that you can use.

You Can Get Hits

The solutions to the problem of hits in the tail have proved that the percentage of hits can be greatly increased. The biggest job is to train adjusters and spotters to interpret what they see—then to use it! Spotters are valueless until trained. Adjusters have to receive a broad education in the differential effects of leads. They cannot remember a myriad of lead values. They can be trained to open fire fairly close, adjust quickly to the target and continue "on" the target by proper change in leads.

It has been demonstrated that coaches can be of material assistance in the training of adjusters, and that lead charts can be modified to make this instruction more practicable. The whole conclusion has been, however, that central tracer control is good when intelligently used, and that YOU CAN GET HITS.



Graded access roads built through the wastes of the Mojave Desert at the Mojave Antiaircraft Artillery Range to firing positions, searchlights, outposts, and between various firing ranges.

Camp Haan AA Firing Range

By Major Paul B. Nelson, Coast Artillery Corps

Camp Haan is located eleven miles southeast of Riverside, California, just across the railroad tracks from March Field. This Antiaircraft Artillery Training Center, now commanded by Major General Fulton Q. C. Gardner is the only such training center on the Pacific Coast. The reservation is approximately four miles long and an average of about one half mile in depth, and houses in its tent camp facilities a total of two coast artillery brigades and a considerable number of special troops.

In view of the distance to the Mojave (pronounced mo-hā'vā) Antiaircraft Artillery Range from Camp Haan, 128 miles, early familiarization with motor transportation was necessarily rapid and comprehensive by all troops at the training center. Trips to Palm Springs during the rainy months, running out of the "fog" belt into the dry expanses of the lower sunny Mojave Desert soon developed into regular trips during winter and spring months to the Antiaircraft Artillery Range thirty miles north of Barstow, California.

The barren waste lands, rugged terrain, and dryness of the selected site for the Mojave AA Range gave promise to great training possibilities when first viewed by Brigadier General E. B. Colladay, then commanding Camp Haan, in December, 1940. However, a tremendous amount of development was required before the capabilities of this 650,000 acre reservation could be exploited. Approximately fifty-four miles of permanent telephone pole line construction was installed insuring continuous teletype and telephone communication between Camp Haan and the artillery range. An additional eighty miles of inter-range control and safety telephone lines are now under construction. Fifty-five miles of paved road was constructed from Barstow into the AA Range and key points therein. Two hundred and fifteen additional miles of graded dirt road has been completed within the range proper to provide communication between the five separate range areas and to searchlight and detection post positions, and further road development is under way.

Here, in Southern California, water is a valuable commodity at any time, particularly during the summer months. On the blistering flats of the great Mojave Desert where the Mojave Antiaircraft Artillery Range extends up into the southern end of the ever parched Death Valley, water becomes priceless. The location and development of an adequate water source was therefore a governing factor as to where and when troops could start training at the huge range. After numerous highly technical and pessimistic discussions on water location, local desert talent was exploited to locate a dependable water supply. The local desert expert on water location arrived at the desert range with only a freshly cut, forked willow stick, his complete equipment, which he held in some mysterious way as he moved from place to place looking for an elusive water supply. Followed by an incredulous and somewhat amused group of officers, the divining rod expert gave them little notice but busied himself with his forked stick and shakings of his head, as one after another, prospective sites proved failures.

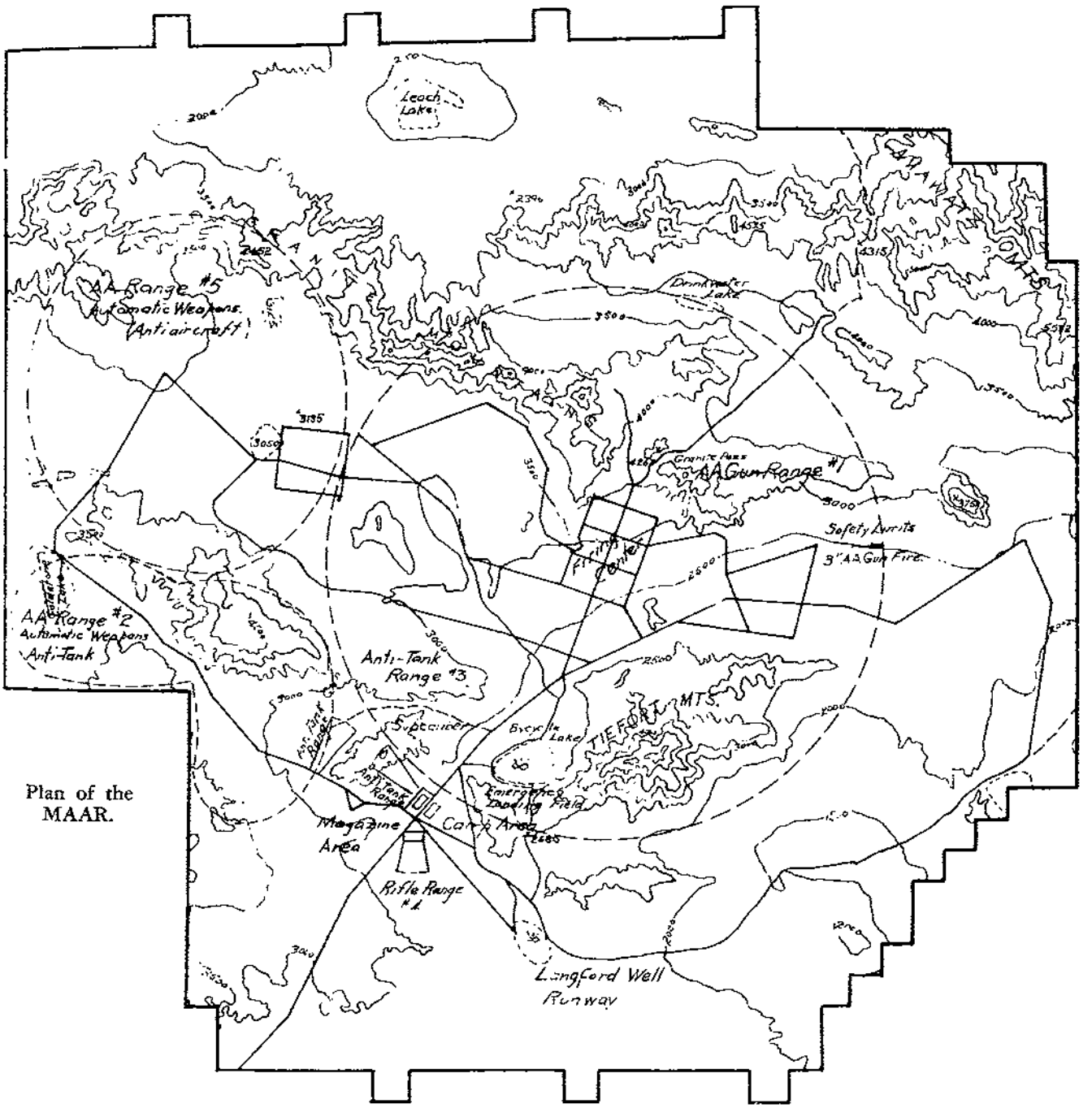
The sun was rapidly dropping, everyone was footsore,

tired, and parched, and sarcastic thoughts were foremost in the minds of most of the officer group when the "expert" began to act as though the forked divining rod was being twisted out of his hands. His excitement was infectious. The forked willow wand writhed in his tense grip as he rapidly walked from place to place tracing out on the ground a mythical underground water supply.

"There she is," he proudly announced.

Everyone knew that any dependable water site was bound to be deep. At the exact site of the divining rod location there are now in operation two sixteen inch wells 540 feet deep, from which a continuous flow of 250 gallons per well of pure water every minute is pumped. Desert talent had proved itself, and the future of the desert firing range was assured.

As soon as an adequate water supply was developed construction of a complete regimental tent camp area to accommodate 2,000 men, with the usual frame buildings for mess halls and other facilities, plus warehouses, shops, and a cold storage plant, was started at the desert range, about April 1, and is now completed. Electric power lines were brought in, parallel to the freshly paved road from Barstow, thirty miles away. With modern roads, water supply, sewerage, electric power, signal communications, landing field and comfortable housing, a desert city waited only for occupants to breathe life into the newborn military community.



Plan of the MAAR.

Figure 1

Overlooking Mojave Antiaircraft Artillery Range. The tent camp, visible at the left, can house one regiment at a time. White streak at upper left is Bicycle Lake, a dry lake bed used as emergency landing field. Cleared rectangle at right center is 150 target rifle range in process of construction.

Reconnaissance during the months of January and February, 1941 to develop the maximum use of the available terrain was in some cases halted by cold, by tortuous terrain, and by impassable wagon roads of the old twenty mule borax and ore train days. In Granite Pass one party was forced back by a driving, blinding snowstorm. Shivering and cold, the lightly clad party of two officers and one driver turned back, and after two and one half hours of sleet, rain, and snow, dropped down through Cajon Pass into Santa Ana Valley, back to the then balmy weather at Camp Haan.

The exploitation of the vast area included in the thirty-five mile square, involved initially the determination of the most easily accessible areas. This was followed by extensive survey operations to select routes for primary access roads and to develop a road net which would not only fit the immediate communication requirements of newly located ranges, but at the same time would be easily adapted to any future expansion of the range facilities. See Figure 1.

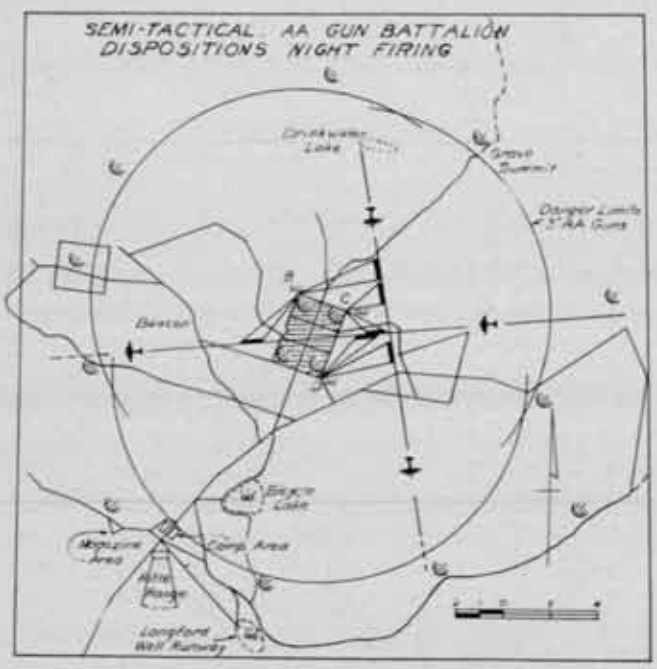


Figure 2

Initial preparatory firing-calibration, trial shots and burst problems were fired by five AA Gun Battalions across the flats of Bicycle Lake and above the crags of Tiefort Mountain late in May of 1941.

The immense expanse of this terrestrial range, all of which is absolutely under Army control, permits uninterrupted firing schedules, eliminates the necessity of worrying about outside agencies straying into the field of fire. The only animals within miles are long eared jack rabbits, an occasional fox, and thousands of horned toads and desert lizards.

A word about the so-called lakes indicated on the sketch heretofore referred to. These lakes are generally bone dry, concrete hard, and pavement smooth for about 300 days out of the year, and their surface presents readily available landing fields for airplane towing detachments, and for the essential liaison conferences between the firing battalion commanders and the pilots flying their gunnery missions. They are also extensively used as target ranges for antitank firing, on fast moving targets in particular. The size and potential advantages of these lakes can be appreciated when it is understood that no less than five of them on the MAAR can probably be used as landing fields for B-18 bombing or C-39 transport planes. Langford and Bicycle Lake have already been so used. Many of the smaller lakes can readily be used for the smaller type 0-36 towing planes used for automatic weapon ranges.

One lake in particular, Langford Wells Lake, because of its proximity to camp and exclusion from firing ranges is employed as an advanced operating airdrome for the airplane towing detachment based at March Field, and for essential air-ground liaison for target practices.

Gun firing by regiments was initially conducted with guns and batteries in line, and immediately adjacent to each other with a battalion safety officer enforcing

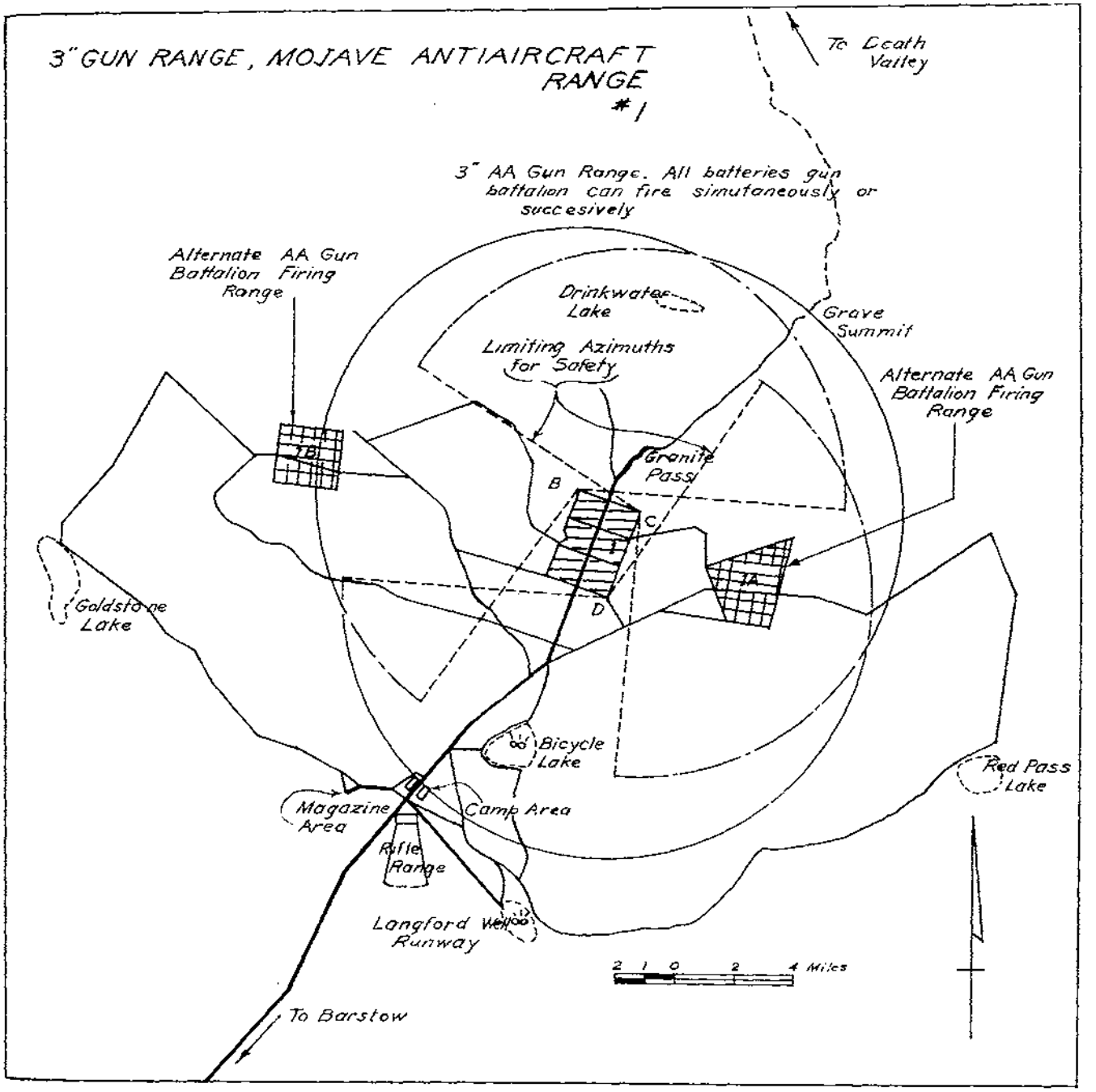


Figure 3

safety precautions. Each battery had a field of fire of approximately 150°. On all courses except the zero course each battery fired at least two guns in bursts of from six to ten rounds per battery. As the plane took up its flight on the rectilinear crossing course and the safety angles were cleared, gun battery safety officers successively gave *All Clear* to the chief safety officer. When all gun batteries had signalled *All Clear*, the chief safety officer gave a clearance on the course and firing began.

As the target came within range of Battery *B* two guns opened up with four rounds per gun, after which that battery ceased firing. A few seconds after *Cease Fire* for *B* Battery, *C* Battery opened fire, then ceased fire, whereupon *D* Battery fired its string. In some cases Battery *B* could have fired a second string of shots but for safety reasons, to prevent firing over the heads of adjacent gun battery personnel, this was not permitted. This type of firing, after carefully executed preparatory fire, was instituted to facilitate initial technical control and to insure familiarity of all personnel with the functioning and the necessity of safety control.

One preliminary day practice was fired from these closed positions by each battery prior to occupation of dispersal or target-tactical positions. These latter positions placed firing batteries from two to three miles apart on the outer perimeter of the firing center grid. See Figure 2.

With batteries placed at the corner of the grid firing center and prescribing a maximum of 15° safety hori-

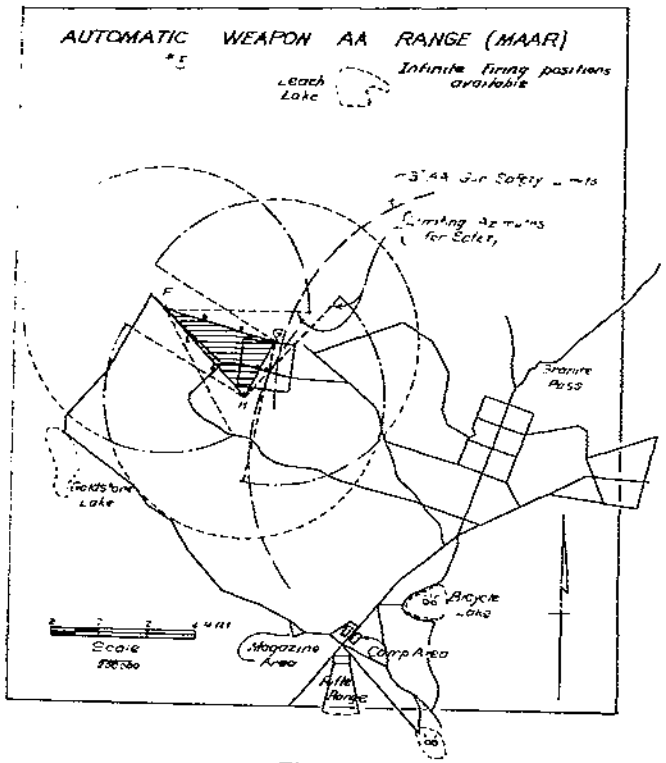


Figure 4

zontal angle with respect to the adjacent sides of the gridded road net, each battery was afforded a field of fire of 240°.

Target towing planes are ordered to fly general courses only, using the center of the firing center grid as a bombing objective, and batteries are ordered to fire without further command when the target is in range and the battery safety officer clears the course. With this disposition two batteries generally fire on a crossing course while the third battery may be able to fire on outgoing courses. The gun battalion commander may direct the fire of two batteries to permit only one battery to fire at one time in order to obtain satisfactory records of analyses.

Gun firing night practices were also conducted from dispersal or semi-tactical positions. Guns were emplaced in prepared tactical positions, being partly dug in and partly sandbagged into combat emplacements. All fire control equipment was similarly placed in sandbagged pits for firing operation. Four pickup lights and one beacon light were emplaced within the limit of the firing grid, and eleven searchlights were emplaced beyond the perimeter of a safety line delineating the maximum danger zone for all guns as emplaced. See Figures 2 and 3. With this setup, the beacon light initially laid horizontally to give the pilot aloft a "fix" on his next course was elevated to the vertical as soon as a radio "check in" was received by the regimental plane director located near the center of the firing grid. With a maximum and minimum altitude strata in which to fly and a beacon light to guide on, the pilot chose his courses at will and was fired on by batteries as soon as within range, safety conditions permitting. On practically each course of night practices at least two batteries were able to fire, and in some cases all three could fire. Simultaneous firing, while permissible, was avoided by using battalion commander control in order to insure records for future analysis.

Automatic weapon firing was conducted, both at fast moving sled antitank targets and at towed airplane sleeve targets. See Figures 4 and 5.

Machine gun firing with .50 caliber AA Machine Guns was conducted on one of the dry lake beds, using a locally constructed version of the Ordnance M-2 fast moving target, dimensions being almost identical. Towed behind a truck with a ⅜" flexible cable tow rope this sled was easily towed at speeds from twenty-five to thirty-five miles per hour. At a minimum speed of twenty-five miles and range of 600 yards the target canvas was literally shredded, and the metal framework of the target badly punctured by the controlled fire of two machine gun platoons. An hour's work with an acetylene torch in the shop or field would place the riddled target sled in A-1 shape again. In spite of no less than seventy-five .50 caliber machine gun holes in sled runners and in target superstructure, the fast moving targets used did not deform to any noticeable degree. This target is especially recommended for antitank firing; however, an acetylene welding outfit and a fist full of small preformed 2" x 2" metal plates are essential to repair fractured or punctured target members at the end of any prolonged firing period.

Development of firing facilities (See Figure 1 for MAAR) to meet both immediate demands and probably future expansion are all incorporated in the layout of training facilities, both at Camp Haan and at the Mojave Antiaircraft Artillery Range. The intervening distance, involving motor operations up long grades and across tremendous desert expanses, operates to de-

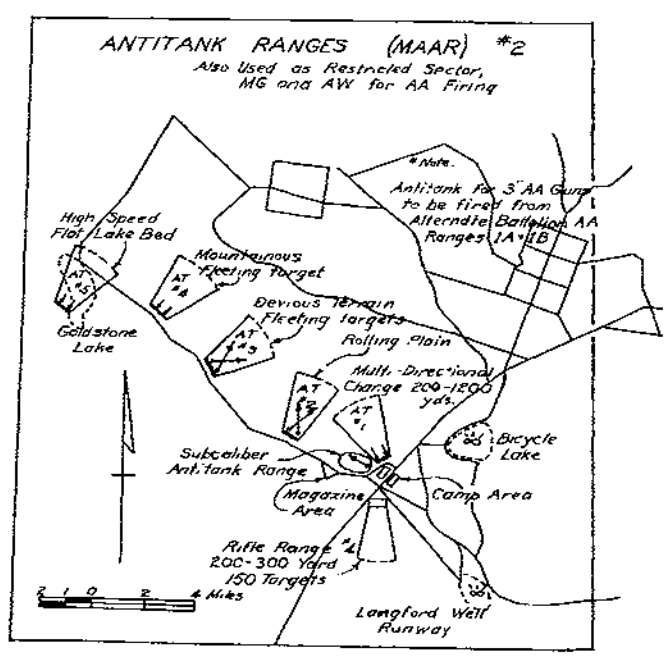


Figure 5

velop almost endless training possibilities for driver personnel and for convoy operations.

At the Mojave Antiaircraft Artillery Range five separate ranges, with numerous subranges and greater expansion possibilities, are installed. See Figure 1. These ranges are:

Range No. 1—3" AA Guns or 90-mm. Guns—Brigade AA firing center (guns only). See Figures 2 and 3.

Range No. 2—Automatic Weapon Antitank—includes four (4) antitank subranges using trucks to tow targets and limitless 170° AA firing positions. See Figure 5.

Range No. 3—Power Winch operated subcaliber and normal caliber antitank ranges—firing points walking distance from desert camp. See Figures 1 and 5.

Range No. 4—Rifle Range—150 target frames, concrete butts, 200-300 yard firing points "Class A," complete water, modern sewerage, and communication installation, walking distance from camp. See Figure 5.

Range No. 5—Automatic Weapon Antiaircraft—almost limitless 360° firing points for all caliber automatic weapons, however, for safety reasons firing units will generally be emplaced around the perimeter of predesignated danger space—generally a road bounded gridded area with a safety clearance of 15° horizontal angle between firing platoons and will fire outward in normal firing sectors. In dispersal positions firing positions are so located and safety zones so established that targets may be fired upon by a number of machine gun or 37-mm. (AA) platoon successively or simultaneously without incurring undue risk or violation of safety procedure. See Figure 4.

The firing possibilities of this tremendous antiaircraft range are certainly the answer to an artilleryman's dream; no boats in the field of fire, no waiting for the field of fire to clear, and no worries about unseen traffic or possibilities of personnel in wooded areas. The nearest bush over five feet high is thirty-five miles away.

The coördination of firing ranges and the conditions which will permit simultaneous firing in five separate range areas without interruption presents daily a complexity which time, coöperation, and perseverance will solve. Problems are worked out individually by the regiments themselves, each succeeding regiment profiting by the experience of its predecessors.

The commander alone is responsible to his superior for all that his unit does or fails to do. He cannot shift this responsibility to his staff or to subordinate commanders.—*Field Service Regulations.*

Fort Bliss Anti-Mechanized Target Range

By Major Frank C. McConnell, Coast Artillery Corps

The need for an antimechanized firing range at Fort Bliss was anticipated long before the extent of the present expansion of the Army was made known. This need was answered in 1940 by the construction of two moving target courses for antimechanized firing, employing the force of gravity for target movement. The project was designed and supervised by the Post and 1st Cavalry Division Ordnance Officer, Lieutenant Colonel R. W. Daniels, Ordnance Department. The two ranges provide varying types of high speed courses for firing by all kinds of antitank weapons and are used by the antimechanized elements of the 1st Cavalry Division as well as by the Antiaircraft regiments of the Fort Bliss Antiaircraft Training Center. Figure 1 is a map showing location of the two courses.

The courses were built as narrow gauge (30″) railroads, using standard railroad practice in grade construction. The curves were banked to hold a 125-pound target-car at thirty-five miles per hour. The steel rails used weigh twelve pounds per yard per rail. Light steel ties were used at normal intervals in the initial construction. After a period of usage however, it was found that the track had a tendency to slip down-grade. This slippage was stopped by using a standard wooden tie every twenty-five feet.

Grades vary from 3½% to 8%, on the two courses. This gives an average speed of about twenty miles per hour for each course with the standard un-weighted target-car. Of course the speed varies at different sections of the course, depending on the grade. On the

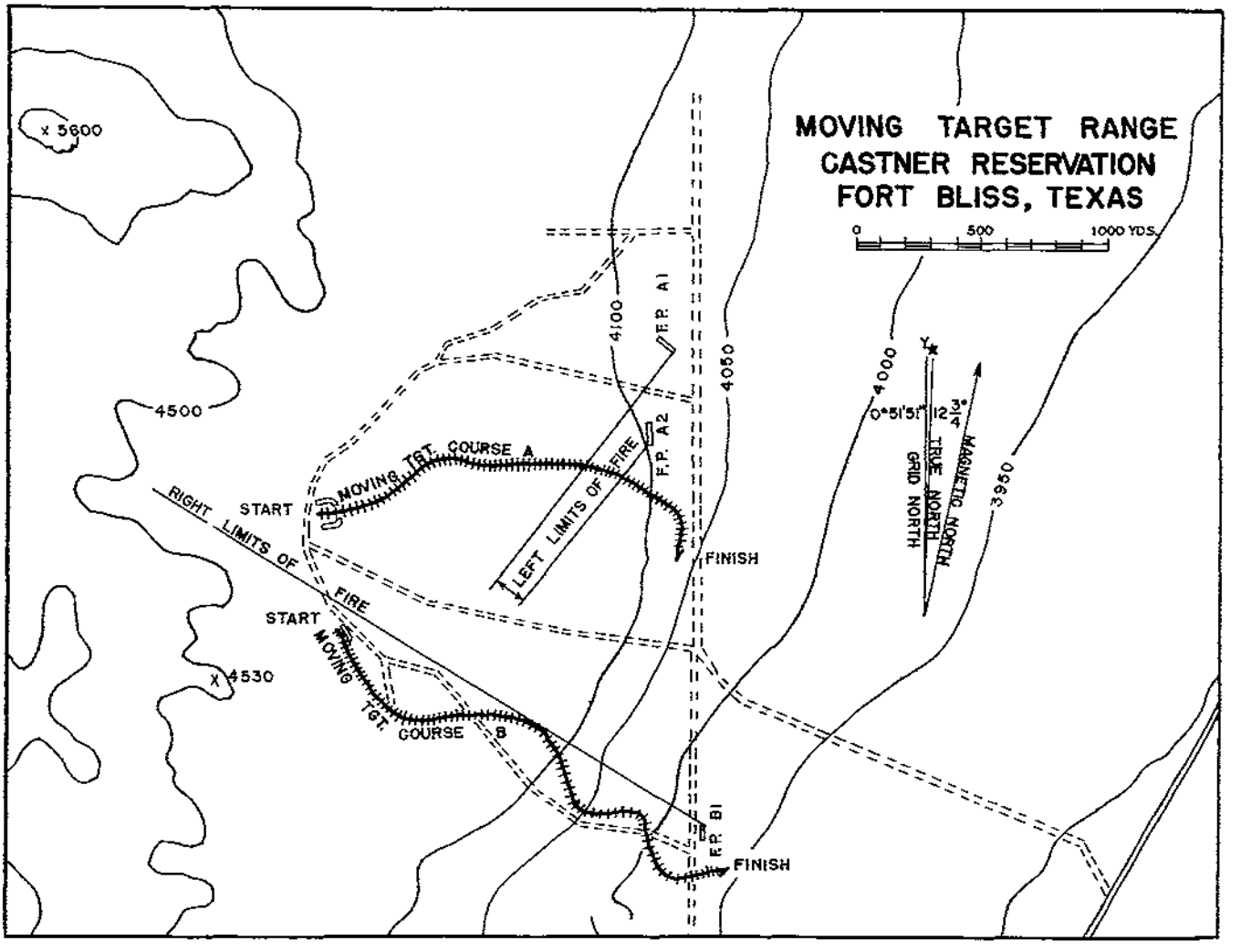


Figure 1: Map of Antimechanized Target Range, Fort Bliss, Texas.

2—Target-car chassis. Note framework for target cover. 3—Incline and bumper for stopping cars. Note switch to loading spur. 4—Unloading platform at start of course. Storage space on platform for extra targets. 5—Battery H, 260th CA (AA) on Firing Point "A-1." Note two targets on Course A in distance. 6—Starting point of Course A. Note "Chinese Gate" type wall to protect target detail.

firing point side of the track, protection to the grade and target-car chassis is provided by a sand-bag wall where natural defilade is not available.

The target-car used was constructed locally. As shown in the accompanying photograph (Figure 2), it is a four-wheel, two-axle single chassis with a skeleton frame made of light iron pipe for mounting the target covers. These latter are made of standard target cloth or canvas (salvaged shelter halves), and painted to blend with the natural background. (In the photographs accompanying this article, standard white target cloth was used in order to provide contrast for photographic purposes.) The car weighs about 125 pounds complete, so that each car can be handled by two men at the loading and unloading platforms.

After a car has made the run downhill, it is stopped at the lower end by an upgrade stretch of track ending in a substantial wooden bumper. (Figure 3.) The car is then switched by hand movement on to a spur terminating in the loading platform. The platform track is the same height as the bottom of a 1½-ton truck, so that the car is rolled directly into the truck. After loading, the cars are hauled uphill to the starting point, in the truck. They are unloaded at a similar platform, as shown in Figure 4. The unloading platform provides storage space for a reservoir of eight or ten targets, so that several courses, of a varying number of targets on each course, can be fired on before the supply has to be replenished from the finish point. The targets are released on order from the firing point. Communication is maintained over a buried telephone line from each firing point to the starting point of each course. (Note field telephone at Firing Point in Figure 5.)

Course *A* is about 1.1 miles long, and was designed primarily to provide targets coming almost directly toward the firing unit. Course *B* is somewhat longer, about 1.3 miles, and provides crossing targets, both approaching and going away from the firing unit. Speed of the target cars can be increased by weighting them with sand bags. In this way the average speed over each course can be varied from twenty to forty-five miles per hour. Ranges from the firing points shown on the sketch (Figure 1), to the target course, vary from 200 yards to 1,800 yards. Of course these ranges, as well as angles of approach can be changed by establishing additional firing points. So far as the terrain is concerned, there is no restriction on the location or number of such firing points that could be used. It will be noted from the sketch that both course *A* and course *B* can be used simultaneously, as well as having several fire units on each course at the same time.

Protection is given the target detail at the starting points by stone walls lined with sand bags. Note in figure 6 the "Chinese Gate" type of detached wall, for protection from adjacent firing points, of the opening in the wall where the target emerges.

Several organizations from the Ft. Bliss Antiaircraft Training Center have fired on this range at fast-moving simulated mechanized targets. Results have been most encouraging. It is not claimed that this range offers the ultimate for such type of target practice, but it does provide very realistic targets with a minimum of practical disadvantage in operation. Where natural terrain favors such an installation, it offers many obvious advantages over the standard truck-towed type of anti-mechanized target.

The 68th Hits the Road

By Captain Yale H. Wolfe, Coast Artillery Corps

For ninety minutes on the morning of last July 16, an unbroken line of Army trucks filed through and out of Camp Edwards, Massachusetts. The command of Colonel Charles B. Meyer, it bore the 68th Coast Artillery (AA) on an independent training convoy which found its proving grounds on 1,653 miles of highways in nine states and the District of Columbia during the ensuing two weeks.

In adherence to a well-formulated schedule, the regiment, manned by seventy-two officers and 1,255 enlisted men, began to move away from its home station promptly at 9:00 A.M. The objective—to be reached eight days later—was Fort Eustis, Virginia, where 370 new men were to be acquired.

Divided into nine days of travel, plus five full recreational holidays, the trip quickly resolved itself into one of continuing wonderment and enjoyment; priceless convoy training was absorbed with noticeable ease as the huge motorcade turned immediately north, then rolled south for a solid week.

Appearing in complete convoy column for the first time in several months, the regiment's 373 vehicles had for their destination that first day, Hartford, Connecticut. Midway on the first leg of 146 miles, lunch was served during an hour-long halt, outside Providence, Rhode Island. Directly the individual battery trucks had completed alignment, hot meals, prepared en route in gasoline field ranges, were served.

Activity in the area was continuous, for even while the last regimental vehicles were pulling in for lunch, the first arrivals were resuming the trek to Hartford. The feature obtained during later meal stops.

Nightfall of the first day found the regiment encamped in beautiful Colt Park, not far from the center of Hartford. Officers and men slept on portable canvas cots that night; it was not until we reached Pennsylvania that tents were pitched. And during the overnight bivouac in Hartford, several thousand citizens ringed the park to watch the 68th in camp. Their enthusiasm did not wane, for many reappeared at dawn the next morning in time to see the regiment break camp. Similar inspiring public demonstrations greeted the 68th as each new mile was covered.

The second leg of the convoy took the regiment 128 miles to West Point.

Upon our arrival, the entire cadet personnel lined Thayer Road as the motorcade passed in review on its way to the parking area adjacent to the South Gate on the cavalry plain. Immediately after parking, the regiment marched on foot to the parade ground where it stood enthralled by the masterful precision of the cadets on parade.

After supper that evening, a complete antiaircraft demonstration was staged: searchlight platoons, commanded by Captain Francis McGoldrick, were placed in tactical positions on both sides of the Hudson, some beyond the Storm King Mountain; 3-inch antiaircraft guns and .50 caliber machine guns were set up in West Point itself; communications lines were installed; medical stations were placed in operation. With darkness, "enemy" planes brought each unit into action to successfully defend the academy from a simulated air attack.

Virtually every cadet turned out to watch the thrilling show. Groups of them toured the many battle stations to examine weapons and instruments and to question the crews prior to the mimic air raid.

Friday the regiment re-formed its twenty-mile open column and resumed the march to cover 129 miles to Allentown, Pennsylvania, where a week-end holiday was enjoyed.

A second problem of defense, requiring the active coöperation of the people of Allentown, was met there that night. A complete blackout of the city and the airport was ordered after the regiment had set up its battle and camp equipment under the eyes of interested thousands. The defense continued during Saturday's forenoon and was declared to have successfully repelled both night and day "raids."

On Saturday afternoon and all day Sunday the troops tasted the unstinted hospitality of Allentown—the home of Colonel Meyer, and the scene of one of his earlier commands. Sunday afternoon the regiment paraded in review before 20,000 persons who lined the airport's main runway. Our departure Monday morning was made with regret, but with the memory of the most complete pleasure encountered throughout the trip.

En route to Hagerstown, Maryland, that day, staff, battalion and battery officers temporarily abandoned the convoy to stop in Harrisburg, Pennsylvania, and plot the defense of four bridges spanning the Susquehanna River. In theory, gun, automatic weapons, and searchlight batteries were deployed in the area; and facilities for ammunition, communications and supplies were installed to provide for a prolonged defense of the vital zone.

At Hagerstown Monday night, the regiment remained only long enough for sleep preparatory to experiencing its first night march. Rising shortly after midnight, the men set out at 2:00 A.M. under near-

"Business as usual" —Picture by Allentown *Call-Chronicle*

wartime conditions to tour 265 miles to Richmond, Virginia.

Beginning the second week of the trip, the regiment left Richmond on Wednesday, the 23d, for Fort Eustis. This shortest hop, 72 miles was broken in historic Williamsburg, where, after lunch, men were permitted to visit the restored colonial town. Late afternoon saw the regiment arrive at the trip's half-way mark—Fort Eustis—and the men slept in barracks that, and the next night.

In Fort Eustis another mission of the trip was accomplished as 370 new members were received into the regiment; their absorption occupied the battery and personnel organizations throughout the stop there. At the same time, each regimental vehicle was inspected, reconditioned and lubricated to assure performances on our return equalling the high standards maintained during the outgoing march.

On the afternoon prior to resumption of the trip, the "veteran" members of the 68th marched in a retreat parade while the new men reviewed their new regiment with visible pride.

Heading north the next morning, the column traversed the best highways found during the whole two weeks, covering 180 miles to arrive in Washington, D. C., late in the afternoon. Guns and searchlights were emplaced there as exhibits for those who visited us during our week-end stop.

Except for guards and guides, and overnights, the camp was virtually deserted as men flocked to the Capital to visit its countless points of interest.

At 3 o'clock Monday morning the column rumbled through Washington on its way to the Gettysburg National Park, and to Allentown again.

Shortly before 7:00 A.M., having come 82 miles, the regiment halted for six hours in Pitzer's Woods on the hallowed Civil War battleground. After breakfast and refueling, the men participated in a brief memorial ceremony highlighted by the reading of Lincoln's Gettysburg Address by Major Thomas L. Waters, commander of the First Battalion. During the remainder of the forenoon, the majority of the personnel occupied themselves in visiting the history-laden battle scenes and monuments.

In the meantime, staff, battalion and battery officers were engaged in meeting the theoretical defense problem presented by an air attack upon "important airplane plants assumed to be in operation within a 3,000-yard radius of the city of Gettysburg."

Solution of the paper problem was made only after extensive reconnaissance of the area involved; gun,

automatic weapons, searchlight and supply positions were selected, as were command posts and medical stations. Again the competent concentration of potential fire was declared capable of fending off the "enemy" air force.

Regaining the highway shortly after noon, the march continued 130 miles into friendly Allentown. We departed the next night, Tuesday, the 29th, on a forced march of 360 miles back to Camp Edwards.

The last leg of the trip began at 8:30 P.M.; a stop was made in Union, New Jersey, at midnight for coffee and doughnuts. The column re-formed almost immediately and within a short time we were coursing over the noted highways which cut north of New York City—the George Washington Bridge, the Cross County Parkway, the Hutchinson River Parkway—and onto the magnificent Merritt Parkway in Connecticut.

Arriving in New Haven, Connecticut, just before dawn, the regiment relaxed during a four-hour rest and breakfast halt. By the time the trip was resumed, rain had started to fall, making for extremely adverse traveling conditions throughout the remainder of the journey. But the experience and training gained through the preceding days became evident when that leg proved itself most effectively completed.

We arrived back in Camp Edwards at 7:00 P.M., Wednesday, the 30th.

* * *

On each day of travel, M.P. details of 50 men in charge of a Provost Marshal preceded the main body of the regiment by an hour; riding in bantam reconnaissance cars, they were posted at busy city and town intersections, and at route junctions, to expedite movement of the column.

Parking the regiment presented a formidable problem in itself, for a minimum area of 2,500 square yards was required. Inasmuch as no prior reconnaissance was made, it became the duty of each day's Provost Marshal to select camp, as well as meal, sites.

For country travel, we moved in open column which extended the line of march over 20 miles; through cities and towns the line was drawn to five miles; and at roadside halts it demanded two miles for closed parking.

Vehicular accidents were considered held at a minimum, and in the cases of motor failures the regimental Motor Transportation Office functioned admirably in completing repairs so speedily that no lasting disruption of the convoy order occurred.

Local and state police forces everywhere rendered invaluable assistance in placing escorts at our disposal.

In every headquarters there is a constant tendency to multiply personnel, expand the functions of staff administration, and accumulate records and office equipment. *The commander must avoid this expansion.* He must organize his headquarters so as to maintain its readiness for prompt movement.—*Field Service Regulations.*

Anti-Mechanized Sights for the 3-inch AA Gun

By Captain George R. Ferren, Coast Artillery Corps

In preparation for the summer maneuvers in Louisiana, the 1st Battalion of the 211th CA (AA) improvised suitable sights to adapt the 3-inch AA gun for use against armored vehicles.

The resulting design was an attempt to incorporate the following basic characteristics:

(1) The sights must allow tracking of fast moving vehicles in azimuth with proper lead.

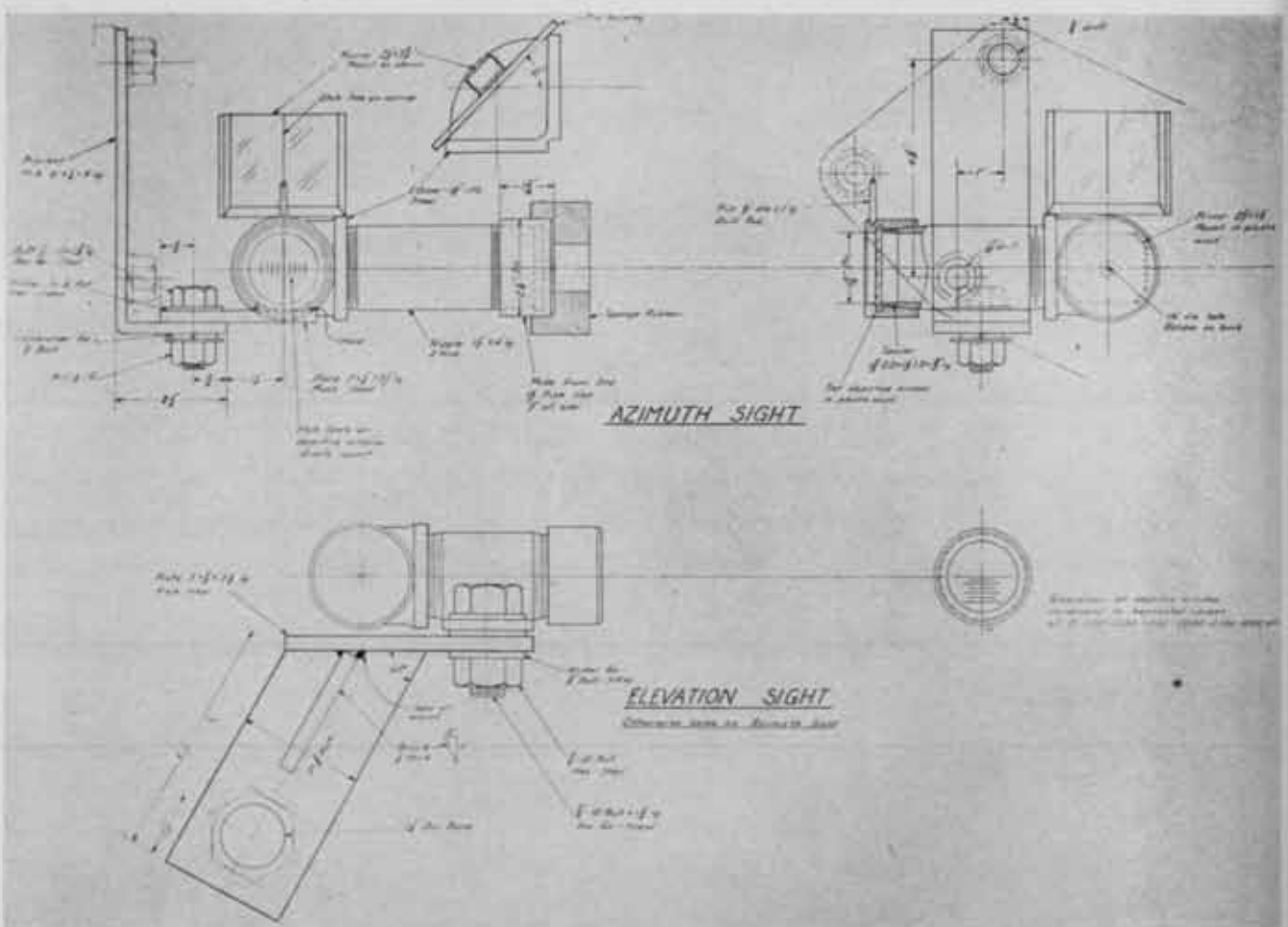
(2) The sights must allow tracking in elevation, making provision for difference in elevation of target and gun, and also for a range Gun-Target.

(3) Machining and fabricating operations must be simplified because of equipment available. (This consisted of a bench lathe, drill press and gas cutting and welding equipment.)

(4) The material used must be easily available and inexpensive. The actual construction of the sights can best be seen from the drawing. The basic elements of both azimuth and elevation sights are a 1½-inch steel 90 degree pipe elbow with a small mirror mounted inside at 45 degrees to the axes, two 4-inch nipples and two pipe caps to close the ends. These pipe caps were turned down on the outside diameter to improve the appearance. The objective caps were bored out and a circular glass window embedded in plastic wood. A .060" hole was drilled in the center of the eyepiece caps.

These sights were mounted on fabricated brackets designed to allow adjustment in the vertical and horizontal planes. The azimuth sight is attached to the equilibrator temperature control bracket. The eleva-

EDITOR'S NOTE: Standard antimechanized sights for 3-inch and 90-mm. guns will be issued in the very near future. However, this article indicates that ingenuity is still important in training, and that instruction need not be delayed due to lack of standard matériel.



tion sight is mounted on the extension of the right trunnion.

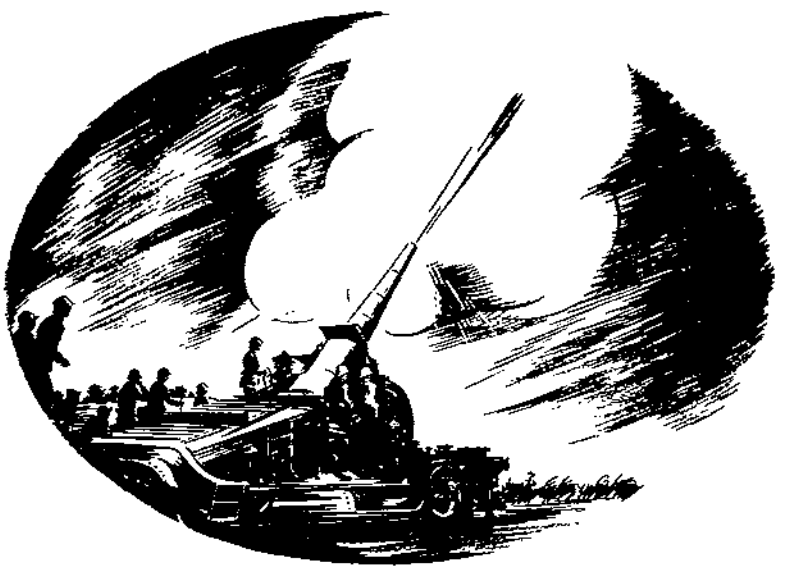
The objective window of the azimuth sight is etched with a vertical line through the center and with short vertical lines spaced ten mils apart on each side of the center. It will be noticed that a target traveling Left to Right appears in the sight to be traveling Right to Left In practice this reversal of direction causes no confusion and the azimuth tracker had no difficulty in following the target and allowing the desired lead by holding the target on the proper mark with the target moving toward the center line. An auxiliary pick up mirror was added to the azimuth sight to assist the azimuth tracker in finding the target.

The objective window of the elevation sight is etched with a line through the center and with shorter lines below the center line corresponding to horizontal ranges in 500-yard increments from 500 to 3,000 yards. If the gun is elevated so that the center horizontal line is at the base of the target, the bore of the gun will be parallel to the line of position. To apply the superelevation corresponding to the range Gun-Target, the gun is elevated until the base of the target is on the proper range line of the sight. Since there are no tables for use in horizontal fire giving superelevation for horizontal ranges, the spacing of the range lines was determined as follows. It is assumed that within reasonable limits the trajectory is rigid. Therefor, from the table of trajectory data for 100 mils, values of R and ϕ (QE-ε) were taken and plotted. (At this elevation R and D are nearly equal.) From the plot of ϕ against R, the superelevation for the ranges 500 to 3,000 yards was determined.

Since there is no percussion element in the fuses for ammunition now issued to the antiaircraft gun batteries, an auxiliary scale, graduated in yards range, was added to the fuse setter for use in conjunction with the antimechanized sights. It is felt that the fuse should be cut to the gun target range to assist in range adjustment and, as a safety precaution, to insure that the projectile will burst.

The sights are left in position at all times and do not interfere with the emplacing of the gun or its normal use as an AA Gun. To change to antimechanized fire the trackers merely stop matching pointers and use the sights. The twelve guns of the battalion have had the sights in place for seven weeks, including two weeks of maneuvers, and no trouble with them has been experienced.

The cost of constructing the sights will vary with local conditions. In East Texas the cost per pair was $4.37.



How it feels to be a GENERAL

By Lieutenant General Charles E. Kilbourne

To begin with, let me assure my readers that the feelings of a general officer are not indicated by that raised chin, that little tendency to hauteur evidenced by the slightly imperious vertical line between the brows, that somewhat detached Napoleonic coldness of eye. No, friends, that look of an eagle so common to the photographs of generals, and carried by some even into daily life, is usually pure camouflage. Most generals know that it is more important to deliver the goods than it is to look the part. And those who fail to appreciate this fundamental fact during these trying days will soon lose the chance to do either.

Getting to be a general is the second-best part of it. Only one other military thrill can quite equal the one that comes when the Old Man tells you that on your current efficiency report he has recommended you for one-star promotion. You try to be modest and assure him that though you appreciate it very highly, you feel that there must be many other colonels whose qualities should have commended them before you. In your heart, however, you know that his choice is not such a bad one—that he could, in fact, have done considerably worse.

You let it drop either casually or "in strict confidence" to a few friends that the recommendation has been made—that of course you "expect nothing to come of it, but it is a fine thing to have on one's record," and so on. In a few days you notice a slight but pleasing change in the attitude of those with whom you are serving. Nothing marked, but a little greater alertness in rendering military courtesies, an increased deference and desire to please.

You are fortunate at this time if you chance to be very busy. Extreme industry will tide over that period in which the world news on the first page of the daily papers is subordinated to the Army orders in the next to the last column near the want ads. You awaken early and ask the adjutant at breakfast if anything important came in by telegraph overnight. About this time you also find yourself a trifle impatient of administrative duties, and are inclined to settle matters promptly and on lines of broad policy. You don't consider any more that your decision may result unfavorably to the commander of the service battery who has had a slight bluff on you up to date because of his intimate knowledge of tables of allowances.

This period passes, and you begin to appreciate the old saw about hope deferred. You regret that you wrote home of your new expectations. One list is published, but you are not on it. A second comes out, containing the names of some of your juniors. You write them warm notes of congratulation. But you are beginning to *wonder why*.

Then, shortly after you have secured a pair of embroidered eagles and have had them firmly sewed on your shoulder straps just to prove to your comrades that you expect nothing, and incidentally to copper your own hopes, you are called to the phone and congratulated from headquarters on your name's having been sent to the Senate.

You make a trip to the nearest city, avoiding company, and purchase a new field cap with the gold piping of a general officer. You buy two sets of stars for your blouses. That night in the privacy of your quarters, with door locked, curtains drawn and all lights on, you put on your future costume. After examining your reflection in the mirror you decide to have your picture taken merely to please the family as soon as you can locate a good photographer.

A few days later comes the notice of your confirmation and with it the blanks for the oath of office. This is sobering. You lose the personal and private aspect of the case in the greater responsibilities you are about to assume.

A general is not encouraged to acquire ideas—he is expected to have them. He must not only know orders, but must analyze them and see that they are carried out by those he commands. Relieved from practically all administrative duties, he has time and freedom to think ahead and plan. If he belongs to a square division, he must make his brigade fill that place in the division which the division commander desires it to fill. He must neglect no element of his command, encouraging those of progressive disposition, instructing and—if necessary—driving those of less energy or ability. He must avoid, except by suggestion and advice, interference with the internal administration and discipline of any unit, but he must know the exact status of both. In brief he must forge a homogeneous machine capable of meeting the demands of the higher commander.

The esprit of a large unit depends almost entirely upon the commander. He cannot neglect the human

element. Though he must know the state of mind and spirit of the rank and lower file he must never take action which would cause these to make unfavorable comparisons between the general and the regimental or battalion commander. He must see that the good ideas of one officer are made known to others, so that the best thought of his outfit is available to increase its efficiency throughout.

He must keep closely in touch with the health of his troops, and the state of supply. Though he is not responsible for requisitions, he becomes the representative of his regimental and battalion commanders when the supply service does not furnish required articles, and must take upon himself the burden of unpleasant controversies. He must see to it that his troops get a square deal, standing between his commanders and unjust criticisms while insisting on the maximum compliance with regulations that conditions permit. He cannot pass the buck—he's a dead one if he tries to. A failure in any element of his command is his own failure, for he establishes the standard and it is his duty to recommend the relief of any officer who will not or cannot meet requirements.

A good many of these thoughts come to you as you take your oath of office. You don't think ahead quite so much about your duties in action. For you know these will be comparatively simple if you have built the machine right, have created the esprit you know it is your first duty to create, and have won the respect and confidence of your men. All of which is a very big order to fill when you take up a new and large command and you begin to forget yourself, your shoulders cease to tickle, and you think of the job.

But now you must select your aides. It is a rare occasion when a number of young lieutenants—clean-skinned, hair precisely parted and plastered down, blouses bi-swinged neatly, and held painfully tight by a twenty-dollar belt, are not available and avid for the job. By the same token some of these young gentlemen will die gallantly in the mud at the head of platoons, inconceivably clean to the end. But in actual wartime it is unsafe to select such a one unless he has already proved himself in action. A general officer needs assistants who command confidence, and youngsters of the type formerly considered most fitted to be aides are looked on with suspicion by the two-fisted men on the front. Your aide cannot influence such men or convince them that he speaks in your name unless they know that he is as hard a fighter as he is trim a dresser.

During the first World War I took my aides from the line. The first who reported wore an American-cut uniform (it looked it), the tails of which didn't quite cover the darns (man-made) in the seat of his breeches. His boots were a marvel of efficiency and clumsiness. He duded up a bit later, and so did his sidekick who joined soon after, but neither of them ever failed to make a favorable impression on frontline troops. But not because of beauty, either natural or selfmade.

Being a general is not hard work—in fact, you find that many of the tasks that formerly took hours of effort are now accomplished by the expression of a wish. Somebody else does the work. But you must think, you must plan, and you must decide and decide right. If you cannot do this you fail, and your failure may mean slaughter to the men you command and disaster instead of victory for your command. You will be awake many hours when even colonels (the next most wakeful grade) are asleep. And you cannot let sleeplessness make you into a grouch or shake your optimism. Cheerfulness and an air of confidence are essential attributes of a successful commander.

But there are compensations. You may find your car more comfortable than the one you used as a colonel, and the star on the bumper passes you anywhere. You have greater freedom in every way.

And then, one fine day the war is over. And, when someone protests the number of stars seen around Washington, the War Department will take the action we all know is inevitable.

As one victim remarked after the last war, it then becomes open season for generals. In 1919 as we came across the ocean and landed in the old country, we were met like a covey of duck alighting near a concealed hunter. Some of us fell at the first barrel, some made a short flight only to be brought down by the second. That particular shotgun is a long-range weapon and none feels secure. Fortunately, no discredit attached—the temporary colonels, lieutenant colonels, and, in some cases, majors, to whom former brigadiers had to give precedence, knew that we had made good or would never have lasted to get home. This will hold true again, for their own fate looms ahead of all temporary ranks. It is true after all wars and in all armies.

For this reason the writer is thoroughly in favor of the wearing of civilian clothing by officers on duty in cities after a war. An enlisted man is better off in one way than a demoted general, for he knows he should salute all officers, while the busted general is kept guessing until he is at short range.

There will be a bit of pathos in the situation. The work you have done, the place you have filled, compared with the task you can be given with your reduced rank in time of peace, tends to depress you a little and to take from you that very spirit which made you valuable enough to be given great responsibilities in time of stress. Some kind friends will continue to address your mail as "General," and it is forwarded to you with the "General" crossed out and your present rank written on—neither friends nor the clerks at the APO will permit you to forget.

While admiring General Sherman as a man, a soldier and a writer, you cannot help feeling that in one way Mr. Dooley knew more about war. Sherman said, "War is hell." The discerning Mr. Dooley remarked, "War is hell, after it's over."

The Viewpoint Is Wide Open

By Major C.

After the first sudden glow of surprise passed upon receiving my orders for the Special Course at the Command and General Staff School, Fort Leavenworth, I made a quick resolve to try and not get in any hot water this time at a service school. Yes, I had been at schools before, and I was fully aware (so I thought) of how service schools frowned upon any and all ideas advanced by students that were contrary to established doctrine and tactical theory taught in such schools.

This time, I would accept what was taught, and if some points struck me as being too conservative, or outmoded, or did not happen to agree with what I thought was a swell idea, I would keep quiet about it.

No, I wouldn't stick my neck out this time.

Which resolve was based upon the fact that during my early days of military training when I was quite cuttingly asked "if I wanted to be different," when I objected to several points put forward by my instructor.

Nor, could I ever forget the time about five years ago when our Army was at a low ebb in man power and modern equipment, and Europe was quiescent, how several of us were treated at some other service school. It had to do with our ideas on the use of antiaircraft guns being used as antitank weapons.

We were instructed not to mention that point any more, it was against doctrine, and that was that.

Which experience was equalled by an acquaintance of mine who fell into the error of objecting to the "School Solution." One could offer another solution, stated that instructor, but the mark would probably be a great big "U."

That was my frame of mind when I arrived at Fort Leavenworth.

The first day found me wondering if my ideas were erroneous.

By the end of the first week, I made mental apologies.

Something revolutionary had happened. In many ways, on many points.

Perhaps I should explain the course, the methods of teaching, the various viewpoints and methods of approach, as well as the constant desire on the part of the instructors to have the students state their own ideas, and experiences.

As is quite common knowledge, the course is rather a specialized one for staff officers, although the command and tactical phase is not overlooked. Students are given specialized training in their own general staff section, as well as general instruction upon tactics and the rest of the general staff sections. This is all compressed into nine weeks.

There are many lectures known as "conferences," especially during the first part of the course. However, it was in these conferences that I received my first shock. Not only did instructors occasionally doubt certain points in their lectures which they stated was the present accepted doctrine, but students were asked for their own ideas.

In days gone by, if some student offered contrary views to the then accepted teachings he was in danger of being not only corrected by the instructor, but open to the snickers of his classmates. Nothing like this happened, unless the student was openly caught napping. No student was ever informed that his views were wrong. The instructor merely made his customary remark of "thank you." Other students could take the floor as they desired, or saw fit.

Because of the intense, compressed nature of the course, time for discussion was necessarily limited, but this fact was never used as a gag. The instructor usually suggested that the class period was over, and maybe some of the students wanted to visit the coffee shop, but all interested ones were invited to stay behind and argue, or to continue in the instructor's office later. Plenty of students made use of this opportunity.

In order to illustrate how staffs might have to function in the field during a fast changing situation, staff demonstrations were put on as playlets by the instructors . . . something like mock trials in civilian law universities.

Several of us were thoroughly prepared for a cut and dried affair, quite old style "military" in nature.

I got quite a jolt, especially as I had been in the last two big maneuvers, and thought I knew how things went on in the field as far as informality, time for the necessities of life, and an occasional joke when things were slack were concerned.

So, it was in the demonstrations. We saw the "Old Man" receiving his orders, going out on reconnaissances after issuing his directives, receiving his last moment staff estimates and recommendations, and issuing his final orders, and then sitting down for a moment of relaxation to listen to a joke when he had the time. We also heard him bawl out a member of his staff who let something slip by him when said staff member had passed the buck when he shouldn't have.

Then, we were issued our own "free" map maneuvers where we had a chance to do our own stuff . . . and learn how vital it was to be a member of a team, and not be blinded by our own particular job and acting as a lone wolf.

Just during, and for several years after World War I when I was a tin school cadet, reservist, and in the Regular Army, I had witnessed plenty of times the admiration of things foreign by many officers and soldiers.

I was wondering what special fad, foreign one of course, would be thrown at us in this school. Did I say one? I was prepared for several. True, before going to Leavenworth I realized that the various changes in our uniforms were definitely American and we weren't aping European ones as we had done for a century previously. But, uniforms weren't tactics and foreign military phrases.

For years, I had heard how so and so glittered at the battle of Umpah in Europe. Of course the battle was lost, but the few who survived came out the line still glittering. How European Guard outfits had snappy drill, and uniforms, and how we Americans looked sloppy. The only island of American troop psychology that stands out in my mind during this period was the order of one of my old C.O's.

This occurred during the 1929 Mexican revolution when several of our units were patrolling the Border.

"No one will shave until I do. Neckties will be discarded. Officers will wear red bandanna handkerchiefs like me. The men may if they care to buy them, and aren't broke."

Yesterday, I heard that that C.O. was still spoken of in that regiment.

It suddenly dawned upon me that we were being just plain Americans and weren't blindly copying a lot that was foreign just because it was foreign.

Not that the lessons of the present war were being overlooked. Far from it. Only, it was a study to arrive at essentials and not folderols.

If we studied the tactics of the "Blitzkrieg," we were informed that it was invented in this school in 1932. If we were studying the supply problems of huge armies in the present European field, we were also issued Sherman's supply estimate and plans for his "March to the Sea."

If we were studying the tactics of the individual soldier and how he must be reliable and go at it on his own, we were reminded that this type of individuality was an old American trait.

If the brilliant tactics of some general were mentioned, we were asked to remember Stonewall Jackson, and how he alone was worth almost an army to the Confederacy.

If we gasped with amazement at the lengthy marches *on foot* in this present war, we were again reminded of Jackson's marches.

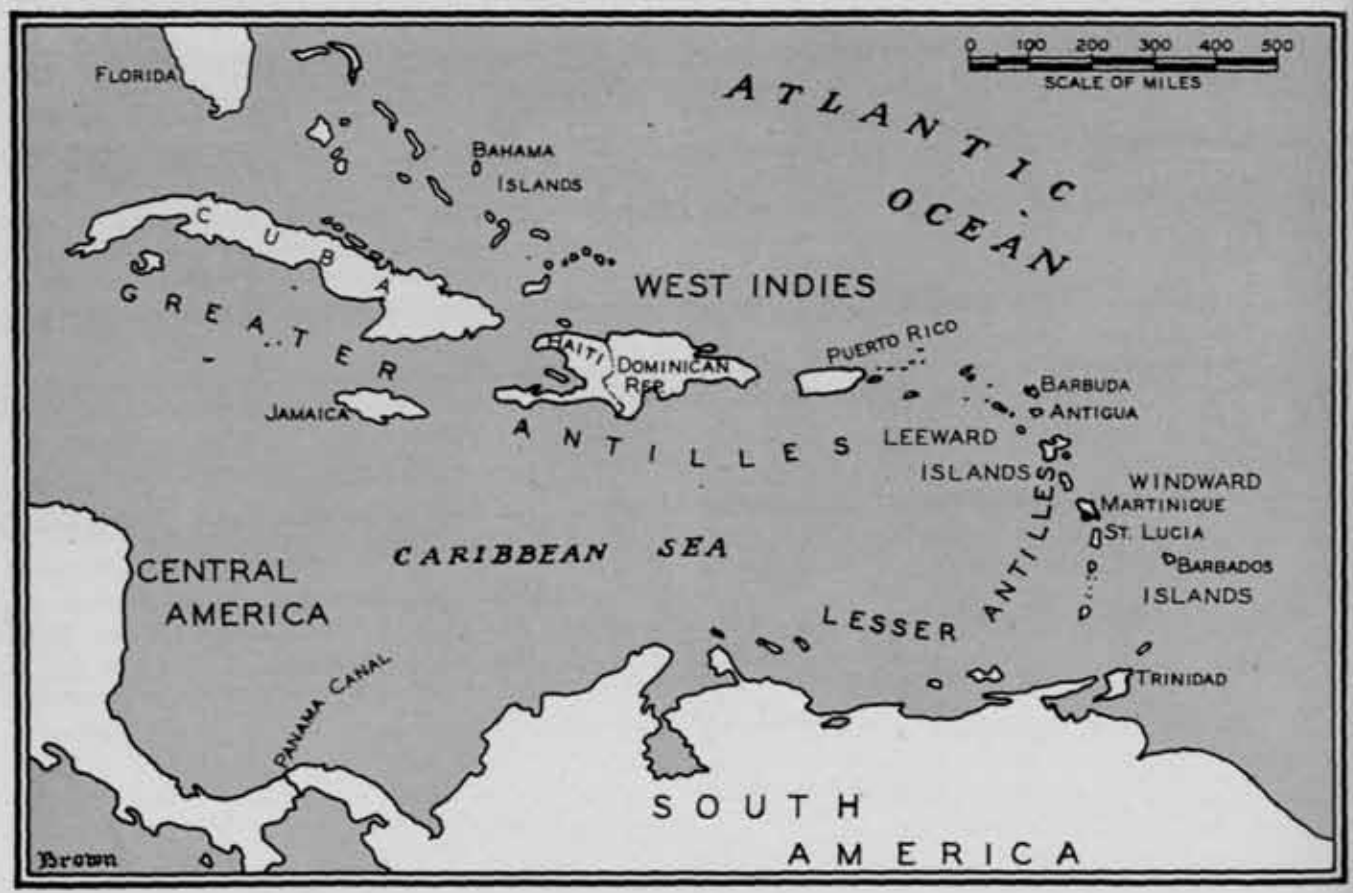
If we hear of night attacks, now, how about Washington at Trenton?

In 1921 I was yelled at to *"Depechez vous,"* and got bawled out for ignoring that command. Last year, in the field my "Old Man" thought I wasn't hurrying fast enough, and he yelled (deleting the expletives), "Git going." I got.

This school reminds me forcefully of those two experiences and how we have changed for the better.

War is a trade for the ignorant and a science for the expert.—CHEVALIER FOLLARD.

Around The Bases



THE WEST INDIES

This essay is to be devoted to two lyrically-named bases in the Caribbean Sea: The Island of St. Lucia, and the Island of Antigua. The former is a "Windward" island; the latter a "Leeward." This brings me to a brief digression in the interests of clarification of West Indian nomenclature.

The trouble with West Indian nomenclature is that it's too extensive to be grasped offhand. My system, which I admit sometimes fails to work, is to regard those islands just as you regard a table of organization. Thus, the West Indian islands are composed of two great groups: the Greater Antilles and the Lesser Antilles. The Lesser Antilles (with which we are concerned at the moment) are themselves organized into two other groups—the Windward Islands and the Leeward Islands. It is not clear to me just what wind it is that these islands are to the windward and leeward of, but the point hasn't seemed important enough to justify much research. In any event, altogether there are about a dozen of the islands, strung out like a line of skirmishers across the eastern end of the Caribbean Sea. The northern half of this line of skirmishers forms the Leeward Group, the southern half the Windward Group. Consider now St. Lucia, in the Windward Group.

St. Lucia

St. Lucia is a pocket edition of Jamaica; that is, it is a mass of mountains rising precipitously from the sea to elevations of the order of 2,000 feet. The mountain peaks normally are wreathed with clouds—a sight that moves the travel-narrators to break out their Sunday adjectives. One favorite way of reacting to the lovely sight is to say that here is another Emerald of the Caribbean. In truth many of the islands we have met have been called names that nice, or nicer, and with far less reason.

This particular emerald is about twenty-seven miles

long and about fourteen miles wide. This gives the island an area of about 233 square miles. St. Lucia is a compact little parcel with a regular coastline. Twenty-five miles to the north, and visible on a clear day, is our island's famous neighbor, Martinique.

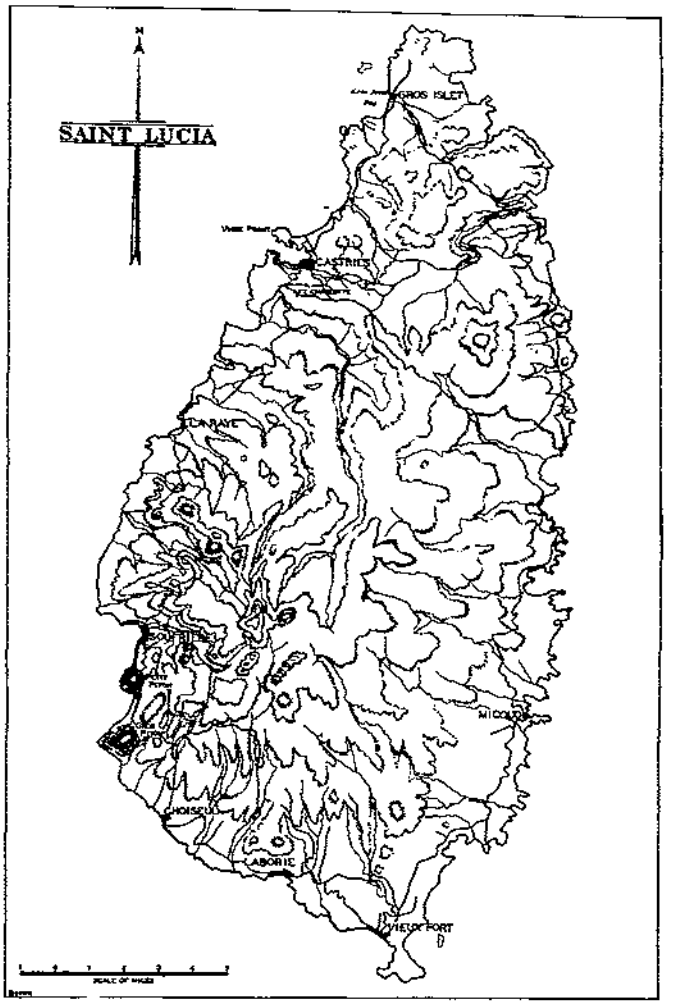
St. Lucia has a population of about 70,000, which figures out at a population density of about 300 per square mile, which is exceeded in the United States only by Rhode Island but is well below the West Indian norm. The population is predominantly Negro, there being only a few hundred whites and French creoles, and fewer "orientals" than my researches on other islands would have led me to expect.

In considering the people of St. Lucia, one is confronted with the fact that this island is French, not English, in background and tradition. For example, the prevalent religion is Roman Catholicism; the natives affect French styles of dress, especially on gala occasions, and many of the natives speak provincial French. This French influence, of course, stems from the island's history. During the seventeenth and eighteenth centuries, it was an odd peace treaty in Europe that did not take St. Lucia away from France and give it to England, or vice versa. To pick up the story relatively late, consider the following: the British had the island in 1782, the French had it in 1783, the British had it in 1794, the slaves up and took it in 1796, but the British had it back in 1797, the French had it in 1802, and the British again in 1803. After 1803 the island stayed put under one flag until the destroyers-for-bases deal of 1940. Meanwhile, as far as the island's people are concerned, the French influences seem to have sunk in deeper than the British ones.

The island has a climate that is warm and damp and very even. Actually it's not as bad as that sounds, owing to the alleviating effects of "The Doctor." In West Indian parlance, "The Doctor" refers to the sea breezes which blow over the Caribbean Sea. The St. Lucian temperature averages about eighty degrees, without much fluctuation through the year or indeed through night and day. The rainfall is on the order of ninety inches per year, a figure comparable to that of the wettest parts of the United States.

The soil of the island is fertile—so fertile that making a simple living native-style is not much of a problem. As on most West Indian islands, sugar is the most important crop, but St. Lucia is not so dependent on the crop alone as are several others of the islands. The cane is grown chiefly on plantations or "estates" located along the valleys and on the few alluvial flats. There is a wage-hour law which guarantees the plantation workers something like twenty-seven cents for a nine-hour day. After sugar the most important St. Lucian crop is limes, exported chiefly in the form of juice. Then follow in order, coconuts (copra), bananas, cocoa. The exports go almost entirely to England and Canada.

While the island staples are thus being grown and



St. Lucia

exported, our attention may be turned to the less valuable but more spectacular fruits and vegetables that are to be found in the native markets. In the matter of tropical fruits St. Lucia is said to be tops among West Indian islands. In addition to bananas and limes there are such things as these—papayas, plantains, mangos, mamee apples, and a fruit called *guanabana* which is billed as making up effectively into an ice or drink. The guanabana is also called *soursop*, but not in this august series of essays.

St. Lucia operates on the British pound system of currency, but my informant tells me that one peculiarity of the West Indies (he's never been much of anywhere else) is that whether the official coin is called pound, peseta, or franc, the Dollar always gets a warm welcome and is spelled with a capital D. Prices are low as far as fruits-of-the-land are concerned; otherwise they are high. Of course there are a great many articles which are not to be had in those small islands at any price—sometimes including such items as your favorite make of toothbrush.

Among connoisseurs of the Caribbean, St. Lucia is indeed an emerald, an emerald which they frequent while leaving the more publicized places to the general run of tourists. One of the feature attractions is the

island's capital, the town of Castries. It has a population of about 9,000, and is the only town of any size on the island. It lies on the slopes leading up to the mountains, at the head of a land-locked harbor. The harbor is something out of the picture books, it's that beautiful. However, although beautiful and deep, the harbor is not large.

For many years, until 1905, the harbor at Castries served as a coaling station for the British fleet, and even now it serves in that capacity for many commercial ships. Incidentally, there are some elements of interest in the manner in which ship coaling is accomplished at Castries. The women there (and everywhere else in the West Indies) are great head-balancers. Here, they balance baskets full of coal, carrying them from the stock piles to the ships. In balancing their heavy loads while negotiating the narrow gangplanks, the women employ a rhythmic movement, swinging their hips like broken field runners.

Acceptable motor roads (250 miles of them) lead from Castries to all parts of the island. Everywhere the scenery brings out again the better adjectives of the travel narrators. Everywhere there are the mountains covered with luxuriant and brilliant vegetation: house-high ferns, immense bamboo trees, flamboyant trees, and so on. No doubt there are also the usual run of bugs and insects, but there are few if any snakes. The introduction of the mongoose, years ago, seems to have taken care of the snake problem which, with the *fer de lance,* once was serious.

Perhaps the most interesting part of the entire island is the area near Soufrière on the Western Coast. There, two spectacular peaks, a smouldering volcano, and several hot mineral springs all are to be found. The peaks are called the Petit Piton and Gros Piton, respectively. They rise like arrowheads from the sea to elevations of about 2,500 feet. The volcano, also called Soufrière, erupted a couple of hundred years ago. The mineral springs of course are alleged to have medicinal qualities designed to fit whatever ailment you may have.

When you get tired of seeing things in St. Lucia and want to begin doing something that's fun, the situation is not so good. There is some hunting, chiefly of birds in the valleys. Fishing has not been highly developed, but no doubt the possibilities are there. The regularity of the coastline does not make for good beaches, but the island has one beach that is a stand-out in any company. The connoisseurs call it the best in the Caribbean. The name is Vigie Beach, and it is located along the northern shore of the peninsula just across the harbor from Castries. Just back of the beach is a nine-hole golf course. Not far to the north is Gros Islet Bay, the location of the new naval base. Now that I think of it, all that sales talk about the beautiful scenery can be saved for a cold snowy day. During all the hot ones, you'll have a hard time getting me very far away from the vicinity of Vigie.

Antigua

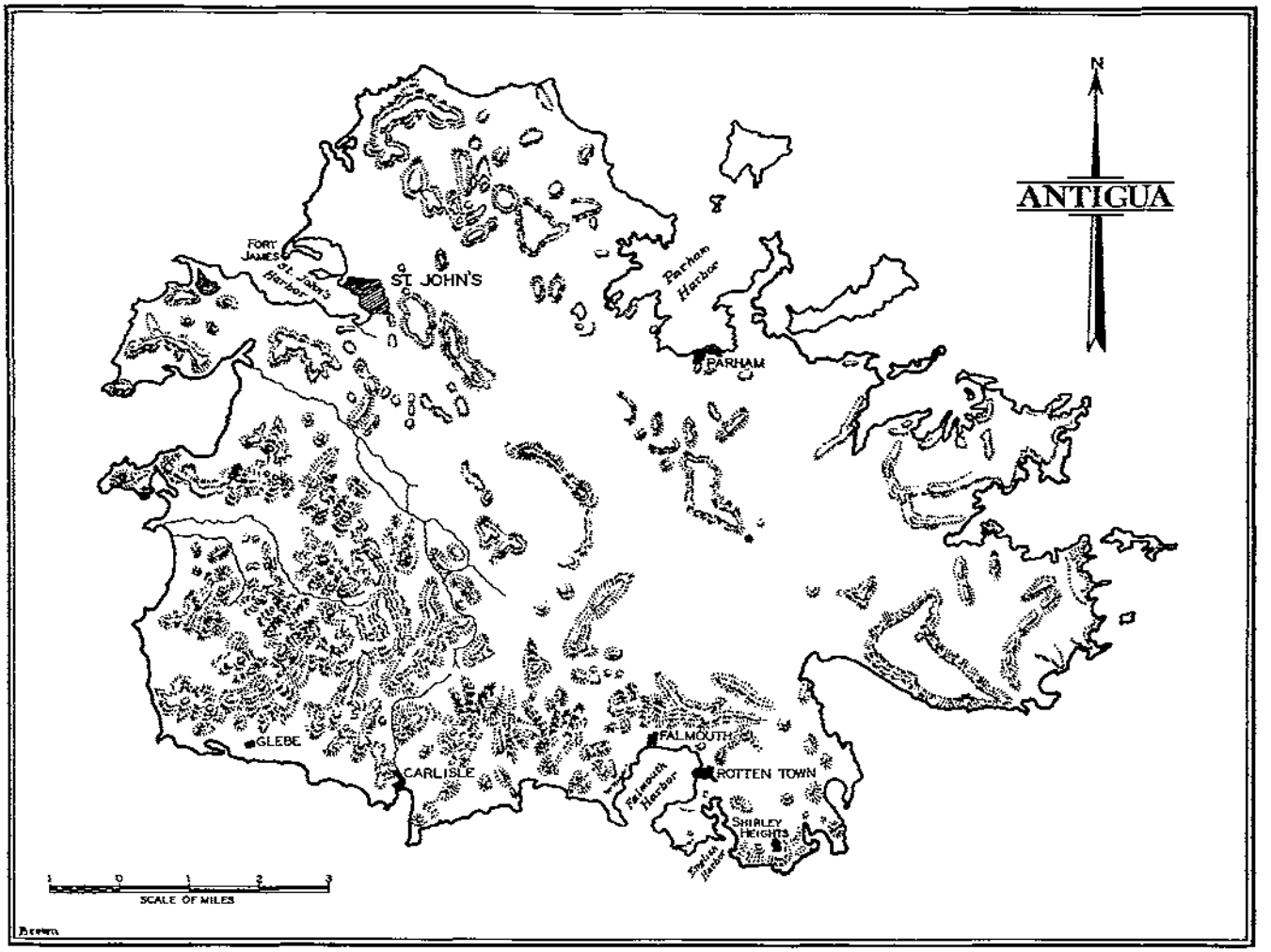
In considering the West Indian islands and especially those of the Windward and Leeward groups, there is a tendency to handle the matter by concluding that they all are peas from the same pod, and that one of them described is all of them described. I confess that if I had to write about each and every one of the islands, I would accept that conclusion and be done with the matter, but that would not alter the fact that each of them has its own peculiar characteristics. Fortunately, the peculiar characteristics of the island at hand (Antigua) contrast satisfactorily with those of the island just considered, so I proceed with my dissertation in the hard way.

Antigua is a drop-shaped island, with an area of about 108 square miles and a population of about 30,000 (this figure including the usual handful of whites). This makes Antigua about half as large as St. Lucia, both in area and in population. Thus the respective population densities are about the same and both of them are below the usual West Indian figures.

So far it has been pretty much a case of peas out of the same pod, but consider now the item of terrain. St. Lucia was a mass of mountains, luxuriantly wooded. Antigua is a low rough plateau, with hill masses here and there and with practically no forestation. The coastline of St. Lucia was regular and even. That of Antigua is rocky and broken with many indentations (including Parham Bay, on the north coast, where the new naval base will be located). St. Lucia was an emerald of breath-taking beauty, perhaps like a piece of the Alps or the Rockies. Antigua has no guide-book appelation—it is dull, perhaps like the sandhills of Nebraska.

For some reason not quite clear, but probably arising from the low relief, Antigua has less rainfall (forty-odd inches per year) than most neighboring islands. In addition the forty-odd inches often are badly distributed over the year and as a result droughts are not uncommon. The soil, however, is very fertile and produces such exotic-sounding items as the following: christophine, eddoes, tannia, shallots, sweet cassavas. My researches stopped just short of defining those items, but I did establish that they are important only as exhibits (color photographs) for travel stories, and as food for local consumption. The island's big crop is sugar, the making of which employs ninety per cent of the population. Antigua literally is a one-crop island.

This mention of Antigua's sugar-economy brings to point the island's dreary history. Here the pattern is much the same as for other West Indian islands, except that for some of them (but not for Antigua) the hard workings of Supply-and-Demand have been alleviated by the clink of the Tourist Dollar. Antigua's treeless acres show many evidences of abandoned farms and "estates." These are relics of the day when sugar (and rum and slaves) made the West Indian islands the



Antigua

most important articles in the entire New World (as witness also the perpetual French-British fight over ownership of St. Lucia). They are relics, too, of the day when the slaves were freed, and more significantly when Cuba entered the picture and began turning out ten times more sugar than the rest of the islands put together. The point is this: the islands such as Antigua have lost their economic importance, and as a corollary to that, the white man, in effect, has turned them back to the other races. That is, he was by way of turning them back when the consideration of *strategic* importance arose. Thus the islands which once were important because of sugar and rum, now are important because of *position*.

The more spectacular chapters of Antiguan history turn on the days when "English Harbor" on the southern coast was a naval depot for the British fleet. The harbor is not much used today, but it was an important base during the Napoleonic wars. The feature attraction is the old dock, with facilities for pulling and repairing the sailing ships of that time. The dock has been kept in fair repair, and while seeing it you also can see the usual come-alongs—beds-in-which-Nelson-slept and the like.

As a final trivia of history, let me record the fact that the people of Antigua, unlike those of St. Lucia, are English in background and tradition. It happens that Antigua never was under French rule for any important period.

The capital of Antigua and the seat of the government for the Leeward group of islands, is the town of St. John's on the western coast. St. John's has a population of about 8,000, making it by far the largest town on the island. It lies at the foot of a hill on a landlocked harbor which, from the standpoint of beauty, suffers little by comparison even with the harbor at Castries on St. Lucia. But where the harbor of Castries is deep but too small, the one at St. John's is large but too shallow. Nothing ever seems to come out exactly right in the West Indies.

The town of St. John's is said to "sparkle" with cleanliness. Pretty creole girls are said to be on hand at the docks to meet all new arrivals. Of course the girls have something to sell, in this instance strings of seashells. If seashells don't interest you maybe other things in the markets of St. John's will. You will find there all those exotic fruits, the names of which I've already listed; and you will find other products of the land: Carib baskets (they balance on the head) and pottery (made without benefit of the potter's wheel).

As has been indicated, Antigua is off the beaten track for tourists. Further evidence of that fact is offered by the listing of the island's hotels in the official West Indies Year Book. There are four hotels, all of them in or near St. John's. One of them appears to be modern and has twenty-two rooms ". . . each with its own balcony. . . ." The other three have a total of nineteen rooms among them. Rates at the modern hotel are listed as about $4.50 per day per person, including meals.

Antigua has a fair net of roadways. It appears that one might drive a car from St. John's to almost any general part of the island, but the island is essentially a bicycle country. The Year Book gives the automobile population at about 450 while the bicycle population is about 1,300.

Apparently there is at least one golf course on the island and at St. John's there are tennis courts. However, I conclude that the most satisfactory recreation on the island itself will be swimming. The rough coastline includes several good beaches, the best one being just across the harbor from St. John's at Fort James.

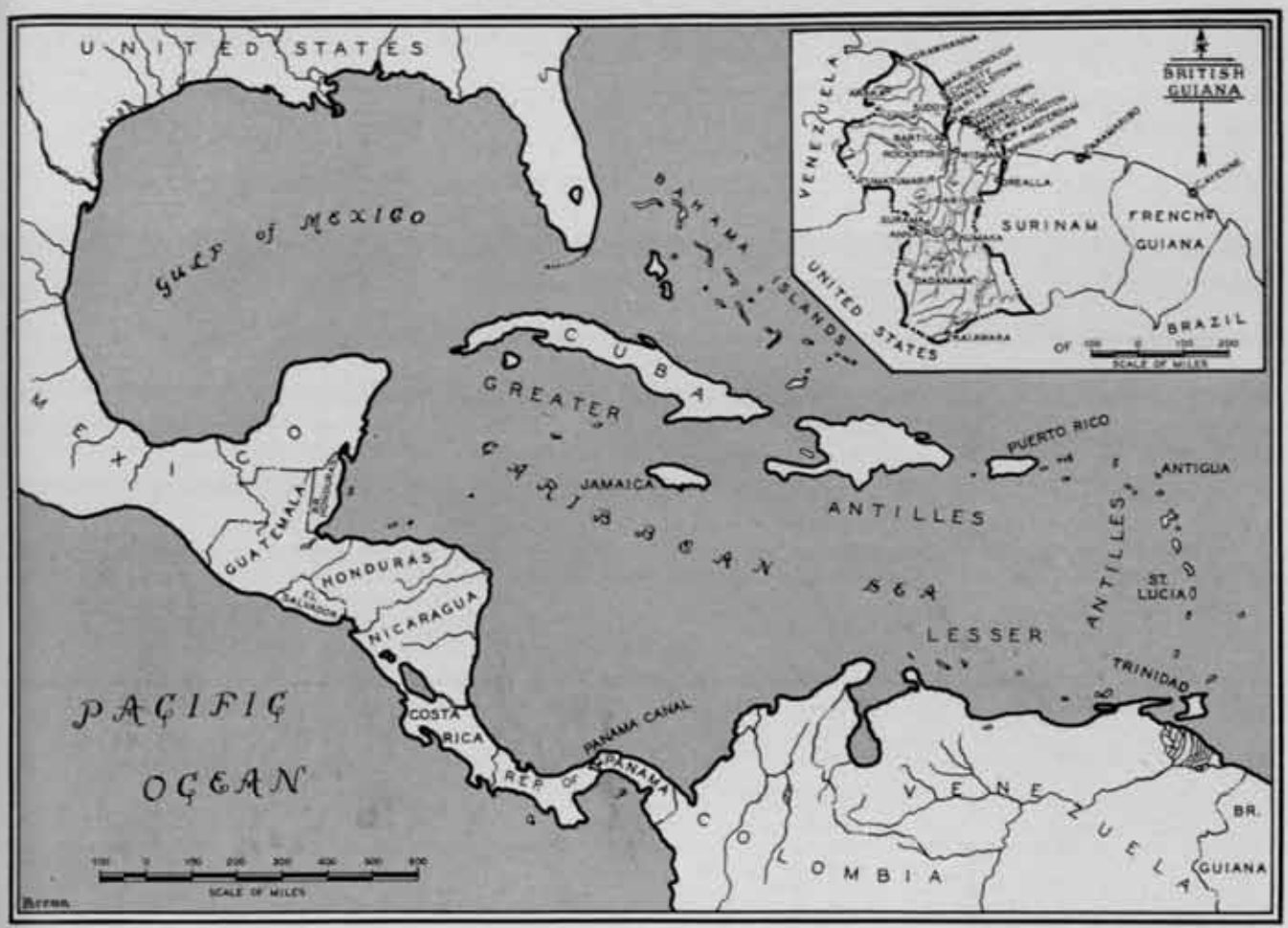
Speaking of sport and recreation, I take the opportunity to end this somewhat bearish account in a more bullish vein. You couldn't have known it, but all this time Antigua has had a "dependency," a little island by the name of Barbuda (not to be confused with Barbados, a Windward island). To meet Barbuda after having resigned yourself to Antigua is somewhat like learning at the last moment that sour-puss Minnie has a beautiful sister named Rosie. Barbuda is a low-lying corral island located about forty miles north of Antigua. It (Barbuda) is said to be nothing less than a sportsman's paradise. There is good hunting (including deer), good fishing, and good swimming. I don't know just how one goes about getting from Antigua to Barbuda and back, but as soon as I finish researching British Guiana I'm going to find out.

British Guiana

One of this department's well wishers has written the Editor asking if only those who have never been there are allowed to write about islands and bases, and wondering if he, since he has been to Trinidad, might not do a piece on it. The Editor has answered "yes" in the first instance and "no" in the second, and adds that experience has shown that anyone who has been to British Guiana (our subject for today) doesn't want to write about it or even think too much about it. So with Well-Wisher disposed of, and with yearbooks, encyclopedias, and travel propaganda at hand, let us proceed to British Guiana.

Let us drop in on our subject by air, on the theory that the way to learn to swim is to be dropped in the middle of the creek. We take off this early morning from Trindad, where we have been searching since the August number for a cool breeze and head southeast. We cross a few miles of blue water and then see it turn a brownish yellow. This, we know, is the doing of the Orinoco River, which empties into the ocean opposite Trindad, and which we smelled but did not see on our visit to the latter island. Seeing the yellow water is possibly even a little less satisfactory than smelling it. We continue to see it for a hundred miles or more (it's the world's biggest mud puddle), and as it finally fades, we approach the shore. The shore turns out to be a blackish, bumpy beach, desolately marked by dead and twisted trees. There is a hundred miles or so of this lifeless beach before civilization again appears—appears in the form of smokestacks, marking the presence of sugar-refining mills. A few minutes later we turn up and set down on a stagnant estuary. That would be the mouth of the Demerara River. Off to the left to the east beyond a line of muddy dikes is a town on stilts. That would be Georgetown, the capital of our subject, about which more later.

The elementary geography of today's situation is as follows: the area known generically as "Guiana" lies on the northern coast of South America on the shoulder of the "Bulge," between the Orinoco and Amazon Rivers. There is no precise defining the boundaries of the area as a whole for there is a Venezuelan Guiana which stretches indefinitely into Venezuela to the west, and a Brazilian Guiana which stretches indefinitely into Brazil to the south. However, the three European Guianas—British, Dutch, and French—are shown on any map. The strategic significance of the general area is also obvious from a glance at the map: a base in British Guiana anchors the southern wing of our Caribbean defense system and forms a link between that system and any defenses down on the Bulge. Guiana was one of the many places which Columbus saw but did not set foot upon (a fact which I quote with no ulterior motives whatever). The Dutch were the first



A 32-man barracks of the type to be used in the West Indies bases.

A set of 4-family noncommissioned officers' quarters to be erected at certain bases.

to pay much attention to the area, but as soon as it developed that the soil was adapted to the growing of sugar cane, the French and the British began to muscle in. That was in the seventeenth and eighteenth centuries when slaves and sugar made the Caribbean Islands and the Spanish Main the most valuable properties in the New World. The Dutch, in fact, thought they had turned a very good deal when in 1667 they yielded a lot of non-sugar-producing land (now the city and state of New York) to the British in return for a parcel of Guianian land with 120 miles of coastal front. (How prices do rise—here we have paid a number of destroyers for something which, a few hundred years ago, cost only the State of New York.) As for England, the deal with the Dutch seems to have been a case of heads-we-win-tails-you-lose; for during the late seventeen hundreds, the English came again to Guiana—this time by the privateer method. Following the privateer snatch, there were occasional changes in sovereignty among the Guianas, most of them resulting from manipulations around the peace tables of Europe. Finally, the Peace of Amiens, which ended the Napoleonic Wars, set up British, Dutch, and French Guiana about as they are at present. Then came the Monroe Doctrine to freeze the *status quo*, and thereby cut short this historical essay.

British Guiana itself comprises about 90,000 square miles. It is shaped like a rectangle, except that it bulges into Venezuela on the west. This western bulge represents the extent to which England was able to push out its colony's boundaries during years and years of dispute with Venezuela. That dispute, incidentally, is a *cause célèbre*, during which the Monroe Doctrine came very close to getting a test by fire (Cleveland's administration, 1895). Be that as it may, only about 200 of those 90,000 square miles are cultivated or inhabited. The aggregate population is about 300,000. We are dealing with a subject about the size of and with about the population of the State of Wyoming.

The tract of coastal land along which the population of British Guiana is concentrated extends inland about twenty miles. The tract is in reality a great mud flat, covered by a layer of rich, black, and hard-to-work soil. Much of the coastal strip is below the high-tide mark. Hence the colony is a land of dikes, canals, pumping stations, swimming pigs, amphibious goats (they graze on grass which sticks up out of two feet of water), houses on stilts, and so on. It is a Holland-in-the-tropics, or at least it would be if it were cleaner, brighter, cooler.

Beyond the muddy coastal strip the land rises to the mountain ranges which mark the colony's southern and western borders. Despite the fact that it has a relatively

favorable climate, this inland country is inhabited only by a few semi-native tribes (natives crossed with slave escapees) and by a few prospectors and lumbermen. The inland area comprises almost any type of terrain: swampy jungles (and jungles not swampy), grasslands, sandlands, wastelands, hills, mountains. It is a country of great rivers. These flow, in general, from the mountains east to the ocean. The biggest of the rivers is the Essequibo; but the most important is the Demerara, along which most of the people live and a short distance up from the mouth of which our Base will be located.

These various rivers are muddy and slow and unattractive near the coast (where we'll be living) but far inland the story is different. There the rivers come tumbling out of the mountains by way of breath-taking waterfalls which have no equals in the world. The highest and grandest of these—Kaieteur Falls—would make about six Niagaras, placing these one on top the other. Not many people have seen Kaieteur, Guianian communications being what they are, but add me to the list of those who will. The trip from Georgetown can be made in five or six hard days and then for a few days additional we can go on west for a spot of mountain climbing around Mt. Roraima. The latter is 8,500 feet high with the last 2,000 feet being practically sheer. Climbing Roraima is said to be about as healthy as going over Kaieteur in a barrel. So on second thought I'll content myself with taking kodachrome shots of both of them.

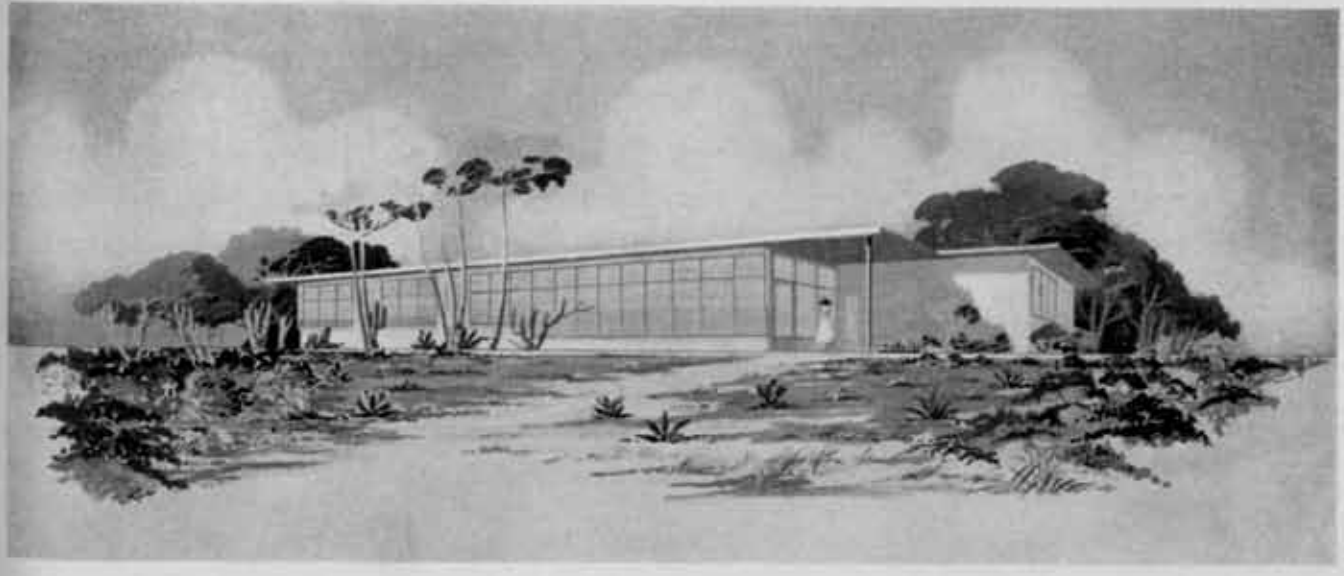
British Guiana now has two great crops: rice, which the people eat (and a little of which they export), and sugar, which is exported and which affords employment, one way or another, for about fifty per cent of the population. In normal West Indian style the sugar is produced on a few great plantations and sold chiefly to England and Canada. The only other crop of any consequence appears to be coconuts. At one time great hopes were held for the growing of rubber trees in Guiana but the experiments have not panned out and the project has been abandoned. The colony's natural forests do yield some items of value: the heavy, strong, termite-resisting "Greenheart" wood; and the rubber-like substance *balata* (used sometimes for golfball covers).

British Guiana also has important mineral resources all discovered within the past hundred years. As of today the second most valuable export from the colony is bauxite and the third and fourth most important exports are diamonds and gold, respectively. The bauxite is mined in a big way by the Aluminum Company of Canada but the gold and diamonds are produced the hard way by individual prospectors.

Getting back now to more pertinent matters, let us consider the climate. In general, the weather is hot (average seventy-five to eighty-five degrees), even, with slight variation from day to night or from month to month, and humid. The rainfall is upwards of 100 inches a year (about like Puget Sound), and in the wet seasons (November-February and May-July) you can expect a thunderless, lightningless shower every afternoon. It won't come every afternoon, but you might as well expect it. There are no hurricanes and no earthquakes. There is a fairly steady breeze (the trade winds) coming almost always from the east or northeast.

Some authorities state that in variety and numbers of bugs and insects Guiana leads the world. Many of the insects are big and brightly-colored but the one to watch is none other than our friend of the other bases, the mosquito. Anti-malaria measures are in order. Incidentally, the local custom is to leave windows and doors unscreened but to sleep under nets.

An exotic wild animal life teems all around and up to the very edges of the cultivated areas. I trust this means some profitable hunting. There are sloths, deer, anteaters, armadillos, jaguars, monkeys, bats (big vampires), manatees, lizards, alligators (including the



The 1-family company officers' quarters to be used in the Caribbean.

big caymen), snakes (bushmasters, rattlers, boa constrictors). After reading this list I'm beginning to see why the people hug the coast.

The natural plant life is in keeping with the pictures suggested by the animal life. Trees attain great heights, leaves are broad, flowers are brilliantly-colored. Among the flowers a standout is the orchid which often attains great size.

Communications are bad. There is a thin network (250 miles total) of roads confined to the coastal areas. These roads are listed as being "suitable for motor traffic" but my informant, who has recently bounced over some of them, tells me to strike out the "suitable" and substitute "possible" for it. On one occasion this informant started to drive from Georgetown south along the Demerara toward the site of the new Base. He got along after a fashion for a few miles but then he had to abandon the trip. From that point on the road was not navigable. There are two short stretches of single-track railway, the most significant one of which connects Georgetown with the colony's second city, New Amsterdam. Communication with the interior is effected only by river.

The population of British Guiana is a hodge-podge reminiscent of Trinidad's. The basic element is Negro —stemming from the slave era. Superimposed on and mixed in with the Negro element are Orientals, Indians, Portuguese. The ruling British class constitutes the usual infinitesimal per cent of the total population. By and large the people are extremely poor, eking out a bare existence from the cane and rice fields and from the rivers (fish). On the other hand, the owners of the sugar estates must make a good thing of it. British Guiana's exports always exceed its imports by a substantial margin.

The currency of British Guiana is a mixture of British, Guianian, American, and Canadian coins and notes. My informant states that it is quite a chore to keep all the various rates of exchange straight even though, he says, he had his slide rule handy all the time and never tried to carry the conversions beyond the second significant figure (my informant is an engineer; perhaps the exchange problem won't be so difficult for the readers of this essay). In any event, prices in general are reasonable except that there is the inevitable excise tax on imports. That operates to run the prices up on items such as canned goods, toothbrushes, and the like. Among the things that can't be bought at any price is a good steak, for like other places we have visited, British Guiana has no facilities for aging meat. They kill it tonight, and you're bouncing your teeth against it tomorrow.

Georgetown, mentioned early in this account, is the capital of the colony, the largest city and the city nearest our Base. The city has a population of about 70,000. As has been noted, it is located near the mouth of the Demerara River. The site of the city is below the high-tide level and so it must be protected by dikes. Most of the houses are of wood and are set up on stilts four to six feet high. The city is kept clean but there is nothing much that can be done about the intrinsic dullness of the place or about the heat. The city has two fair hotels both of which have "electric lights, modern sanitation, and shower baths," and one of which boasts "three rooms with private baths."

Prospects for sport and recreation in British Guiana do not appear promising. There are a few tennis courts and two golf courses in or near Georgetown and that is just about all. From this point of vantage it looks as though occasional sorties into the interior would provide the best recreation available.

The first and greatest (almost the only) press agent for Guiana was Sir Walter Raleigh who subscribed wholeheartedly to the then-popular thesis that Guiana was the site of El Dorado. "Whatever Prince" (Sir Walter, not your reporter speaking), "shall possess Guiana, that Prince shall be lord of more gold and of a more beautiful empire, and of more cities and people, than either the King of Spain or the Great Turk." Well, Sir Walter ended up on the gallows, and perhaps after all it was no more than he deserved.

Parachutes (and Propaganda) on the Corinth Canal

During the latter days of May 1941, the BEF in Greece moved south under cover of delaying actions, heading for the "beaches" of Attica and the Peloponnesus. In this withdrawal the narrow Isthmus of Corinth which connects the Peloponnesus with the mainland together with the canal which cuts across the isthmus, were of obvious strategic significance. This brings us to the critical morning of May 26, at which time the fate of the BEF hung in the balance.

On that morning, after a terrific dive-bombing and strafing attack, the Germans dropped several hundred (the British say more than a thousand) parachute troops along both banks of the Corinth Canal. Within a few hours the parachutists had battered down the few hundred (the Germans say more than two thousand) British defenders, and had everything in the vicinity under control. This action was the first important use of parachute troops in almost a year, and in addition it was a curtain-raiser to the all-out descent on the island of Crete a few weeks later. Therefore the Corinth show is worthy of our attention even though we lack many details, and even though many of the details we do have derive from an account by a German Army reporter equipped with the massive title of *Propagandakompanie Berichterstatter*. In the interest of brevity, this gentleman's title is shortened throughout this account to the less imposing title of PK-man.

The way this PK-man got his story is itself interesting and illustrates the general system of war reporting along the German fronts. The reporter was there, a member of one of the jumping echelons. The only way he could be distinguished from the job-lot of *Fallschirmjäger* (which is German for parachute trooper) was by the fact that in addition to his submachine gun, he was armed with a fast-shuttered Leica, plus the aforementioned title.

The Ju52 (multi-motored transport plane) carrying our reporter's squad took off as dawn broke on the 26th (from Salonika?). The payload of the plane was the squad of twelve parachutists, this number including one Lieutenant A in command and, of course, the PK-man. The reporter, running true to the form of all PK-men, tells us that the morning was beautiful, the morale high, the countryside hilly and green, the motor noisy. The noisy motor prevented profitable conversation and left each man with his own thoughts. Possibly some of the

thoughts turned to the standard witticism which the *Fallschirmjäger,* when they are on the ground, like to ascribe to their enemies the British (or their friends the Italians): "Lieutenant A to his squad: 'When I give the command to jump, push the man in front of you.' " Possibly the old standby was not, under the circumstances, good for a laugh.

Our reporter mentions the fact that quarters in the Ju52 were very cramped. It was difficult for him to get a look out of a window, but when he did get a look what he saw most of was other Ju52's. There were scores of them, all traveling the same route. By the same token, the thing he saw the least of was British planes. There were none of them. As our particular plane reached the sea, fifteen minutes from the canal, our observer began to glimpse Ju52's flying in the other direction. Those were planes that had dropped their loads and were heading home.

In due course our plane reached the objective: the Corinth Canal. It levelled out along a course parallel to the canal, flying very low (300 feet?) over the south bank. There was some British rifle and AA fire, but not enough to cause the attackers much concern, even at their low altitudes. Apparently the Stukas and the strafing Messerschmitts had done their work well. As a matter of fact, they were still operating in the vicinity (or, more probably, going through the motions of operating since by now British islands of resistance and German assault groups were intermingled over the terrain). In further due course, Lieutenant A shouted out the command to jump: *Absprung!* "in a tone of voice we'll never forget"—and jumped himself. The other eleven men, including Mr. PK, rapidly followed suit. The technique employed in quitting the plane involved ". . . placing the left foot in the door, giving a firm outward push, and flinging the arms into the air. . . ." Whether or not the outward push was to be by the man just in rear is not disclosed.

In British accounts of the Corinth jumps, there is speculation on the point of the very low altitudes from which the jumps were made. There is mention of an "explosive device" which literally blasted the parachute open as it left the plane.

The normal German practice in a parachute operation is to provide one plane carrying equipment to each two planes carrying personnel. The men are normally dropped with a minimum of personal equipment, and their first vital task is to get to the equipment containers. In our PK account, however, there is no mention of any scramble on the ground for equipment containers. Possibly such scramble was a technical detail overlooked by Mr. PK, or even one in which he was ordered not to participate. After all, his job was to preserve the Corinth operation for posterity—and only incidentally for The Coast Artillery Journal.

Actually, Mr. PK landed in a pit, amidst a lot of rocks. He was sorry about the rocks, but pleased about the pit inasmuch as bullets soon began to whistle overhead. As soon as he came to rest among the rocks, he cut loose from his 'chute and checked over his weapon and his Leica—giving the latter, he admits, second-priority attention. Then he took stock of things in order to get oriented prior to setting out for his squad assembly point. Apparently he had no map, but he was able to make out the knoll that had been predesignated as the assembly point. As Mr. PK crawled out of his pit he obliged us by looking skyward and noticing that the air was still swarming with German planes (exclusively). Waves of Ju52's continued to disgorge parachutists, and dive-bombers and Messerschmitts continued to go through the motions of attacking ground targets.

Mr. PK uses up many adjectives to describe the approach to the assembly point. It all seems to boil down to this: There was a great deal of shooting going on all over the place. But by whom, at whom, and from where was not discernible, not to Mr. PK, anyway. Actually, the Germans had assembled into platoons, or even companies, and were engaged in systematically reducing the individual nests of resistance. The British were not numerous, but most of them were New Zealanders and they were tough. The hand grenade was the most effective weapon. The Germans were taking heavy losses, but all the time more of them continued to fall from the sky.

Finally the assembly of the squad in which we are interested was effected. Lieutenant A—he who had shouted *"Absprung!"* in the unforgettable tone—then led the way "by bounds from cover to cover" to the company assembly point. There the medicos who had begun dropping with the first echelons, had set up an aid station, this extraneous note being inserted here in the interests of a point arising later in our story. Meanwhile, the zealous Mr. PK inspected the casualties. He states that the types of wounds showed the kind of close combat which had been and still was in progress.

The mission of the parachute attack had been to establish a bridgehead on the south side of the canal, and incidentally, to occupy Corinth and seize intact the bridge over the canal. His nose for news now in fine form, our PK-man therefore decided to bound bridgewards. Making his way toward the bridge, he passed many casualties and noticed other evidences of hard fighting. As a matter of fact, the area around the bridge had been the scene of the hardest fighting of the entire operation. However, the immediate question was this: Had the fighting been successful? Had the bridge been taken? Mr. PK assumed that it had, possibly because he had been able to catch a glimpse of it a few moments ago.

About this time a tremendous explosion resolved the point in question. The explosion could have been nothing other than the bridge being blown into the air. Mr. PK could not believe his ears, so he started next for a nearby knoll which he figured would give his eyes a chance. En route he encountered one Lieutenant P, whose black collar tabs showed him to be of the Ger-

man *Pionierkorps*. Lieutenant P was driving a captured British passenger car (illustrating the manner in which the parachutists habitually outfitted themselves with transportation). He stopped, and asked Mr. PK where in hell is the aid station (illustrating the fact that in the early stages of a parachute operation, no one knows where anything is). No one, that is, except Mr. PK, who happened as noted several paragraphs above to know where the aid station was. So he hopped on the running board and gave directions. There followed a wild ride.

During this wild ride, Lieutenant P came through with the story of the bridge. It developed that he was in charge of a unit of para-engineers which had been dropped the very first thing with the mission of seizing the bridge and removing any explosives placed thereon by the British. The bridge had been found to be well-guarded, but the engineers had finally been able to get up to it. They found it elaborately prepared for demolition and wondered at the failure of the British guards to pull the switch. Even as they wondered, they set about tearing up the fuse-wires and removing the charges. They congratulated themselves on one more bridge taken intact, this a highly important one.

Meanwhile, British resistance near the bridge had decreased almost to the vanishing point—except that occasionally a stray round of artillery fell in the vicinity. One such stray round turned out to have had an important number on it: it hit near a charge that had not yet been removed and that was apparently still primed. That charge and all the others still in place naturally went up. And so did the bridge, and so did all the German engineers in the vicinity. That was why Lieutenant P was hunting the aid station: he wanted a doctor to bring back to those of his men who were only wounded.

Our PK-man rode the running board up to the aid station and then back down to the site of the ex-bridge. He noticed German parachutists at work mopping-up the far bank, and decided that the center of gravity of the news now had shifted toward the town of Corinth, five miles to the west. It will be remembered that a secondary mission of the para-operation was the capture of Corinth. Therefore Mr. PK (and apparently Lieutenant P and his few remaining able-bodied engineers) started up the Corinth road.

Much débris, including many trucks and cars, was strewn along the road. Here and there Germans were at work trying to get abandoned vehicles started. In fact, when Mr. PK himself sighted an especially neat-looking job off to one side he went over to appropriate it. He had some trouble, but finally got the motor started and continued his trip westward, now riding de luxe. On the way he saw a party of German troops gathering up a few abandoned antitank rifles. Someone explained that a hurry-up call had come back ordering all such weapons to be salvaged and sent forward. The guns were needed to engage a few light British tanks which were said to be still afield. The guns and some ammunition were therefore piled in the PK car and taken up ahead to where one Captain S was waiting. This officer had the guns set up immediately, and it looked for a moment as if immediately would be none too soon. For about that time one of the light tanks did appear across the field. The gunners drew a bead and got ready to fire but something about the tank looked phony: it would start and then stop, and when under way it traveled jerkily. Just in time, Captain S hit upon the thought that this was a British tank now being operated by a couple of his parachutists. This turned out to be true.

Finally the advance on Corinth continued. Mr. PK in his car traveled fast, and soon found himself at the point of the advance guard where a Lieutenant R was in command. Lieutenant R accepted the chance to hitch on in to Corinth with the PK-man. The procession now assumed an appearance which no doubt was completely terrifying to the Greek populace; in the car were Mr. PK and Lieutenant R, the latter with a smoke grenade in his hand. Outside, riding the running boards, were three or four parachutists armed to the teeth with hand grenades and machine pistols. The captured tank, now under control, had come up and was traveling just behind the car.

Corinth was taken, without resistance and with only one noteworthy incident, included here as an example of the careful timing that always characterizes the committing to combat of the elements of the German combat team. It seems that just as the advance guard of the parachutists entered the town from one side, on the other side there landed a plane and from it there stepped, in the nick of time, an interpreter. German thoroughness had covered all the angles—even down to relieving the *bürgermeister* of his keys in his own language.

MEN, FEAR AND PANIC

By Major Thomas E. Stone

On a bright moonlit night in January 1544, Blaise de Montluc, with six companies of pikemen and arquebusquers supported by a body of cavalry, set out to destroy a bridge which lay before the city of Carignan, then occupied by the enemy. Two hundred pikemen and arquebusquers guarded the bridge while a substantial body of troops held the city itself.

(Don't let that 1544 dateline scare you off—this is an article on today's warfare.)

To assault the bridge, Montluc organized a detachment of 200 picked men selected from the several companies. Having planned his maneuver and determined the disposition of his forces, Montluc, in immediate command of the assaulting detachment, silently approached the bridge and charged suddenly out of the night. The surprised bridge guard fled back into the city. Montluc crossed the bridge and took up protective positions, posting his forces as shown generally in the sketch.

He now set about the destruction of the bridge, using some eighty peasants who had been brought along for the purpose. The work proceeded slowly. From time to time a heavy mist hung over the bridge, blotting out all vision until it drifted off again to leave the bridge again in moonlight. For five hours the work of destruction continued, with one interruption from an enemy patrol which fired and withdrew.

Meanwhile the enemy within the city organized a counterattacking force of 1,200 men to recapture the bridge. Unknown to Montluc, this force approached in the formation shown in the diagram; 200 picked arquebusquers in the lead; 400 more following at one hundred paces; and behind these at two hundred paces, 600 pikemen.

Selecting a moment when the bridge was enveloped in fog, the 200 leading arquebusquers struck Montluc's detachment at the instant that his sentries ran in to report. Montluc's men, surprised and disconcerted, broke and fled—all but thirty who rallied to Montluc as he called out his name in the blanketing mist.

Simultaneously the flank detachments, hearing the shots, the commotion, and the battle cry of the enemy, "Spain! Spain!" also turned and ran—as did the peasants working on the bridge.

Running blindly and shouting as they ran, the fleeing men from Montluc's detachment, now a frantic mob, bore down on the supporting group. An officer tried to rally them. They trampled him under foot and crashed into the support. The support itself took flight and fled with the others into the night.

Meanwhile, on the enemy side of the bridge Montluc and the thirty men who had rallied to him, charged full tilt through fog into the leading group of the enemy, shouting, "France! France!" and firing as they charged.

The 200 attacking Spaniards, themselves astounded, broke and turned and fled back upon their own support. The support, four hundred strong, took up the panic and rushed back upon the six hundred pikemen who fled in turn. And the entire counterattacking force, now a

fear-maddened horde of 1,200 men, raced with a great din back into the city. Montluc, after advancing 200 paces, halted his group of thirty and returned to the bridge. There he found that the officer who had been in charge of the peasants had been able to rally and hold twelve of them. The officer who had been trampled in the support position now came up, causing great laughter because of his torn and tattered appearance—but he brought with him some thirty to forty men whom he had rallied out of the flight. The other officers, each with a few men, straggled back to the bridge. Montluc then proceeded with some eighty to one hundred men to complete the destruction of the bridge. An hour before dawn, the bridge destroyed, Montluc withdrew.

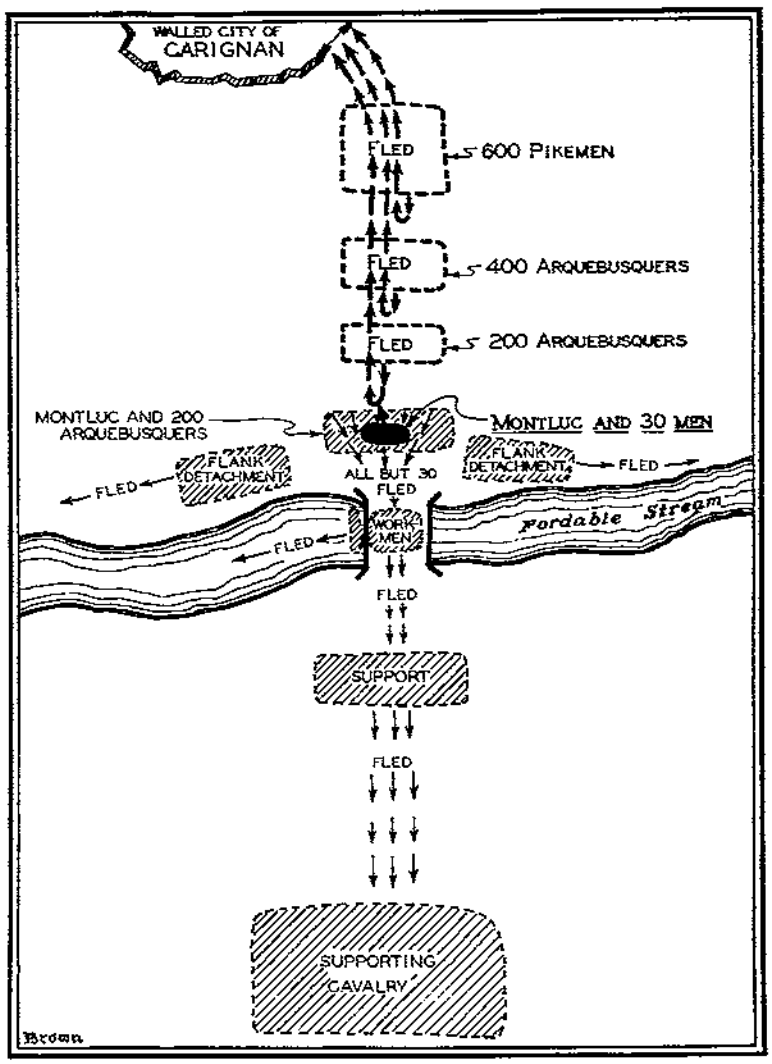
II

Why was it that, each time, on that night of panic 400 years ago, it was an officer who rallied the men? Was it because the officers were braver or more intelligent? Or was it because, by the very nature of their experience as officers in the routine of camp and campaign, they were practiced in dealing with sudden fear within themselves and therefore, out of the lessons learned by such experience, had found out how to equip themselves to conquer their own panic in a moment of crisis?

Again—what was this panic that gripped the body of each fleeing man? Was it panic in the individual – personal panic – these things which went on inside each man and caused him to run? Were these things something entirely new in his experience? *Was his own surprise at the things that his body did, in the sudden state of intense fear, as great or greater than the surprise of the sudden attack itself?* General de Negrier said, "Of one hundred men who are under fire for the first time, ninety-five do not see the end of their gunsight and fire very high." Cromwell said, "Put your trust in God and aim at their shoelaces." The fact is that, in intense fear, the eyes do not focus properly. *Was it the fear of himself, the suddenly unknown—the suddenly undependable quantity, that was the greater fear which drove each of the fleeing men at Carignan to mad unreasoning flight?*

How many of us, in the usual course of life, have discovered what great and sudden fear can do to the body? How many have experienced actual panic? We have read about theater panics; but have we ever been in one? Can we be sure how we would have acted? How well prepared, then, to conquer panic, is the man who has never felt it and is utterly surprised when it strikes him?

The veteran is steadier than the recruit. Is that because he is braver? But the veteran is the same man as the recruit—with experience. Is not the veteran the steadier man because he has had the *experience* of great fear, because it no longer surprises him, and because the veteran has met the enemy—fear—and learned how to conquer it?



The action at the bridge

If we train men to shoot, would it not also be sensible to train them to conquer the fear that impairs their power to shoot? If men learn to swim by getting into the water, is it too far-fetched to believe that they can learn to conquer great fear and panic if, with a task to do, they are deliberately put into a situation which is known to cause great fright?

Is a practicable means available?

There is one means available. The fact is that personal panic, in miniature, unadmitted and concealed—the panic which afflicts the individual as contrasted with mass panic—is a common phenomenon not alone of battle but of the drillfield. Every officer has had to deal with it to some extent within himself from time to time. It afflicts every man with varying degrees of intensity the first time he steps out to command in infantry drill. Or it afflicts him whenever he attempts, while in limelight, to do something for which he is not pre-

pared by practical habits already formed. Our word for this kind of panic is stage fright.

Consider the evidence set forth in the accompanying table of the symptoms of great fear as listed by an eminent scientist, with those of stage fright as described by two specialists in the art of public speaking.

III

From the comparison it seems clear that great fear and personal panic are pretty much the same as severe stage fright, and that in stage fright we may have at hand the means, not only to familiarize ourselves with the phenomena of panic, but also the means through which to give men experience of the fear that so often determines the issue on the battlefield. It follows then that a sound means by which to assist men to learn how to conquer stage fright (fear) is simply to project them into command of squads, platoons, and companies for the purposes of drill and instruction.

Is it not possible that Montluc and his officers by virtue of such experience with stage fright had learned in camp how to school themselves to conquer their own fear and panic in combat?

But what is panic? What, at least, is it due to? *Panic is not due primarily to fear.*

Fear is constantly with us, unnoticed, unobserved. Without fear, human beings couldn't exist. Fear keeps us from doing things that would destroy us—from stepping out of a tenth-story window, for instance, or walking in front of a railroad train.

Fear also keeps us doing the things we ought to do. We have a task to perform in a certain way at a certain time. Do we not feel something, somewhere in us, guiding us to do that thing on time and in the proper manner? Suppose we made a botch of it or finished too late. Does not the thought of failure in either respect bring on a feeling of anxiety—fear?

Fear is always with us—every time we cross a crowded street or slice a piece of bread with a butcher's knife. We get so used to fear in everyday situations that *we forget it is there.* We are not aware of fear when we see an automobile, yet we know that automobiles kill more people than lions do—and we are afraid of lions.

It is only when the danger is new or unfamiliar or immediately threatening that we are conscious of fear. It is only when we don't know how to deal with a dangerous thing that the fear is intense. When we know how to deal with a dangerous thing or how to act in a fearful situation, the fear keys us up to do a better job than otherwise. Great actors confirm this, repeatedly.

Marshal Ney said, "The one who says he never knew fear is a compound liar." Henry of Navarre said, "You tremble body! Well, you would tremble more if you knew where I am going to take you." Absence of fear in a dangerous situation is a sign of ignorance or stupidity. The whaleboat commander in *Moby Dick* wrapped it up in a nutshell. He said, "I don't want a harpooner who isn't afraid of a whale."

If panic is not due primarily to fear, then what is it due to?

Panic is due to fear plus confusion. Consider the panic of stage fright. It asserts itself when a man, while in a state of anxiety, must do something that he is not used to doing. Similarly, panic affects all men when they are thrown into the limelight or into danger in doing something which they do not know how to do as a matter of habit. The most competent public speaker is afflicted to some extent with the panic of stage fright the first time in his life he sails a boat or mounts a horse or steps out to command in infantry drill.

To repeat, personal panic is due to fear plus confusion. The fear may be due to actual danger or to the fear of failure—a fear that may be more intense than the fear of danger itself. The confusion may be due to lack of habits to fit the needs of the situation, to uncertainty or lack of knowledge as to what to do next, and to lack of time to experiment or to think in a rapidly changing picture. If the confusion is absolute, a far greater fear swoops down—possibly the greatest fear that is known to man—the feeling that he with his body can not do what should be done, the feeling that he is defenseless—that he has not within himself the power to cope with an inescapable danger. At this stage, poise and self-confidence are lost, the muscles refuse to act in the usual manner, hope is abandoned, the mind goes blank, and the victim is paralyzed or takes flight.

Eliminate confusion from the equation: "Fear + Confusion = Panic" and there is no panic.

Compare the actions of two candidates in a World War officers' training camp. One has had substantial experience of command in infantry drill. The other has not. Both are of equal capacity.

Assume that command of the units is being rotated for the purposes of training. A rifle platoon under the direction of an instructor is halted and stands "At Ease." The two candidates are both in the third squad.

Trainee A, experienced and knowing the pitfalls of command in infantry drill thinks, "Anybody may be called out at any moment to take command. It might be me. I'm a little rusty. If I were called at this moment, what would I do?" He is tense for a test of his abilities, an opportunity for success or failure, may be at hand. In the back of his mind he makes a plan. Always he is making plans, "What would I do in this contingency? What in that?"—specifically and in detail.

Suddenly he hears his name called, "Candidate A"—A shock goes through his system—"will you come forward and take command!"

He comes to attention, brings his rifle to the shoulder, advances a half-step, and faces to the right in marching. Holding himself at attention, he marches to the right between the ranks. He clears the right file and faces to the left in marching on the ball of his right foot and marches to the front. Each movement is automatic. They are practiced habits. While in the ranks and when off duty, he has many times used his imagination

	SYMPTOMS OF FEAR—TERROR—PANIC From the book *Expression of Emotions in Man and Animals* By Charles Darwin	SYMPTOMS OF STAGE FRIGHT From the book *Stage Fright and What to Do About It* By D. W. Watkins, Associate Professor of Public Speaking and H. M. Kerr, Ph.D., Institute of Public Speaking (Both of the University of California)
Heart	The heart beats quickly and violently so that it palpitates or knocks against the ribs.	People who in ordinary life "have never had a heart" feel as if some giant bird were imprisoned in their chests and beating its life out against their ribs. . . . The pulses hammer.
Cold Sweat	That the skin is much affected under the sense of great fear, we see in the . . . manner in which perspiration immediately exudes from it. This exudation is all the more remarkable, as the surface is then cold and hence the term a cold sweat. . . .	"Whenever I speak," John Dryden once said, "a cold sweat trickles down all over my limbs as if I were dissolving into water!" . . . Many a singer, actor, or speaker has felt the same cold sweat.
Hair	The hairs on the skin stand erect and the superficial muscles shiver.	The victim of stage fright is likely to say that the hair on the back of his head and neck stood up.
Breathing	In connection with the disturbed action of the heart the breathing is hurried.	The breath is disturbed. There is a tendency to pant.
Saliva	The salivary glands act imperfectly; the mouth becomes dry and is often opened and shut.	The salivary glands, too, often refuse to function. The mouth becomes absolutely dry. There must be much swallowing after each word in an effort to start the mouth secretions.
Voice	From this cause and from the dryness of the mouth the voice becomes husky or indistinct or may altogether fail.	Never does the voice behave as it should. . . . The pitch rises. . . . Sometimes the tone thins out until it can scarcely be heard. In extreme cases there is no voice at all. With certain people the voice becomes breathy and husky.
Muscles	One of the best marked symptoms is the trembling of all the muscles of the body; and this is often first seen in the lips.	One of the most common ways in which stage fright manifests itself is in the trembling . . . of the knees . . . thighs . . . arms . . . trunk.
Pallor	The heart beats wildly or may fail to act and faintness ensue; there is a deathlike pallor.	"How pale you got!" says a friend to the speaker, actor, or singer, when he comes off the platform.
Eyes	The uncovered and protruding eyeballs are fixed on the object of terror; or they may roll restlessly from side to side. The pupils are said to be enormously dilated.	The eyes, too, are affected. The performer stares at the ceiling or the floor. Sometimes he looks out the window. But he never sees anything he looks at.
Rigidity	All the muscles of the body may become rigid or may be thrown into convulsive movements.	
Flight	In other cases there is sudden and uncontrollable tendency to headlong flight. So strong is this that the boldest soldiers may be seized with a sudden panic.	Madame Schumann-Heink once said, "I grow so nervous before a performance, I become sick, almost. I want to go home."
Intestines	The intestines are affected. The sphincter muscles cease to act and no longer retain the contents of the body.	The trembling inside the body is even worse. There are rumblings and shakings that make the victim feel that he is staging an internal earthquake. Sometimes there is a feeling of inward churning. So severe is this disturbance of digestion at times that a violent fit of nausea ensues as soon as the victim is off the platform.
Mental Prostration	A fear rises to an extreme pitch, the dreadful scream of terror is heard. Great beads of sweat stand on the skin. Utter prostration soon follows and the mental powers fail.	The speaker forgets his next sentence. . . . He cannot stand there before his audience and just do nothing. . . . The victim cannot think what he is to do next . . . the pause becomes longer. . . . The longer the pause, the greater the fear . . . until at last utter panic ensues.

so as to see in his mind's eye and feel in his muscles themselves exactly how he would make these movements and in what order. He has simulated all of this in detail in his imagination, seeing in his mind's eye the things about him and feeling himself march as he is now marching. When facing to the left, after clearing the right file, he did not have to think, "Which foot do I turn on?" He did it automatically. It was a habit, fixed by mental practice. The movement asserted himself without the necessity of thought. And by that fact his mind was free to watch the general situation in which he was now the principal actor. Every required movement that thus took care of itself automatically, by virtue of prior mental practice, to that extent relieved his mind to watch, think, appraise, decide.

Trainee A now clears the front of the platoon. He faces to the left in marching, again turning smartly on the ball of his right foot. Body straight, chin in, feeling the stimulating sense of power that comes when his body acts correctly to do what is needed, he approaches the instructor. Tense as he is, he feels poised and confident, for he has already figured out what the instructor in this situation is most likely to tell him to do—and has prepared for it. Even if that guess is wrong, he has prepared another line of action.

Three paces from the instructor, as in his mind he has practiced it, he comes to a precise halt, bringing his heels together with a click, and salutes—all of this automatically without thinking. A cold sweat may be going down his back—his muscles may quiver underneath. But nobody else knows it. That is old stuff. He is used to it. It has happened before. The important thing is that he feels keyed up. He is going to do a real job.

He listens to the directions given by the instructor. He salutes and is now in command. He faces the platoon smartly. This is a critical moment. He has prepared for it. He looks up and down the platoon, sensing the feeling of power of command as he had sensed it in his imagination while picturing exactly this situation. And he also senses the power of this group of men to do things in unison, under leadership and command. With full lungs, and with stomach, chest, and throat muscles throwing his voice with the intonation and force that has been gained from practice in a vacant lot, he commands (to use the modern command), "Platoon-n—A-ten-nn—TION!—Dress Ri-e-e-t——DRESS!" and proceeds to dress the platoon—exactly as he has practiced it in his imagination.

Consider now Candidate B who has not had the experience of command and is unaware of the pitfalls, particularly those that can impair his power to perform. He has not previously made the blunders which he is now about to make. He has been in the ranks and has drilled with perfection to the command of others. The exercise of command looks easy.

He has not learned how necessary it is to use his imagination to practice in advance. He does not know that he faces in giving infantry drill the equivalent of a battle situation in this respect—that he must have a number of previously learned habits to fit the needs of a fear-causing situation in which, by the nature of things, he can not practice himself beforehand except in imagination. Nor has he learned like the experienced man that with his imagination he can actually produce enough of the essentials of the actual situation which will later materialize. Thus beforehand he can practice his body through simulation to do, automatically and by habit, the things necessary to conquer the situation at the crisis.

Standing in the ranks, confident that all will be easy, he passes the time at ease. Suddenly he hears his name called. An alarm runs through his nerves.

"Candidate B," says the instructor, "will you come forward?"

Candidate B begins the trip forward to the spot in the limelight. However, his succession of events is quite different from those of Candidate A.

He has not at this moment had from the instructor the commands: "ATTENTION!—Right Shoulder—ARMS!" to which, in the ranks, he responds by habit. Nor has he, by previous use of his imagination, established the habit of coming to attention and to right shoulder arms as the first response to the request of the instructor in the situation which now exists. The automatic habit does not now assert itself. To do the proper thing he would have to take time to think. But there isn't time to think. He steps out of the rank with his piece at the trail and brings it up sloppily while marching to the right between the ranks. He does not march with the precision of attention.

Approaching the right file he prepares to face to the left. Not moving now by habit as when in the ranks, there is a moment of doubt as a question flashes, "Shall I face to the left by turning on my right foot or on my left?" There is a moment of confusion in his mind—a momentary blank. With an awkward movement, the result of the conflict at the moment of choosing, he turns to the left and marches toward the front.

Clearing the front rank, he again has to choose the foot on which to turn—again he makes an awkward movement. He is now out in front. Everybody is looking at him. The crisis is here. He has to perform—now and here—and he has to perform to perfection.

Sweat is rolling down his back, his legs feel awkward, jerky. He is heading toward the lieutenant—but he can't see him clearly. Everything is somewhat out of focus. This is strange, unnatural, frightening. He doesn't know his eyes are dilating automatically in response to his fear. Frantically, he gropes in his mind for each movement he now must make. He has to halt before the instructor. But where? How close? How far? His left hand comes up and brushes across his face—an old habit when confused and in doubt.

He now bears down on the instructor. Which foot shall he halt on—the right or the left? Then what should he do? Should he come first to order arms before

saluting or salute from the shoulder. But there are too many things to think about and there isn't time enough to think. His muscles jerk as he comes to the halt. He sways. He salutes—he doesn't know how.

The instructor speaks out of a distorted world. He finishes his directions. Candidate B is now in command. He has to give a command. What command? He can't remember any command. Sweat is rolling. His thighs are quivering. He stares at the platoon.

Every man in the ranks knows the command he ought to give. They are actually saying it to themselves. If he were safe in the ranks, his lips would be phrasing it too. But here and now his mind is blank. He hasn't the habits to fit the needs of the situation. Time is passing and *something must be done!* He wants to get away from here. Somewhere he hears a strange voice—his own voice—yell, "FALL OUT!"

IV

Confusion is due to lack of habits that fit the needs of the situation when there isn't time enough to experiment or think. It can be eliminated by using the imagination to develop in advance the habits needed in the situation. These minor habits are of critical importance. If they take care of themselves the mind is free to think, plan, watch, appraise, and decide.

There is probably no greater tonic to offset fear and to give the power to conquer the situation than the feeling that comes when the habits of the body automatically assert themselves to fit the situation. For then the mind is free to decide what to do next, and there is no confusion, no loss of self-confidence, no overpowering fear, no panic.

We can now again return to Montluc and his officers at Carignan. Is there any doubt that each, in the normal course of his duties, had experienced the things that make for stage fright—the panic of the parade ground and the drillfield? Is there any doubt that each, by such experience, had been compelled by the necessity of creditable performance in front of his fellows to form *the habit of* imagining in advance? Is there any doubt that such a habit is essential for preparation for the battlefield? Is there any doubt that Montluc, planning the assault and disposition of his forces, had not also imagined exactly what he would do if the enemy should charge suddenly out of the fog? And finally, is there any doubt that as the night went on, Montluc's mind was constantly exploring every reasonable contingency and imagining for each exactly what he would do?—all to the end that at the instant required he would have at hand the automatic act to fit the needs of the situation. But his supports and reserves were not in danger! What about their panic?

In the combat formations of the sixteenth century, troops were densely massed; large numbers of men close together. Men crowded together, act differently from men dispersed and comparatively alone. This may be readily understood by imagining how much excitement there would be at a World Series game—how much rooting, cheering, yelling there would be—if the audience consisted of one man, or even of fifty or a hundred scattered through the grandstand and bleachers. Men, closely massed, are affected by crowd hysteria which may result in wild mass jubilation, wild mass heroism, or blind mass panic.

In today's war men must be widely deployed in action and we have the so-called "vacancy of the battlefield." Separated one from the other, most of the time unseen, men in combat are less affected by crowd hysteria either toward mass heroism or mass panic.

In the sixteenth century a major might command an area no larger than that now commanded by a corporal. The major, standing up or riding a horse, could be seen and heard by his men, whereas the corporal today must himself take cover. The sight of the commander, his voice, manner, and example have always been a powerful factor in the creation of morale. Dealing with the double-edged sword of crowd hysteria, the higher commander was often the decisive factor at the moment of crisis in the battles of the past. Today the higher commander can do so only to the extent that he can create memories in the minds of his men which they can carry on to the battlefield, memories of his conduct in camp or his gallantry in some isolated incident, observed by few and thence reported by word of mouth—unless perhaps he is fortunate enough to have a dive bomber create the setting for him.

Today, the importance of the power of each man in the ranks to deal with his own fear and possible panic increases geometrically as the interval in extended order and small-unit maneuver increases by the yard. In effect, he must often be his own officer; he must command himself.

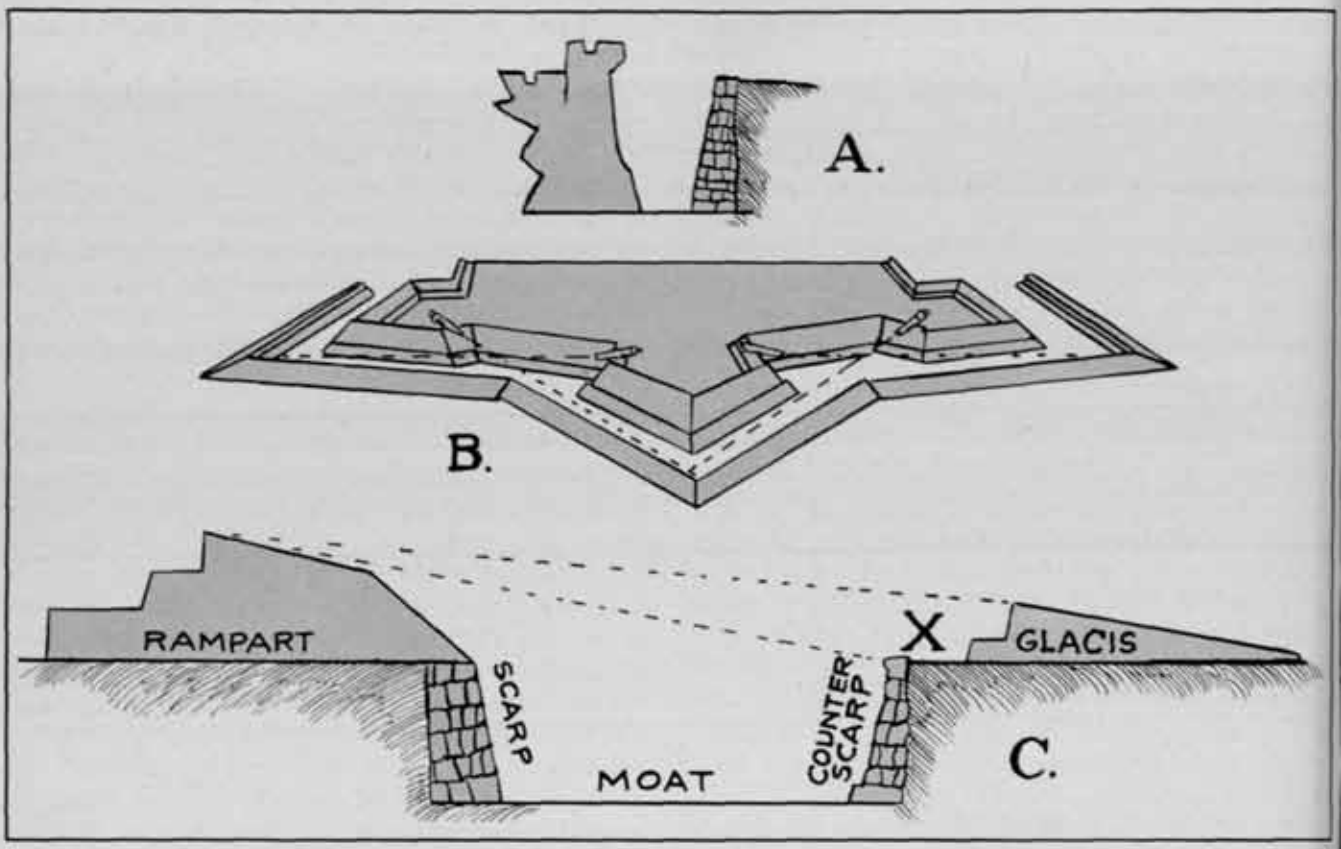
The higher commander must therefore concentrate on building within the soldier habitual modes of independent action which, being part of the soldier, go wherever he goes. And here we find that infantry drill has two opposite effects. On the one hand it tends to prevent the man in the ranks from developing the habit of using his imagination to equip himself in advance with the automatic acts and attitudes to conquer fear or contend with surprise. But on the other hand, in the instance of the man who must prepare for a sudden and unexpected call to take command in drill, it compels him to form his habits in advance.

When the disciplinary values of drill have been obtained and the regularly assigned commanders have attained proficiency, then to the greatest extent possible men should be called from the ranks to take temporary command.

Finally, the men should be given some indication of the reasons for this practice, some knowledge of the manner in which the imagination should be used in preparation, and some understanding of the importance in preparation for the battlefield, of the method used to prepare themselves for command in drill.

The Story of Artillery Through the Ages

By W. A. WINDAS



Chapter 16: THE EFFECT OF GUNPOWDER UPON FORTIFICATION

The presence of the first artillery was most keenly felt in siege warfare. Its influence is clearly reflected in the design of the first post-gunpowder castles.

(A) shows the first serious attempt of castle-designers to nullify the new weapon. The height of the main wall remained unchanged, but was sunk deep in the moat, so that its face would be protected by the counterscarp wall.

Also, about this time the knight swallowed his pride and decided to employ the gun in defense of his fortress. For counterbattery work, however, the guns of the day were none too successful. For the attackers to hit a castle was one thing; for the defenders to hit a small target like an enemy gun was quite another. They could, however, keep siege towers at a distance.

But these expedients only temporarily prolonged the life of the castle. The guns increased in range and power, and fortification became too expensive for individuals. This sounded the death knell for the knight.

Illustration (B) shows a fort design after the gun had been acknowledged the principal weapon of the defense as well as the attack. The angles, of course, are to avoid blind spots, and enable the defense to lay a cross-fire enfilading the entire face of the wall.

By Vauban's time the art of fortification had become so complex as to be a mystery to all but the most mathematical minds of the day.

(C) shows a cross-section of a typical fortification of the early-modern history period. A major improvement was the covered way at X. This enabled the defense to prevent guns from being placed on the glacis, and saved the scarp wall from taking a close-range hammering.

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.

Antimechanized sights. During July the Board tested antimechanized sights for use on the 3-inch and 90-mm. mobile antiaircraft guns. Each gun was equipped with two sights, one for the azimuth setter, and one for the elevation setter. Each sight consists of a small elbow telescope attached to the gun carriage by a sight mount provided with adjustments to permit the sight to be collimated with the axis of the bore. The telescopes are three-power and have a field of view of 13°20'. The sight mounts are rugged and solidly attached to the gun carriage. Each elbow telescope is readily clamped into the sight mount by a transom cap which is clamped over the sight barrel by means of a swing bolt and wing nut. Since each telescope weighs only two pounds and three ounces, the shock of gunfire does not appear to place any great strain on the sight mount. To collimate the telescope with the axis of the bore, adjustments are provided in the sight mount whereby the telescope may be rotated about three separate axes with respect to the axis of the bore. Rotation of the sight about each of these axes is accomplished by loosening clamping bolts and then turning a worm screw with a screwdriver. Clamp bolt nuts must be tightened with a wrench. After the initial adjustment, it should not be necessary to readjust the sight mounts as long as all clamp bolts are kept tight. The telescope itself is positively positioned by a squared surface and flanges when it is clamped into the sight mount by means of the transom cap and swing bolt arrangement. The optical axis of the elevation or range setter's sight is fixed in a position parallel to the axis of the bore. For the azimuth or deflection setter's sight, the optical axis is fixed in the vertical plane parallel to the vertical plane containing the axis of the bore. A knob is provided to permit rotation of the optical axis in the vertical plane. This permits the azimuth or deflection setter to track readily a target that is not situated in the horizontal plane of the gun. Elevating limits for the azimuth or deflection sight are ± 90°. The sights do not interfere with the normal antiaircraft duties of the gun pointers.

In using the antimechanized sights on the 3-inch gun mount, the azimuth setter can remain seated but it is necessary for the elevation or range setter to stand while using his sight because of the greater distance between his seat and the eyepiece of the telescope. While it would be preferable for this operator to be able to use his sight without leaving the seat which he normally occupies, the requirement that he stand is not believed to be a serious handicap. The position of the elevation sight cannot be changed readily. Raising the operator's seat would be much easier than to move the sight, but the advantage gained does not warrant a modification in the position of either the sight or the seat. On the 90-mm. gun mount, both the range and deflection setters can use the sights easily from their seats while leaning slightly to one side. In using the sight, the azimuth or deflection setter tracks the target by operating the gun azimuth handwheel and sight-elevation knob so as to keep the target immediately above the reticle graduation in his sight which represents the proper lead. The smallest graduation of the deflection reticle is five mils. Ten-mil intervals from the center line are numbered by the figures 1 to 5 on either side. The elevation or range setter tracks the target by keeping the target centered on the horizontal line in his reticle which corresponds to the range of the target. Seven such horizontal lines are provided. The range interval between two adjacent lines is 500 yards and the greatest range on the scale is 3,000 yards.

Firing tests were held at Fort Story, Virginia. The two guns were emplaced in the sand about fifty yards from the water's edge with a height of site of about twelve feet. Fifty rounds were fired from each gun using as a target the radio-controlled Boat V-11.

The sandy character of the gun site did not afford a very solid emplacement. The sand did not resist backward sliding of the mount and disturbance of azimuth orientation during firing as much as might other types of soil. Four solid iron pickets were driven into the ground alongside the outriggers of the 3-inch gun in such a manner that two stakes resisted backward sliding of the mount and two of the four resisted rotation of the mount in either direction in the horizontal plane. However, the soil was so loose that the stakes were not effective since this mount moved during firing as much or more than previous 3-inch mounts used in similar horizontal fire. After the first seven rounds, the gun had moved backward one inch and was off eight mils in azimuth orientation. Gun level had not been disturbed. After the next twelve rounds, the mount had tipped backward one mil out of level and had rotated in azimuth five mils counterclockwise. After the next thirty-one rounds, the gun had again tipped backward one and one-half mils and had rotated counterclockwise thirty-three mils farther. This movement of the gun does not affect employment of the antimechanized sights, but is given only as information in connection with the amount the 3-inch mobile antiaircraft gun may be expected to be disturbed when emplaced on fairly loose sand during horizontal fire.

During the first thirty rounds fired from the 90-mm. gun, the same four iron pickets, previously driven around the side of the outriggers of the 3-inch gun, were driven down around the sides of the outriggers of the 90-mm. gun. One picket was driven on either side of the rear outrigger and one in rear of each side outrigger. The 90-mm. gun was disturbed comparatively little by horizontal fire. After the first thirty rounds, the gun had moved one mil out of orientation in azimuth, and out of level three and one-half mils. The iron pickets were then withdrawn to determine whether horizontal fire would displace the mount when no pickets were used. After nineteen more rounds, the mount had again moved out of orientation in azimuth one mil and out of level two mils. During firing of the first thirty rounds, the mount was moved to the rear three inches while the iron pickets were being used. Two of the four pickets resisted motion toward the rear. During the next nineteen rounds, the mount slid three and one-half inches farther to the rear. As previously stated, the character of the sandy soil was such that pickets did very little good towards stabilizing the mount.

During the firing with antimechanized sights, it was not possible to attain a high rate of fire owing to the fact that the target was completely obscured from both trackers for an appreciable time after each round. When the ground was dry, a large cloud of smoke and dust arose from the blast which took several seconds to clear away, depending on the velocity and direction of the wind. After a rainstorm when the ground was soaked, the smoke of discharge still obscured the target for an appreciable time after each round. Because of this obscuring effect of the gun blast, it was impracticable for gun pointers to observe the fall of the shot since in every case the splash occurred while the target was obscured in the telescope. A rate of fire of ten to twelve rounds per minute for a single gun firing either 90-mm. or 3-inch was found to be feasible. At the short ranges contemplated for antimechanized firing, it is believed that leads should be based entirely upon estimates and that no system involving the use of a deflection board or similar paraphernalia should be contemplated. It is believed that trained observers displaced far enough from the battery to avoid interference from dust and flash, can telephone estimated leads to the azimuth tracker and estimated ranges to the elevation trackers with sufficient accuracy to insure effective fire at the limited ranges involved. The flat trajectories and short times of flight involved make it possible to bring effective fire to bear even though range and deflection are estimated somewhat roughly. Times of flight for the ranges specified vary from about one to four seconds.

From the tests described above, the Coast Artillery Board concluded that:

a. The sights described were suitable for antimechanized use on 3-inch and 90-mm. antiaircraft guns.

b. Gun pointers looking through the sights will be unable to observe the fire from their own guns due to interference from dust and smoke.

c. A high rate of fire comparable to antiaircraft fire usually cannot be attained because of the fact that the target is obscured from the gun pointers for an appreciable time after each shot.

d. Unless more than one battery is firing on the same target, effective control can be exercised by observers slightly removed from the gun position so as to avoid interference from smoke and flash.

e. Complicated methods of fire control, such as those requiring the use of oriented charts or similar systems, should not be attempted but fire control should be based on estimated data.

It was recommended that the telescopic sight be adopted as standard for the 3-inch mobile and 90-mm. antiaircraft guns.

Clothing. The Board has recently completed a test of a convertible sport-type cotton shirt submitted by the Quartermaster Corps. Both the long sleeve and short half-sleeve type of shirts were considered. The Board concluded that the sport-type shirt is more desirable than the type of cotton shirt now issued. The shirts are cool and comfortable, launder excellently and the appearance when worn without a necktie is satisfactory.

The appearance of the collar when a tie is worn would be improved if the lapels of the collar were made longer.

The Board also completed tests of the Helmet M-1, liner and various types of winter garments to be worn under the liner during cold weather. The Helmet M-1 and liner have been adopted as standard, are in quantity production and it is expected that deliveries will be made by early fall. Two types of each of the following winter garments were commented on: Caps, knitted; toques, face; and hoods, cloth. Under existing weather conditions, an actual wearing test could not be held. Therefore, the test consisted of try-ons and fittings with various combinations of outer clothing including the overcoat and mackinaw, taking into consideration the fact that the knitted cap is to be worn under the helmet liner (without the cloth hood) and the face toque is to be worn under the helmet liner with or without the cloth hood, depending on the severity of the weather. Extended field service tests of this headgear will be conducted by various army units this fall and winter.

Dial illumination, M4 director. The following brief discussion is published because reports from antiaircraft regiments have discussed deficiencies in the lighting of director dials.

a. Prior to the development of the Director M3, it was decided that no electric illumination would be provided for director dials and that illlumination of dials and pointers required for normal operation would be provided by the use of luminous paint.

b. At the time the Director M4 was designed, the use at some future time of a deflection sighting system on the guns was anticipated. With this in view, lateral and vertical deflection scales were provided on the director. Since it was impracticable to illuminate the deflection scales by the use of luminous paint, one electric lamp was provided for each deflection scale. The lamps are placed in a circuit which is separate from the telescope reticle lighting circuit and are controlled by a separate switch. Illumination which these two lamps provide for other scales is incidental.

c. Scales or dials which are used to check orientation and synchronism, determine trial fire data, or require reading in case of failure of the data transmission system require flashlight illumination at infrequent intervals. Most of these scales and dials are set so close to the side cover plates that modifications would be required in order to provide illumination by lamps mounted inside the director.

Railway artillery equipment. The Board recently completed a study of the organic rolling stock and other equipment, exclusive of armament, which it is believed should be provided for units of railway artillery. Some of the items of rolling stock, as provided in current tables of organization, are insufficient as to numbers for the needs of the battery. A large quantity of material such as portable towers, rails, ties, switches, frays, fish plates and track tools, in addition to normal organization equipment, are required for the fulfillment of the mission of railway artillery.

The Board concluded that:

a. The following items should be assigned *each firing battery* of 8-inch railway artillery:

	Remarks
(1) Two box cars (tools and railway stores);	(one car added)
(2) One fire control car;	(no change)
(3) One flat car per gun;	(this type is added)
(4) One kitchen car;	(type, only, changed)
(5) One tank car, water;	(no change)
(6) Four guns, 8-inch railway;	(no change)

b. The following items of railway equipment should be assigned to each railway *battalion headquarters battery:*

	Remarks
(1) One box car, railway stores;	(no change)
(2) One fire control car;	(no change)
(3) One flat car;	(this type is added)
(4) One kitchen car;	(type, only, changed)
(5) One locomotive, diesel-electric;	(no change)
(6) One tank car, fuel oil;	(this item is added)
(7) Twelve ammunition cars;	(4 ammunition cars added)

c. The following items of rolling equipment should be assigned to each railway *regimental headquarters battery:*

	Remarks
(1) One box car, railway stores;	(no change)
(2) One fire control car;	(no change)
(3) One kitchen car;	(type, only, changed)
(4) One tank car;	(no change)

d. The ammunition and fire control cars should be modified box cars.

e. The kitchen cars should be modified commercial baggage-express cars.

f. The flat (or gondola) box cars and tank cars may be of standard commercial design.

Results of target practice. The Board has prepared the draft copy of a Coast Artillery Memorandum, "Results of Target Practice," based on reports received prior to July 1, 1941. After approval by the Chief of Coast Artillery, this memorandum will be printed and distributed by the Coast Artillery School. The form will be similar to that of Coast Artillery Memorandum No. 21, except that the memorandum will be published as an information bulletin and will be in two parts. The first part will cover only the seacoast target practices

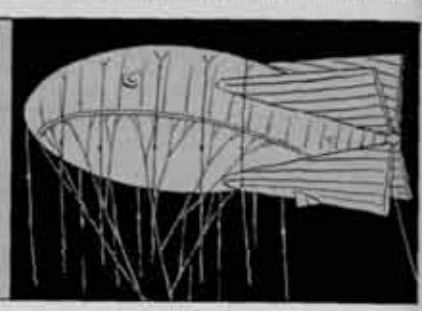
and the second part will deal with the antiaircraft target practices.

Firing Tables 37-C-2. Photostat copies of these firing tables have been received at the Board. These tables are an extension of Firing Tables 37-C-1, and contain data for firing the one-pounder subcaliber tube at ranges up to 5,000 yards. Firing Tables 37-C-1 do not contain data for ranges beyond 3,500 yards. The following data, extracted from Firing Tables 37-C-2, indicate the quadrant elevations required at the extended ranges:

Range	*Quadrant Elevation*
4,000 yards	14°49′
4,500 yards	20°04′
5,000 yards	27°53′

The extended ranges obtainable for subcaliber firing will depend upon the maximum elevation of the gun in which the subcaliber tube is mounted. Fire control charts and scales and elevation tables for graduating range drums, based on Firing Tables 37-C-2, may be obtained from the Coast Artillery Board.

Barrage Balloon Board



The Barrage Balloon Board will welcome constructive proposals from anyone whether or not a member of the service, pertaining to subject matter that may properly be studied by the Board. Communications should be addressed to the President, Barrage Balloon Board, Camp Davis, N. C.

COLONEL ROBERT ARTHUR
Commanding Barrage Balloon Training Center
MAJOR JOHN J. JOHNSON, C.A.C., *President*
MAJOR SAMUEL T. MOORE, A.C. CAPTAIN OSWALD H. MILMORE, C.A.C.

The subject of barrage balloons is the latest challenge to the versatility of the coast artilleryman. This new link in our antiaircraft defense was recently transferred to this branch from the Air Corps, which remains the supply agency for balloon material.

The Barrage Balloon Board was activated in June, 1941, to study the various problems connected with the development of barrage balloons. It is attempting to take full advantage of recent foreign experience and of the work of the Air Corps, and to adapt their developments to the peculiar requirements of the Coast Artillery. Valuable assistance is being given it by Lieutenant Colonel Clarence B. Lober, Air Corps, who, although a member of the Matériel and Supply Division of the Air Corps, is spending a part of his time as a member of the Board.

Troop requirements for tests are provided by the 301st Coast Artillery Barrage Balloon Battalion, also stationed at Camp Davis, North Carolina.

It is intended in the future to publish the activities of the Barrage Balloon Board in this column under three headings, viz., *New Projects, Projects Under Consideration,* and *Projects Completed.* All projects reported on at this time being new, the first of these classes will be omitted in this first report.

PROJECTS UNDER CONSIDERATION

Tables of Organization for Units of a Separate Coast Artillery Barrage Balloon Battalion. A study of the personnel required to service barrage balloons and of the organization of tactical units was undertaken, for the purpose of determining whether the existing tables of organization, T/O 4-315 to 4-317, incl., should be revised.

Tables of Organization for a Coast Artillery Barrage Balloon Regiment. The desirability of organizing barrage balloon regiments to provide for tactical and technical control and supply of several barrage balloon battalions, and the proper organization of such a regiment are being studied.

Tests on Neoprene-Coated Balloon Fabrics. Records of the durability and permeability of the envelopes of balloons constructed of neoprene-coated fabrics under service conditions are being kept. It is further contemplated to operate these balloons at extremely low and extremely high temperature conditions with the purpose of determining the materials best adapted for various climatic conditions.

Comparative Tests of Balloon Fabrics. Various balloon fabrics which are received from time to time are given service tests to find their suitability for use in balloon envelopes.

Coast Artillery Field Manual on Service of the Balloon, Low Altitude. This field manual, prescribing the service of low altitude balloons (i.e., balloons flying at altitudes below 7,000 feet) is nearing completion and will soon be published in tentative form.

Coast Artillery Field Manual on Organization and Tactics, Barrage Balloon. A manual on the tactical organization and employment of barrage balloon units is being prepared in collaboration with the staff of the Barrage Balloon School.

Gunners' Instruction Manuals. Gunners' Instruction Manuals covering subjects required of members of barrage balloon units are being prepared.

Balloon Type. A study of the characteristics of various types of balloons under different conditions is in progress. It is hoped to determine whether the dilatable or the ballonet type is better adapted for barrage balloon work, or the conditions for which each type is best suited.

Auxiliary Truck Winch for Loading Balloon Winch. An auxiliary winch to be installed in a truck for loading and unloading the balloon winch is being studied.

Skids for Loading Balloon Winch. The requirements for skids to load and unload the balloon winch from the rear of a truck are being determined.

Marine Handling Equipment. Standards and characteristics of equipment for flying barrage balloons over water areas are being studied.

Gas Release Device. A device for operating the rip cord of the balloon in the event of a breakaway is necessary to cause the balloon to descend to earth promptly and avoid damage to ground installations by dragging the cable. Various proposals for effecting this object are under consideration.

Test of Lightning Protective Measures. The necessity for lightning protective measures, as well as for means to lead off static electricity, and the types best adapted for barrage balloons are being determined from field operations.

Ratio of High to Low Altitude Balloons. This, an essentially tactical study, has for its object the determination of the ratio of high to low altitude balloons to be employed. Ancillary thereto, the possibility of using extremely low altitude balloons will be considered.

Number of Mobile Balloons. The number of mobile barrage balloon units, i.e., units provided with mobile winches, and with additional motor equipment to effect full tactical mobility, is being considered.

Tables of Basic Allowances for Barrage Balloon Units. Existing tentative tables of basic allowances for barrage balloon units are being examined critically in the light of experiences to determine their adequacy and any necessity for changes.

Cage for Protecting Winch Operator. The present balloon winch does not provide overhead cover for the winch operator. The necessity for such a cage to protect the operator from the falling cable in the event of a breakaway and its characteristics are being studied.

Forms for Records. Various forms for reporting barrage balloon flights have been prepared and are being distributed in tentative form. It is intended to revise these forms in the light of actual use in the field for adoption as barrage balloon forms.

PROJECT COMPLETED

Revision of Coast Artillery Field Manual 4-150, Examination for Gunners. It was recommended that this field manual be revised by adding thereto several sections prescribing the subjects in which personnel assigned to barrage balloon units should be examined.

The best information will be of no use if it arrives too late at the headquarters for which it is intended.—*Field Service Regulations.*

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

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

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

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

News and Comment

Knox Awards Suspended

For the duration of the emergency, there will be no awards of the Knox Medal or the Knox Trophy to Coast Artillery enlisted men or units. The Knox Medal award was suspended because the classes at the Coast Artillery School are now so large, and the courses so short, that it would be impossible for the School authorities to observe each student to the degree necessary to make a fair choice in the designation of the medal winner. As for the trophy, batteries which have felt most heavily the disorganization due to supplying cadres and recent changes of station would not have an equal opportunity with other organizations to make good target-practice scores.

The Loyal Legion

Your JOURNAL's ability to serve the Coast Artillery Corps, and its prestige in the field of service magazines, depends very largely on its circulation. The economic principle of decreasing costs, for one thing, presents itself in magazine publishing to an astonishing extent.

The COAST ARTILLERY JOURNAL's circulation curve has been climbing upward steadily—but perhaps not in proportion to the rate of expansion of the Corps. Several loyal and interested officers and units have done even more than their share to boost The JOURNAL's circulation, and it is fitting that their efforts should be mentioned.

The 202d Coast Artillery, at Fort Bliss, has been a 100% regiment for five consecutive years. Lieutenant Colonel Edward A. McTamaney has recently sent forward fifty-two subscriptions to maintain his unit's gratifying record of loyalty to The JOURNAL.

The 245th Coast Artillery, at Fort Hancock, is another unit that makes editing The JOURNAL a pleasant assignment. Captain Henry R. Johnson forwarded eighty-seven subscriptions to maintain the regiment's 100% record which has been kept up for several years. Colonel Gleim's New Yorkers consistently have supported the magazine of the Corps.

Among the individual officer missionaries in the field, a noteworthy feat of salesmanship was performed by Lieutenant Colonel Louis H. Thompson, who collected ninety-five individual subscriptions at Camp Davis. Without the goal of a 100% unit or the competition of any other pacemaker, Colonel Thompson went ahead and gathered up subscriptions—a feat like that deserves mention.

Lieutenant Colonel Kenyon P. Flagg forwarded forty subscriptions from the 209th Coast Artillery at Camp

Stewart. This brings the 209th very close to the ranks of the 100% regiments.

Lieutenant Colonel Arthur L. Warren, of the 18th Coast Artillery, transmitted four subscriptions from newly-joined officers as one of his last acts before leaving that regiment for Camp Wallace. The 18th, with these four subscriptions, keeps its ranking among the 100% regiments.

Others, too, have given The JOURNAL aid beyond the call of duty. We pledge ourselves to mention these loyal supporters with a bit more regularity than we have done in the past.

Fort Miles

The Coast Artillery fort guarding the mouth of the Delaware Bay at Cape Henlopen, Delaware, has been named Fort Miles in honor of the late Lieutenant General Nelson Appleton Miles, Commanding General of the Army from 1895 to 1903.

A part of the Harbor Defenses of the Delaware River, the fort is in the process of being enlarged. The grounds necessary for its development have been acquired and expansion of the garrison has begun. The original reservation in this section of Sussex County was ceded to the United States in 1873.

Information concerning the fortifications, or the complement of men to man them was withheld by the War Department.

General Miles died in 1925.

Army Extension Courses

Army extension courses have been suspended during the period of the present emergency for practically all officers who are on extended active duty.

Although designed particularly for instruction of Reserve officers, the courses are also taken by many officers of the Regular Army and the National Guard. In the past they have also been prescribed for graduates of the Citizens' Military Training Camps as a qualification for a commission as second lieutenant.

Under the new policy a certificate of capacity will be granted to all Reserve officers who complete one year of extended active duty. This duty need not be continuous. Lieutenants and captains must have a minimum efficiency rating of "very satisfactory" and majors and lieutenant colonels must be rated "excellent" to be eligible for a certificate.

Officers who believe themselves qualified for a certificate of capacity under this new policy may apply for it through their immediate superiors, who will make recommendations in each case to the Corps Area or Department commanders who issue the certificates. The applications for certificates must be supported by efficiency reports.

A Reserve officer who has not been ordered to extended active duty, or one who has returned to an inactive status without the prescribed minimum efficiency ratings, will be allowed to qualify for a certificate of capacity under the extension school system.

Reserve officers who have served on extended active duty since January 1, 1940, or who are ordered to such duty after August 15, 1941, may enroll for courses in which they are interested as a means of increasing their military knowledge. However, they will receive no credit for such work unless their time in grade is completed during their extended active duty.

R & B

The little symbol at the head of this item has performed wonders in assisting the circulation manager of The JOURNAL to "keep 'em reading."

When your subscription order form carries the notation to *Renew and Bill*, both the reader and The JOURNAL benefit. The reader misses no issues of the magazine—his files are complete. He does not have to renew his subscription each year—the subscription goes on without action on his part, except for mailing a check. *And he may still exercise the privilege of stopping* The JOURNAL if it should become necessary.

As for The JOURNAL, the savings in postage, printing, and clerical expense make this R & B feature an important source of economy. And The JOURNAL must practice economy if we are to maintain the high quality of the publication.

The next time you fill out a subscription order form, be sure to check it R & B. Join the 60% of JOURNAL subscribers who are the mainstays of The JOURNAL and the United States Coast Artillery Association.

Antiaircraft Center Planned

The War Department announced the award of architectural-engineering contract for design and, at the option of the government, supervision of construction of a complete camp for an antiaircraft firing center to accommodate approximately 15,000 troops at Venice Beach, Florida. The estimated cost of construction covered by this engineering contract is $11,400,000.

This is a part of the pre-planning program which is providing for selection of sites and necessary engineering work preliminary to construction so that in the event of expansion of the Army, construction can start immediately.

This site is located on the west coast of Florida in Sarasota County, south of Sarasota, and will comprise an area of approximately 3,500 acres. There are no funds available at the present time for either construction or acquisition of land.

Do you notify The JOURNAL promptly when your address changes?

Coast Artillery Activities

OFFICE OF CHIEF OF COAST ARTILLERY

Chief of Coast Artillery
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LIEUTENANT COLONEL H. N. HERRICK

Assistant Executive
LIEUTENANT COLONEL J. D. MOSS

Personnel
LIEUTENANT COLONEL F. E. EMERY, JR.

Matériel
LIEUTENANT COLONEL D. W. HICKEY, JR.

Planning
LIEUTENANT COLONEL C. E. COTTER

Organization and Training
LIEUTENANT COLONEL G. W. RICKER

Fiscal
LIEUTENANT COLONEL L. L. DAVIS

Coast Artillery Journal
LIEUTENANT COLONEL W. S. PHILLIPS
CAPTAIN A. SYMONS

Third Coast Artillery District

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

By Major Franklin W. Reese

This has been a busy summer for commands located in the Third Coast Artillery District, and since our last news letter, nearly all of the individual batteries have completed their annual target practices in addition to routine training, troop requirements for the Coast Artillery School, and specialist training.

Official scores of many of the units have not yet come in, and in many instances the record shoots were hampered by the greatly increased amount of shipping in Hampton Roads resulting from the present emergency conditions. However, very satisfactory results were obtained in most instances and Brigadier General Rollin L. Tilton, District Commander, commended the advanced and well developed state of training which was indicated by the manner in which enlisted and officer personnel operated under target practice conditions. The "kinks" are fast becoming a thing of the past.

Two National Guard regiments of the Harbor Defenses of Chesapeake Bay, the 244th C.A. (New York) at Camp Pendleton, and the 246th C.A. (Virginia) at Fort Story and Fort Monroe round out a year of training in September. They have both established enviable records and have become well trained, hard hitting fighting forces in the peak of condition.

Morale of all organizations in the District is unquestionably high as indicated by the responsiveness of the men as a whole to training requirements and by the reports of all commanders. The 2d C.A. was selected by the District as the best regular army regiment of the command and the 244th as the best National Guard regiment for the last four month period.

At Camp Pendleton motor convoys high-lighted the 244th Coast Artillery's training program during the last two months. Every week was marked by its over

Pickett's charge being reënacted at Bloody Angle, Gettysburg National Battlefield, by descendants of soldiers who actually participated in the Civil War. The new "Rebels" and "Yanks" are members of the 71st C.A. (AA). The picture was taken July 2d.

night tactical trips, gun emplacement bivouacs, blackout convoys, and battalion trips. Most notable of all was their 600 mile, 270 vehicle convoy to the Blue Ridge Mountains and along Skyline Drive, with Lieutenant Colonel E. T. H. Colvin as march commander. Next followed a 540 mile trek to Staunton River State Park.

A unique feature of both convoys was the quick refueling system devised by Captain Mario Gemincani, regimental supply officer. A pipe with seven outlets for hoses enabled seven trucks to refuel from one gasoline truck, equipped with power pump, at the same time and slashed 80 per cent off the time ordinarily required to refuel.

Also at Camp Pendleton, the 57th Coast Artillery has been busy training six new batteries added to the regiment, completing their target practices, and preparing for coming maneuvers.

The latter part of July the first replacements came from Fort Eustis totaling 821 men and were assigned as follows: 170 to the 57th, 345 to the 244th, 36 to the 2d, 94 to the 246th, 9 to the USAMP, 20 to Headquarters Third Coast Artillery District, and 147 to the 74th.

CPX drills and exercises have become routine training for the Harbor Defense elements. A combined CPX of the Chesapeake Bay Sector and the Harbor Defenses of Chesapeake Bay was held in July. All defenses were organized under the command of General Tilton with the command post at Fort Story. The problem was prepared under the supervision of Colonel Frederic A. Price, executive officer of the Harbor Defenses of Chesapeake Bay, with a group of student officers in a special course at the Coast Artillery School serving as umpires.

Colonel Avery J. Cooper, representing Headquarters First Army, in the rôle of observer, stated, "I am extremely pleased and more than satisfied with the excellent and efficient manner in which this CPX was handled by all concerned. The smoothness of the functioning of chains of command, communications, and message centers, showed a splendid coördination of all units in the achievement of their objectives."

August marked the finishing of one construction project and the inception of another. Occupancy of the Fort Monroe 90-unit Housing project known as "College Court" on August 15th has done much to alleviate the quarters problem for non-commissioned officers of the first three grades. The other problem concerns the acute shortage of available land area for training at Fort Monroe, and actual operations got under way the latter part of August on the large proposed fill of a part of Mill Creek. When completed an additional fifty-five to seventy-three acres will have been added to Fort Monroe.

At Fort Story Colonel Reginald B. Cocroft, commanding officer of the post, has been ordered to the barrage balloon training center, Camp Davis, in September. The name of the new post commander has not been announced.

Mobility has become the order of the day for the 71st Coast Artillery (AA). Unique and historical among their many convoys and maneuvers was a 700 mile jaunt the regiment made to Gettysburg, Pa. "Bloody Angle" on the National Battlefield was suddenly roused from its 78-year sleep on the morning of July 2 by the noise of charging feet mingled with the

Night antiaircraft firing at Fort Monroe by Battery C, 2d Coast Artillery

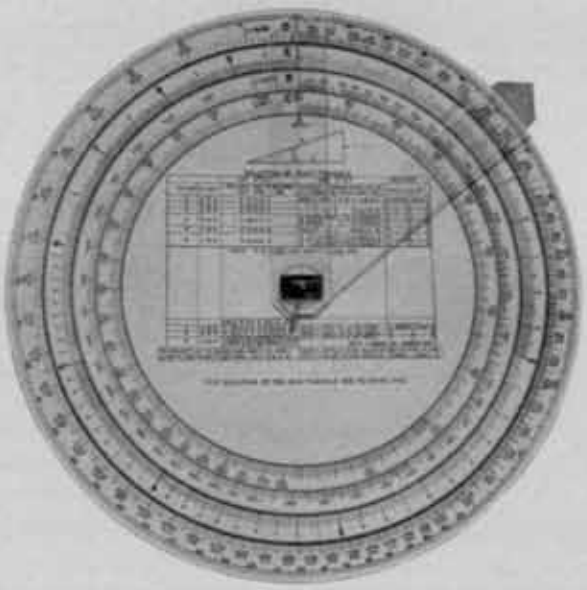
wild "Rebel" yell as the descendants of Confederate and Union soldiers, members of the 71st Coast Artillery, reënacted Pickett's charge and repulsion.

The previous Sunday over 5,000 persons, families, relatives and parents of the soldiers in the regiment visited the camp-site at the special invitation, of Lieutenant Colonel E. W. Timberlake, issued through the newspapers. Soldiers and their guests consumed approximately a ton and a half of chicken among other things, and after dinner 800 of the soldiers were permitted to return to their homes on 48 hour passes.

The first of August the 71st Coast Artillery joined the "Blue" forces of the 44th Division in war games on the A. P. Hill Military Reservation in Caroline County. Shortly following the maneuver, a letter to Colonel Timberlake from Lieutenant Colonel D. R. Alfonte, acting chief of staff, stated: "General Clifford R. Powell has asked me to express to you his appreciation for the fine part taken by your regiment in the maneuvers of July 31-August 1. It is hoped that the 44th Division will have more associations with the splendid regiment which you command."

In spite of the treacherous whims of the heavy surf at Fort Story's bathing beach an enviable safety record has been set up this past summer—not without its heroes though—most notable of whom were Sergeant Ernest F. Zinggler, Corporals Charles W. Hare, John W. Johnson, and Private Lewis M. Maisel, who saved three young girls from probable drowning when a strong undertow carried them out beyond their depth, July 9.

If practice makes perfect Battery F of the 246th Coast Artillery, stationed at Fort Monroe should be right up at the top—and they are! Over 700,000 rounds of ammunition have been fired by the battery during the past summer on missions for the Coast Artillery School and the Coast Artillery Board. Practically all antiaircraft calibers were fired.



The Coast Artillery School

BRIGADIER GENERAL FRANK S. CLARK, *Commandant*

Since our letter for the July-August issue of THE JOURNAL, five groups of Refresher Course students have entered the School. In one are enrolled the graduates of the Class of 1941, United States Military Academy, assigned to the Coast Artillery Corps. Each group numbers approximately one hundred student officers. Four groups are in the antiaircraft course, and one in the seacoast course.

In addition, four groups have graduated, three in antiaircraft artillery; one in seacoast artillery. In all, three hundred and ninety-five student officers have received certificates of graduation. One group was composed largely of field officers, a second of recent R.O.T.C. graduates, and a third of a combination of the two.

Meanwhile, two groups of student officers, Stereoscopic Height Finder Course, have entered and graduated. Certificates were awarded to nine. A group of twenty began the course in Submarine Mining in mid-July, and more recently a group of seven to pursue the second of the courses given for the Army Mine Planter Service.

In the Department of Enlisted Specialists, four graduations have occurred, a total of two hundred and thirty-two students receiving certificates of graduation. Ninety-seven hailed from the Regular Army; one hundred and thirty-five from the National Guard.

Representative James G. Scrugham of Nevada left Fort Monroe on August first, after nearly a week spent in inspecting the educational facilities of the Coast Artillery School. His week served as a tour of inactive duty in his reserve rank as Lieutenant Colonel, CAC.

During his week at the School, Congressman Scrugham was "practically a student," for he coupled with his inspection the opportunity to receive instruction. Immediately upon arrival at Fort Monroe, the Congressman donned his uniform and began an itinerary similar to the everyday life of the student officers. He sat in class sessions, and went into the field with other students to get actual experience.

At the graduation exercises for a class of enlisted specialists, Congressman Scrugham personally awarded certificates to half a dozen national guardsmen from his home state.

Lieutenant Colonel Ernest W. Moore, Majors Augustus S. Hocker, Walter F. Parker, Donald G. Kimball, and Charles H. Sargent, Jr., and Captain True B. Eveleth, who completed a Refresher Course at the Coast Artillery School on August thirtieth, have been held over for one week to assist in the preparation of a Command Post Exercise for the Harbor Defenses of Chesapeake Bay. Upon completion of this duty, these officers will return to their several stations in New England.

Lieutenant Colonel Harry T. Adkins, and Captains John W. Squire, Joseph L. Shoemaker, Jr., and Frank R. Sack, who also completed the same course of instruction, have been detailed as umpires in the Sector CPX, First Coast Artillery District. Colonel Adkins, Captain Squire, and Captain Shoemaker will report at Camp Edwards, Massachusetts, and Captain Sack at the Harbor Defenses of Boston.

The increased tempo and scope of instruction brought about by the present emergency have increased the faculty and staff of the Coast Artillery School from a strength of twenty-eight to one of one hundred and fifty-one. About a fourth are Regular Officers, the remainder being Reserve Officers, with the exception of five who are officers of the National Guard.

The first Officer Candidate Course ends on October third. A second course begins immediately upon completion of the first. Plans are in a formative stage for doubling the size of the third and subsequent courses.

Arriving by early morning boat from Washington and leaving by plane from Norfolk the same evening, Major General Joseph A. Green, U.S.A., Chief of Coast Artillery, paid a flying visit to the Coast Artillery School.

While at Fort Monroe, General Green also visited the Coast Artillery Board and the Submarine Mine Depot.

A group of twelve Latin American officers are now at the Coast Artillery School, pursuing the Refresher Courses.

From the Brazilian, Cuban, Mexican, and Uruguayan armies, the officers arrived in the United States during the early part of August, and came to Fort Monroe at once. Some of these officers are now enrolled in Group XXV, and others in Group XXVI.

Upon completion of their studies at the School, it is expected that these officers will be stationed with regiments in the northeastern United States for a period of field service.

The group includes four officers from Brazil, one from Cuba, five from Mexico, and two from Uruguay. While at Fort Monroe, this group will be under the guidance of Captain Donald B. Webber, who acts as tutor and interpreter.

The Brazilian group is composed of Captains Abda Araguaryno dos Reis, Manoel Campos Assumpcao, Aguinaldo Olivera de Almeida, and Nelson Baeta de Faria. All are graduates of the Brazilian Military Academy. Captain Abda is taking the antiaircraft course; Captains Assumpcao, Aguinaldo, and Baeta are all taking the course in seacoast artillery.

Cuba has a single representative, Lieutenant Francisco Llerena y Sabio, who has received several medals in recognition of his services with the International Red Cross in emergencies in his own country and in the war in Spain. Lieutenant Sabio will take both the seacoast and antiaircraft artillery courses.

Mexico is represented by Captains Miguel Salas Cacho, Luis G. Bolado Chavanez, and Salvador Bravo de la Torre, and Lieutenants Carlos Fabre Banos and Ignacio Salinas Ramos. All are graduates of the Mexican Military College.

All except Captain Bravo are officers of Field Artillery; Captain Bravo is an Ordnance officer. Captains Bolado and Bravo are taking the course in seacoast artillery; and Captain Cacho, and Lieutenants Banos and Ramos, the course in antiaircraft artillery.

The Signal Corps Camera Unit, temporarily at the School, is now working on a training film for the emplacement and march order of the 90-mm. Antiaircraft Gun.

Major Austin M. Wilson, Jr., of the Department of Training Publications, recently returned from Hollywood, California, where he had been on temporary duty concerned with the filming of training pictures. While in Hollywood, Major Wilson worked with the Signal Corps Liaison Officer, in coöperation with the Research Council, Academy of Motion Picture Arts and Sciences.

Major Wilson supervised the filming of the 37-mm. Gun Battery by Warner Brothers, the Antiaircraft Searchlight Battery by Universal Studios, and the Caliber .50 Antiaircraft Machine Gun Battery by the Sol Lesser Company.

Representing the Coast Artillery School at a conference of representatives of the various Armies, Corps, Divisions and Service Schools, Lieutenant Colonel Henry F. Grimm, Director of the Department of Tactics, was in Washington, D. C., for a week during the middle of July. The conference was called with a view to developing a doctrine for the employment of antitank units based on approved principles for employing mechanized units.

If our soldiers are not overburdened with money, it is not because they have a distaste for riches; if their lives are not unduly long, it is not because they are disinclined to longevity.—Sun Tzu.

First Coast Artillery District

MAJOR GENERAL THOMAS A. TERRY, *Commanding*

By Captain George R. Carey

The Harbor Defenses of Portland have been earnestly plugging away during the humid days of summer. Battery D of the 8th Coast Artillery has been energetically blasting away with 155's and turned in a very creditable score. Then, teaming up with Battery C and Battery I of the 240th Coast Artillery, they annihilated the Black forces composed of a platoon from Battery K of the 240th, which attempted a landing raid at Cape Elizabeth. Ingenuity came to the fore when, with the use of four 37-mm. guns which were designed for use as sub-caliber on the 155-mm. GPF's and four old 1916 37-mm. gun mounts, two smoothly functioning anti-tank units emerged.

Recreation displaced the serious business of training when the commissioned officers of the Harbor held a clam bake and outing at Fort McKinley. The enlisted men staged a vaudeville show during the afternoon and festivities continued with tennis, swimming and a round robin softball game.

Pageantry was the order of the day when on August 1, the 23rd Coast Artillery, Harbor Defenses of New Bedford, held Organization Day in celebration of its first anniversary. A colorful parade, short speeches by Lieutenant Colonel C. J. Herzer, Regimental Commander, followed by the Mayor of New Bedford, sports events —and as a fitting climax, a dance for the enlisted men. Other activities in the Harbor included the completion of service practice by Battery C of the 23rd Coast Artillery, the additional construction of two quartermaster buildings and a storehouse for ordnance activities.

The 36th Coast Artillery Brigade (AA) at Camp Edwards, Massachusetts, has continued its convoy training with trips of 1,000 miles or more being taken by each of the component regiments. This convoy training has prepared the outfits for maneuvers, the 102nd Separate Battalion and the 68th Coast Artillery (AA) being assigned temporarily to the VI Army Corps for early September maneuvers. These units are scheduled to participate in the First Army maneuvers in the South during October and November.

With summer drawing to a close, the Harbor Defenses of Boston can look back to a period of intensive activity. It has been many years since the guns of Boston Harbor have boomed so continuously. In the past few months, five 12-inch, four 6-inch, one 3-inch, and two submarine mine practices have been conducted.

On Monday, July 21, 1941, while planting a firing group of 19 mines for Battery A, 9th Coast Artillery, Boston Harbor, the U.S.A.M.P. *Baird* established what is believed to be a record for planting a group of mines. The planting time was eighty-nine minutes. There was no time out for any cause, nor were there penalties of any kind.

Somewhat handicapped by weather and shipping conditions, the harbor defenses are biding their time until they complete their antiaircraft, searchlight, and 155-mm. gun practices so they may enter into the next stage of their training program.

For the first time since its induction into the Federal Service last September, the 241st Regiment of the Harbor Defenses of Boston assembled at Regimental Headquarters, Fort Andrews, for a colorful review. The occasion was the awarding of a streamer by the District Commander, Major General Thomas A. Terry, to the 241st, as the best National Guard Harbor Defense Regiment in the District for the second quarter of the year 1941. Brigadier General Kenneth T. Blood decorated the colors in General Terry's name.

As a deterrent to the prying eyes of those engaged in espionage or the unwelcome hands of saboteurs, a fencing and lighting project has been started at Forts Constitution, Stark, Foster, and Camp Langdon of the Harbor Defenses of Portsmouth. Fortifications, ordnance warehouses, motor parks, seacoast batteries, magazines, and water towers will be fenced and lighted, as will the entire outside boundary of each of the four posts where the 22nd Coast Artillery is garrisoned under the command of Colonel Walter K. Dunn.

The best Harbor Defense in the First Coast Artillery District is the proud distinction that the Harbor Defenses of Long Island Sound now holds. The honor was bestowed upon the Harbor by General Terry, represented by Brigadier General Ralph E. Haines, who presented the streamer in a colorful field ceremony that was attended by all the troops of the Harbor Defenses. To attend the ceremony, many of the troops had to be transported by boat in the space of a few short hours to the scene of the presentation. The transportation problem was met efficiently and not a hitch was in evidence.

The 11th Coast Artillery of the Harbor Defenses of Long Island Sound is stepping high. Its colors were decorated with a streamer designating it as the best Regular Army Regiment in the First Coast Artillery District during the period April to July, 1941.

The Harbor Defenses of Narragansett Bay have been thundering away at targets and plodding through Command Post Exercises this past summer in preparation for forthcoming District and Army exercises. From all reports the results are excellent.

El Morro, the Post of San Juan, and part of San Juan

Official Air Corps Photograph

Puerto Rico Coast Artillery Command

COLONEL C. THOMAS-STAHLE, *Commanding*

By Lieutenant Noel A. Iverson

The harbor defense troops of San Juan commanded by Lieutenant Colonel B. L. Flanigen, tested men and machines for eight days last month when a composite battery under the command of Captain M. M. Simons made a reconnaissance convoy tour of the island of Puerto Rico.

The composite battery making up the convoy consisted of ten officers and eighty-four men, and was divided into a light column and a heavy column. The light column contained nine 2½ ton cargo trucks with trailers, one ambulance and one reconnaissance car. The 2½ ton trucks carried the radio section, the kitchen section and the master gunner section. The personnel of the latter checked data of existing gun positions and proposed new ones.

The heavy column contained four tractor and 155-mm. gun units, two 2½ ton cargo trucks carrying the necessary fuel oil, gasoline and maintenance equipment, four reconnaissance cars, three of which were used by observing officers and one 7½ ton prime mover coupled to a 16-ton trailer on which a spare tractor was carried.

In operation of the convoy the heavy column always moved out first at a scheduled time. As soon as the stopping place or bivouac area was policed the light column got under way, and passed the heavy column usually an hour or so out. They proceeded on ahead a distance such that the heavy column could catch up to them by noon. Here they halted and had the noon meal waiting when the heavy column arrived. In the afternoon the process was repeated except the light column would go into the predetermined bivouac area and prepare the camp as well as the evening meal. The light column moved rapidly and without mishap throughout the entire trip.

The heavy column experienced much more difficulty than did the light column, although the former had a police escort practically the entire distance. Most of this difficulty can be laid to the narrow highways or carreteras, especially in the towns and mountains. As an additional aid in getting through the towns one of the reconnaissance cars would go ahead of the column and arrange with the local police to have the route through the town cleared of parked cars and carts. With these precautions traffic accidents were forestalled; however, incidents did occur that are worthy of mention.

On the first day out the trailer carrying the spare tractor was rendered unfit for further use. The trailer was being moved out from the bivouac area onto the road and in the process the front wheel dolly was pulled loose. Rather than risk a breakdown later on it was decided to remove the tractor and send the prime mover and trailer back to Fort Buchanan. The single tractor was run along at the rear of the gun column for the rest of the trip.

The second day out an incident occurred that ap-

peared at first to be very serious. The column had negotiated the mountains without mishap and was moving along on a straight level stretch of highway, one of the few in the island, when the treads on one of the tractors froze. Upon investigation it was found that a retainer bolt in the tread tension spring had failed due to fatigue. It would have required a fourteen ton press to compress the spring and insert a new bolt, but by readjusting and loosening the spring caps and the tension in the spring, the tread was released sufficiently to allow the tractor to proceed. About an hour later the same thing happened to the spare tractor. The treads on the remaining tractors were loosened before starting out again, and the broken retainer bolt trouble disappeared.

An amusing but near serious incident occurred on the Mayaguez-Borinquen Field leg of the trip. The existing bridge over the Rio Grande de Anasco River will not take the load of a gun and tractor together. In fact the Engineers said there was some doubt as to whether it would take either a gun or a tractor alone so they built a pontoon bridge. When the heavy column arrived at the bridge Captain Simons sent the spare tractor across first as a test. The tractor traversed three-quarters of the bridge successfully, but just as the driver accelerated in order to get up the slight incline on the far side the approach began to give way, and before the tractor could be stopped the entire approach pulled away. It was only because of the expertness of the driver that the tractor was prevented from falling in the river. The river was finally crossed by winching the guns one at a time across the regular bridge.

The last day the schedule called for a ninety mile stretch from Borinquen Field to Fort Buchanan, the starting point. It was still dark when the column reached Guajataca Gulch, a deep valley traversed by narrow twisting roads. The traffic was heavy with Publicos carrying workers to Borinquen Field. The tractors and guns had just started down the valley when a Publico failed to stop and pull over to the right. The leading tractor moved to its right but in the semi-darkness it got too far over and headed straight for the abrupt bank. The tractor started up this bank and before it could be stopped it had turned over on its side. Fortunately no one was hurt and the gun stayed upright although the draw bar was badly twisted. With one tractor pulling and another holding back, the over turned tractor was righted. It was none the worse for the accident and the march was resumed.

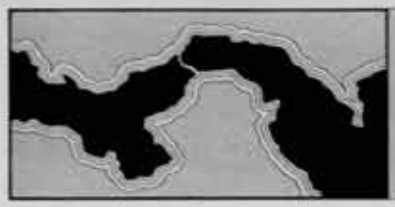
Statistically speaking, 282 miles were traveled in thirty-seven running hours for an average speed of 7.6 miles per hour. The poorest mileage was made on the first day when the average speed was six miles per hour, and the best mileage was made on the last day when the average speed was 9 miles per hour. A total of 745 gallons of fuel oil was used. This averages 160 gallons per tractor except for the spare which used 105 gallons. The fuel consumption per tractor per hour was 4.3 gallons.

This was neither the first nor the last convoy these troops will make while in Puerto Rico, but it is probably the most extensive as circumstances normally would not require that a complete circuit be made of the island in order to get to any gun position.

Replacements of personnel have been very few and far between. By the time this letter appears in print there will probably be almost no captains left in the outfit. However, every transport lately brings new equipment of one kind or another and no doubt new officers will be a part of some cargo soon.

The National Guard Antiaircraft troops have completed their target practice season and their gun batteries did as well or better than the regulars.

Seven officers of the National Guard have gone through the refresher course at the Coast Artillery School and feel that they learned a lot.



Panama Coast Artillery Command

MAJOR GENERAL WILLIAM E. SHEDD, *Commanding*

By Captain Franklin B. Reybold

In the March-April issue of The COAST ARTILLERY JOURNAL mention was made of the reorganization of the Panama Coast Artillery—the Command to consist of two brigades, each under the command of a brigadier general and each being made up of three regiments. This reorganization necessitated not only a shuffling of enlisted and commissioned personnel but also the appointment of two brigadier generals. The Panama Coast Artillery has undergone a complete change of command in addition to reorganization. Upon the departure of Major General Sanderford Jarman on August 4, the P.C.A.C. was temporarily commanded by Colonel E. E. Bennett, General Jarman, who has been in command of the P.C.A.C. since its organization in October, 1939, has been ordered to Camp Stewart, Georgia.

Many of the past outstanding accomplishments of the Panama Coast Artillery were due mainly to the aggressiveness and determination of its leader and "Top Soldier," General Jarman. His successor, however, Major General William E. Shedd, who assumed command of this organization on August 23, has a past record of an enviable type. Therefore with the arrival of Major General Shedd and the appointments of Brigadier Generals Oldfield and Meyer, the Panama Coast Artillery has completed its change of command and its reorganization. With the appointment of the two brigadier commanders, the concentration of command in geographical areas and greater decentralization will be more firmly established. This same concentration of command permits the accomplishment of more extensive training and, therefore, it might be well to discuss the type of training prevalent in the command under the new set-up.

With the constant influx of enlisted personnel who are not thoroughly trained in their branch it is necessary that intense training be given each man in an effort to prepare every individual for his assignment. The Recruit Training Center has received, trained, and sent out to duty many hundreds of men. This Recruit Center has been under the Command of Captain Lamar C. Ratcliffe since its organization in December, 1940. The men who have left the camp have made their mark and established themselves in every battery as definite assets and well-prepared soldiers.

Feeling that even though the fundamentals of military education had been taught to the enlisted men, a more far-reaching education would be of infinite importance, an Enlisted Specialists School was set up under Captain Marshall S. Carter. This school will enroll and instruct men along lines similar to the plan of the Coast Artillery School at Fort Monroe. Thus a man is enabled to receive an education of military value to him for the remainder of his career. Realizing the need for extensive training of enlisted personnel to replace those men who become due for return to the United States, and for those men who are required to fill the key positions of newly organized outfits, the C.A. Command has organized every practicable type of school for enlisted personnel. With this extensive training and the resultant necessity for constant work and long hours there comes the possibility of diseases and lack of recreation. These two problems, however, are well cared for.

Perhaps the most dreaded and most prevalent disease of tropical origin is malaria. Causing lost hours and long uncomfortable after-effects this disease was destined to have a definite undermining effect on the entire command. With the appointment of Captain Marshall N. Jensen as Command Surgeon a most serious drive was carried through in continuation of the battle initiated by all post Surgeons back in June, 1940. The results of this drive which started back in 1940 are shown more clearly by the comparison of Malarial rates as brought forward in the following table:

Post	Month	1940	1941	Month	1940	1941
Ft. Amador, C. Z.	June	62.7	5	July	103	28
Ft. Randolph, C. Z.	June	457	137	July	637	85
Ft. Sherman, C. Z.	June	274	135	July	258	77

The above figures are based on accurate data compiled by the Command Surgeon based on the number of cases per post per thousand for men actually in the field. Improved sanitary conditions and discipline are believed to be the main factors in the apparently successful battle against the dreaded mosquito.

For recreation we find that the men of the Coast Artillery have available to them almost every conceivable type of entertainment. Perhaps the latest and the most important type at present is the small C.A.C. radio network of P.C.A.C. and P.C.A.N. These diminutive stations started operation in earnest some four months ago with broadcasts of athletic events and news items. Finding that music and such other entertainment were fast becoming popular with the junglers Major General Jarman received permission from Lieutenant General Van Voorhis to broadcast such programs to all positions. Thereupon an effort was made to secure transcribed records of outstanding radio programs from the many large broadcasting systems in the United States. These programs were generously sent to the Command

by N.B.C., Federal Works Agency, and some radio stations of wide popularity. In addition, on September 11, N.B.C. will dedicate a half hour program over its large network to P.C.A.N., which will rebroadcast to the Coast Artillery here in Panama on this program. General Shedd, the new Commanding General, will greet his predecessor, General Jarman, and Brigadier General Edgerton, Governor of The Canal Zone, will speak on the part played by the Coast Artillery in Panama. As was predicted when first these stations started operation, broadcasts of events such as basketball games, boxing bouts, and amateur shows are becoming increasingly popular.

With the completion of the annual target practice for all batteries at Rio Hato, entertainment for the men is becoming a pressing problem. All target practices were most successful and many new angles on the firing of antiaircraft guns were brought to the foreground. The return of the last truck convoy with guns, equipment and personnel was successfully carried out August 27. The majority of seacoast batteries on the Isthmus have completed their annual practice and have to date fired several extremely successful shoots. In September a special mine practice will be held and, as usual, much attention will be focused upon the results of this practice.

In an effort to increase the recreational facilities for all positions and posts now that the annual target practices are over, the Command Morale Officer has instituted the system of Post Morale Committees. Each post committee is comprised of an enlisted man from each battery based at that post and in this way more direct information can be obtained as to the types of entertainment and recreation most desirable. Many valuable suggestions have been made and each is receiving due consideration from the Command Morale Committee, made up of all Morale Officers.

Fort Ontario

Fort Ontario, on the southern shore of beautiful Lake Ontario in northern New York and for the past 145 years a small Infantry Post, has now become a prominent Coast Artillery training center. Nationally acknowledged as the oldest continuously garrisoned Post in the United States, Fort Ontario has, during the past year, been expanded to accommodate a Coast Artillery regiment, where formerly it was the home of a battalion of the 28th Infantry.

Already the peaceful shores of Lake Ontario are resounding with the concussion of 3-inch antiaircraft guns and the cracking explosions of machine gun and rifle fire as the 369th Coast Artillery (AA) undergoes its first antiaircraft training. Formerly the 15th Infantry, famed colored New York National Guard regiment of the First World War days, the 369th was recently converted into an antiaircraft regiment and is now in training at Fort Ontario.

In the summer of 1940 plans were made to station the 369th Coast Artillery (AA) at Fort Ontario, situated in the City of Oswego, N. Y., and early last autumn construction of approximately seventy buildings to accommodate the regiment was begun. Aided by an unusually mild winter for this part of the country, the construction was completed well ahead of schedule.

On January 15, 1941, an advance detachment of 120 officers and men arrived to prepare for the arrival of the main body on January 22nd. On the cold winter morning of January 22nd, 1400 men of the regiment arrived by train to start a year's training as an antiaircraft regiment. Colonel Clarence Lininger, Cavalry, at that time Post Commander, personally welcomed Colonel Chauncey M. Hooper when the latter stepped off the train. The men soon made themselves completely at home in the warm barracks buildings which protected them from the cold winds blowing in from the lake.

During the cold winter months when the ground was almost continuously covered with a two foot blanket of snow, the regiment worked hard to learn the intricacies of antiaircraft technique. Despite the fact that no member of the regiment had ever had any previous Coast Artillery training, they tackled their new jobs with enthusiasm, and with the help of Lieutenant Colonel Robert J. VanBuskirk and Lieutenant Colonel Archibald D. Fisken, instructors assigned to the regiment for the training period, actual firing of antiaircraft weapons began early in July. Today the regiment is a trained antiaircraft unit, awaiting its chance to prove its worth.

In command of this Post since March 3, 1941, is Colonel Willis Shippam, who came to Fort Ontario from Corregidor in the Phillipines where he commanded the regiment which recently was awarded honorable mention in the Coast Artillery Association's contest for the famed Knox trophy.

And so today Fort Ontario, which for fifty years defended the British back in the 18th century, again takes a prominent position in national defense. Where once its soil was trod upon by such famous people as Governor Shirley, General Pepperell, the Marquis De Montcalm, General Amherst and Sir William Johnson, today it shakes beneath the weapons of modern warfare.

Corregidor

Brigadier General George F. Moore, *U. S. Army,*
Commanding Harbor Defenses of Manila and Subic Bays

By Lieutenant Burton R. Brown

Corregidor is now truly the "Isle of Man." When the USAT President Taft backed away from Pier 1 in Manila on July 16th, it carried with it the last of the few remaining dependents from Fort Mills. Among those sailing were Mrs. Paul D. Bunker and Mrs. John Lee Holcombe. Despedidas filled the last few days before the sailing and the usual serenade at Pier 1 sped the departing families on their way to the United States.

Before, during, and after the usual hustle of transport time, training has been carried on at increased pace. A training memorandum from Harbor Defenses Headquarters directed that there should be no rainy season schedule this year but the weather has not fully cooperated. As in past years, June and July have seen rains which have at times approached the status of torrents. However, training of all forms has been carried on as usual and, as a result, the garrison is equally at home pursuing any activity in the rain or sunshine, day or night. All organizations have stressed the training of the soldier as an individual as well as part of a team and the results are highly gratifying. Initiative, self-reliance, and coöperation have increased greatly. Rain is no longer an inconvenience, much less a hindrance to the command, whether it is engaged in Artillery work or in any one of the many other functions a soldier at Fort Mills is called upon to perform. Officers' schools have aided in filling up the already busy day, but the increased efficiency of both officers and enlisted men have made it well worth the time spent.

These Harbor Defenses were given a reminder of the records they must strive to meet when on June 18th Major General George Grunert, Commanding General of the Philippine Department, presented the United States Coast Artillery Association Trophy to Colonel Octave DeCarre, present commanding officer of the regiment at Fort Mills which had won the trophy during the target practice season of 1940. The regiment was commanded during the winning practice by Colonel Joseph F. Cottrell who is now the Executive Officer of the Harbor Defenses. General Grunert, in his presentation speech, commended the regiment for its fine display of training and added that he was proud to have in his command such an organization. He further called attention to the fact that this is not the first time that this trophy has rested with a regiment at Fort Mills. After the presentation, General Grunert with General Moore received the entire Fort Mills command in a garrison review. Too late for the Department Commander to commend the regiment personally, the news was received here that in this same competition in 1940 the regiment now commanded by Colonel John Lee Holcombe but then commanded by Colonel Willis Shippam, since returned to the United States, had won Honorable Mention. General Moore expressed the congratula-

A gun crew services its piece during a gas attack

tions of the Defenses to this pair of trophy winners.

After the review General Grunert spent several hours seeing evidence of the state of training of these Defenses, one of his most important posts. Among other things, he witnessed a gun crew working smoothly during a simulated gas attack and then entered the plotting room of the battery to watch the data being calculated and sent to the guns. After the drill and gas attack he watched a decontamination squad clear up the "gassed" area.

Naturally, with the loss of the ladies and the heavy schedule, social activities have dwindled. However, stag parties at the Corregidor Club have become bimonthly affairs. The West Point Class of 1938, of which there are, ominously, thirteen at Corregidor, joined with other classmates in Manila on June 14th to celebrate their promotion to First Lieutenants, Regular Army. Moreover, regimental parties are fast becoming popular.

Knowing well the results of "all work and no play," the schedule has included a great many athletic contests for both officers and men. The rains drove most of such activity indoors so the bowling alleys and basketball courts have been going day and night. Duckpin season has just ended. The league for American soldiers was won by Colonel Bunker's regiment while the team representing Colonel Holcombe's regiment won the Scout League. Officers bowling was dominated by the bowlers from Colonel DeCarre's regiment. Captain Lawlor won the high average and Lieutenant Bovee the high triple award. Since the rains are expected to continue at least until the middle of September, a long tenpin season, spiced periodically with boxing, is expected.

Major General George Grunert, Commanding General of the Philippine Department, presents the United States Coast Artillery Association award to Colonel Octave De Carre, Commanding Officer of the regiment which won it.

Meanwhile the roar of airplanes overhead and the constant blinking of naval vessels are signs that numerous alerts are keeping the fort of Corregidor on its toes.

Fort Eustis

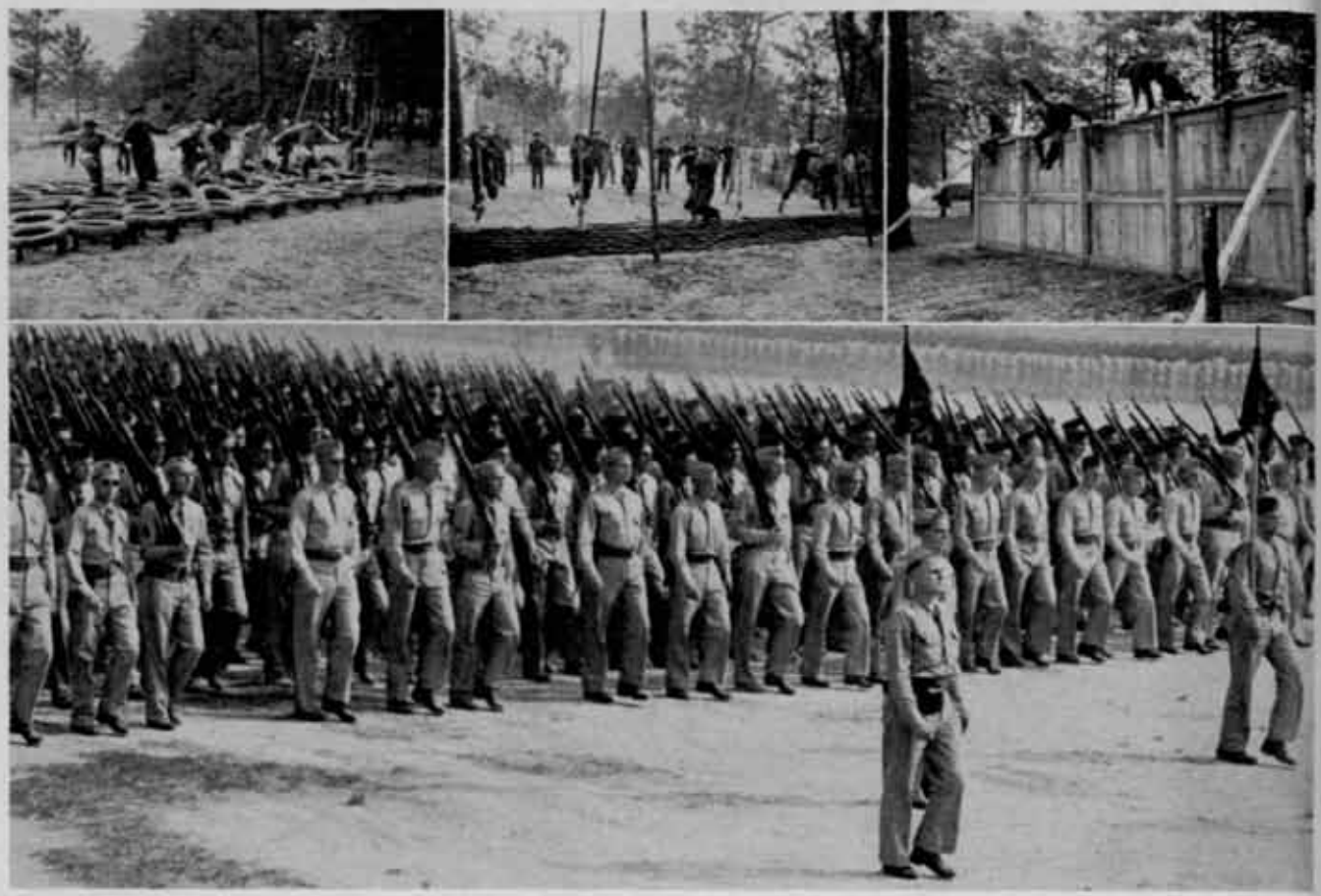
BRIGADIER GENERAL HAROLD F. NICHOLS, *Commanding*

Trained, well-tanned, and physically fit, the first contingent of 11,500 men has left this, the largest coast artillery replacement training center in the country, to take up permanent assignments at army bases and stations at a number of eastern posts and in the country's outlying possessions.

Final numbers of the first group cleared the post August 15th, and by September 1st, some 12,500 new selectees, composing the second training group, had already settled down to another training program.

Highlight of the first period was a review participated in by the fourteen battalions on June 20th which was observed by three general officers of the United States Army. Present were Brigadier General John B. Maynard, Camp Wallace, Texas; Brigadier General Francis P. Hardaway, Camp Callan, California; and Brigadier General Harold F. Nichols of this post; the commanding generals of the three Coast Artillery Replacement Training Centers.

Three firing ranges have been established, two on



Top: **Selectees try out the Fort Eustis obstacle course.**
Bottom: **Part of the 11,500 selectees who passed in review.**

the post and one at Grand View, Virginia. The 8-inch railway and the tractor-drawn artillery will be fired from the post into the James River, while the antiaircraft target practices will be held at a firing point at Grand View. Sub-caliber and service practices will be fired with the seacoast equipment and burst problems and free balloon firing with the antiaircraft artillery.

The post is taking on a finished appearance with an additional allotment of $660,000 worth of construction nearing completion. Under construction are numerous administrative, recreational and service structures of all types, including six chapels, ordnance buildings and additional housing. Extensive improvements have been made in the paved road system of the post and landscaping will soon be progressing rapidly under a combined Post-Civilian Conservation Corps set-up.

A training feature that is also proving to be an excellent morale builder is the new 500-yard obstacle course modeled after the one illustrated in the past issue of the JOURNAL. The new group of trainees have taken on the appearance of the man on the flying trapeze as they hurdle and swing over the fourteen obstacles. Obstacles include high walls and ladders, rope swings, wire entanglements, trenches, ditches and pipe tunnels.

The recreation program of the Fort is proceeding well with an intensive athletic and entertainment schedule underway. Sports are so popular that one battalion listed twenty-six softball games in a single afternoon.

Nearby towns are expanding their recreational facilities and offering full coöperation in planning entertainment for evenings and week-ends to supplement that offered at the Camp.

Hawaiian Coast Artillery Command

Major General Henry T. Burgin, *Commanding*

By Major D. D. Martin

Aloha from the Hawaiian Coast Artillery Command! In keeping with the tempo of the time the Hawaiian Separate Coast Artillery Brigade ceased to exist on August 1 and the units of which it was comprised now constitute the new Hawaiian Coast Artillery Command.

Major General Fulton Q. C. Gardner who had been in command of the Coast Artillery in Hawaii since December 16, 1938 departed on August 12, 1941 to take command of Camp Haan, California.

Major General Henry T. Burgin assumed command of the Hawaiian Coast Artillery Command upon arrival August 8, 1941. General Burgin came to us from the Ninth Coast Artillery District.

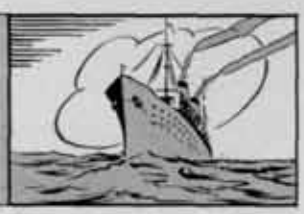
On the afternoon of August 8, more than 500 officers, their wives and guests gathered at the Pavilion Club, Fort DeRussy to bid godspeed to our departing commander and welcome his successor. Dancing followed the reception.

Various civil organizations of Honolulu have been working with Mayor Petrie's committee in furnishing entertainment for service men. The scope of the entertainment has been wide, varying from invitations for "three or four soldiers to come and have Sunday dinner with us" to free performances by professional and amateur entertainers. To date it appears that the most popular performances were those given by the Honolulu Police Department's Hula and Musical entertainers, the Honolulu Academy of Arts, and the American Ju Jitsu Guild. Needless to say the men of the command are greatly appreciative of the efforts made by the civic organizations in their behalf.

There have been a number of changes in assignment of personnel since the last issue of the Journal. Colonel Robert M. Perkins is now acting Chief of Staff of the HCA Command, Colonel John H. Lindt having been injured by a fall during maneuvers in May; Colonel Adam E. Potts has assumed command of the antiaircraft units at Schofield Barracks; Lieutenant Colonel James C. Bates has replaced Colonel Perkins as G-3, HCA Command; Colonel Hollins LeR. Muller relieved Colonel Charles K. Wing as a regimental commander; and Colonel Wing is now in command of all antiaircraft artillery units in Hawaii.

Any officer under orders for Hawaii who contemplates bringing his family commercially should bear in mind that rents are high and suitable homes are few and far between in the City of Honolulu. It is suggested that they precede their families and make the necessary arrangements on the ground for accommodation of their dependents.

Second Coast Artillery District



Brigadier General Forrest E. Williford, *Commanding*

By Lieutenant John C. Austin

Practically all target practices have been completed in the Second Coast Artillery District. While continuing intensive artillery training, the troops are spending much time on auxiliary essentials, such as training for civil disturbances, small arms firing, camouflage, gas defense, convoy discipline, and beach defense. Several command post exercises have been used to test the efficiency of units in various phases of combat duties, and to show up weaknesses for future correction.

On August 8, a new fort was added to the District, when the War Department announced that the military reservation at Cape Henlopen, which was deeded to the United States in 1873, would henceforth be known as Fort Miles, in honor of the late Lieutenant General Nelson Appleton Miles, Commanding General of the Army from October 5, 1895, to August 8, 1903.

Within the Harbor Defenses of the Delaware, training continues in high gear. In August, the 122d Separate Battalion CA (AA) conducted a target practice at Bethany Beach. Batteries A and B of the 21st CA (HD) are at Fort Hancock for the purpose of conducting a mine practice. Unit competition among the organizations in this Harbor Defense resulted in the award of first place to the 261st Separate Battalion CA (HD)

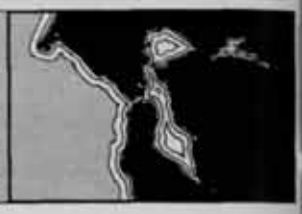
in Combat Efficiency, while the 21st CA received the blue ribbon for superiority in Athletics, Discipline, and Administrative Efficiency.

In the Harbor Defenses of Sandy Hook, a simulated raid from sea, with the help of "saboteurs" planted on Sandy Hook, was repulsed only after considerable damage to military stores and equipment had been theoretically inflicted. About 250 troops from Fort Tilden participated in the raid, and with the help of "fifth columnists" seized the message center and the radio station. The problem disclosed initiative and resourcefulness on the part of both invaders and defenders. Use of blank ammunition, flares, and smoke screens added to the realism of the exercise.

During July and August, members of the class of 1942 at the United States Military Academy visited Fort Hancock to undergo training in many phases of Coast Artillery. The cadets witnessed demonstration firings, mine laying, and radio detection of hostile aircraft. High spot of the two weeks program was the firing of a new 8-inch railway gun, recently arrived from Aberdeen Proving Grounds.

With the completion of the mine practice by Battery A of the 5th CA, the remaining batteries of this regiment are scheduled to conduct service practices in the near future, which, it is expected, will bring all target practice to a close within the District for 1941.

Ninth Coast Artillery District



BRIGADIER GENERAL E. A. STOCKTON, JR., *Commanding*

With the largest war games in the history of the West underway in southwest Washington, the entire Pacific Coast is a beehive of activity. Convoy after convoy of motor trucks carrying thousands of soldiers have been moving towards the front. The Harbor Defenses of Puget Sound and Columbia play an important part in this gigantic maneuver. Alert periods have been in order to stave off a possible hypothetical coastal invasion.

However, last week "enemy forces" theoretically seized Hawaii and leaped on against the mainland where large forces have been landed on the Washington coast. A thrust eastward against the lower Puget Sound area was expected. Forts Canby and Stevens at the mouth of the Columbia River have been attacked by strong Red units landed from transports off the Washington and Oregon coasts. A major battle looms in this sector. Small enemy forces have also landed in the Port Angeles area in the Straits of Juan de Fuca. From all reports the interesting phase of combat training has stimulated new life and the morale of the troops is excellent.

The Harbor Defenses of San Francisco have completed a week of intensive maneuvers. Training is progressing rapidly despite the loss of a number of men recently ordered to foreign service.

A few days ago the first municipal Hospitality House in the United States was turned over to the boys in uniform by patriotic San Franciscans. A spectacular show, featuring a number of Hollywood stars, high-lighted the occasion.

At Camp McQuaide, Watsonville, California, a monument dedicated to Major Joseph P. McQuaide, World War chaplain, was recently unveiled with appropriate ceremonies. Father McQuaide was the only chaplain for whom a United States military reservation had ever been named. The camp is also very proud of its five-man pistol team and its remarkable feat of breaking two world's records in as many weeks with the .22 caliber pistol.

The 3d Coast Artillery at Fort McArthur, somewhat recovered from its recent movie debut, has reverted back to normal training. Selectees are becoming accustomed to the big guns and follow instructions like veterans. Recreational facilities have aided in keeping the soldiers' morale high. The U. S. O. sponsored a very successful skating party in which more than 200 soldiers participated. Soon a 1,000-man Army recreation camp, to be erected at Santa Monica, California, will be available to this district.

Fort Rosecrans, guarding the harbor of San Diego, continues to be the scene of ever-increasing activity. A constant effort is being made to present a program both effective and interesting. Chemical warfare, signal, radio, bugler and tractor-driver classes have been conducted with outstanding results. A general refresher course for officers also has been covered. An athletic program proves to be one of the entertaining factors and a large percentage of the men are taking active part. The 19th Coast Artillery team won the San Diego City League championship, winning nine out of ten games. A new lower level beach has made swimming very popular. The command is looking forward to the completion in the near future of a new Service Club, or recreation hall, and a post chapel.

Camp Hulen

BRIGADIER GENERAL HARVEY C. ALLEN, *Commanding*

By Captain William H. Witt

Maneuver-weary coast artillerymen from this anti-aircraft training center, who will return early in October from East Texas and Louisiana where they are participating in the nation's greatest peace-time "war games," will be barely able to recognize Camp Hulen as the same place they left a month and a half before.

Taking advantage of the wholesale exodus of troops stationed here, the Constructing Quartermaster called for "full steam ahead," on the second phase construction program which will add 106 new buildings to the reservation and give Camp Hulen many of the advantages, facilities and improvements of a permanent post.

Included in new construction projects were seventy-five day rooms for enlisted men, four regimental chapels, seven day rooms for officers, an officers' club, a new training center headquarters, camp headquarters, two signal communication school buildings, a radio transmitter building, two radio shelter buildings, a hospital recreation building, a motor repair shop, finance building, ordnance administration building and two Q. M. administration buildings.

Turtle Point Firing Point

Of greatest interest to the men was the progress that has been made on two new theater buildings and the camp field house. Hulen's tent theater was "decapitated" last spring when a high wind ripped off the tent top and left only the sidewalls standing. Since that time the theater has operated as an "open-air" house. The two new theaters, of all frame construction, will have a combined seating capacity of 2,100. The new field-house, of frame construction, which is being built at a cost of $103,000 will fill a long-felt need for a building suitable for basketball and other winter sports and as an assembly hall for band concerts, dances and other similar events.

The construction program also prepared the camp for the coming of the winter rains by providing a net of hard surfaced roads in every section of the camp.

Four of the five regiments in training at Camp Hulen and most of the smaller auxiliary units of the field forces left camp early in August for the Louisiana maneuvers. One regiment, the 204th C.A. (AA) Louisiana National Guard, and two separate battalions, the 105th of the Louisiana National Guard and the 106th of the Kentucky National Guard, remained at the training base during the maneuvers. Units taking part in the maneuvers included the 69th C.A. (AA) R.A., 197th C.A. (AA), New Hampshire National Guard; 203rd C.A. (AA), Missouri National Guard; the 211th C.A. (AA) Massachusetts National Guard Co. A, 72nd Q.M. Bn.; Co. L, 29th Q.M. regiment; and the 13th Ordnance Co.

The 33rd Coast Artillery (AA) brigade, composed of the 69th, 197th and 203rd regiments, commanded by Brigadier General Harvey C. Allen and attached to the Third Army took to the field as a unit and during the preliminary maneuvers which preceded the gigantic "war games" with the Third Army pitted against the Second Army, was attached to the Eighth Army Corps. The 211th, during the preliminary phases of the maneuver, served with the Fourth Army Corps. This placed Hulen regiments on opposing sides during thi phase of the maneuvers.

Although the regiment did not go to maneuvers, on battery of the 204th C.A. (AA) got a side-line viev of the big war games when Battery G was organized a a provisional truck company, assigned to the Thir Army to haul supplies.

While some 7,000 Camp Hulen soldiers were takin part in the Louisiana "wars" the boys at home wen right ahead with their training program. Field exercises firing of the 3-inch AA guns and small scale maneuver kept the 204th and the 105th and 106th separate bat talions busy all of the period when the rest of the com mand was absent.

The 204th regiment took over the Turtle Poin Firing Point on the Hulen reservation doing its dail training by firing at plane-towed targets and by com pleting other firing problems.

All three of the units, in turn, trekked by motor to th beautiful Bastrop State Park at Bastrop, Texas, 14(miles away, for maneuvers and field exercises.

After many months of regimental tests and problem the Brigade exercise which was conducted from July 8 to 18 was characterized as a "graduation" exercise. Afte defending various towns and airports with a one-regi ment defense, the climax of the exercise was reache when the brigade moved on Brenham, Texas, where a coördinated three-regiment defense was set up aroun the center of the town. Realism was added to the prob lem when many of the movements were executed a night under black-out conditions. Nature coöperated t the fullest extent to provide conditions similar to thos encountered in Louisiana when copious quantities o rain fell on the defending troops. And in this area where loyal home fo'ks boast of a 10-foot elevation rain means mud—and mud means trouble. But a Hulen men have proved before, they demonstrated on this problem that "they can take it with a grin."

The first of all qualities is COURAGE. Without this the others are of little value, since they cannot be used.—MARSHAL DE SAXE.

Camp Davis

MAJOR GENERAL FREDERIC H. SMITH, *Commanding*

By Captain E. Jeff Barnette

Antiaircraft, 155-mm. and barrage balloon Coast Artillery units at Camp Davis are settling down to uninterrupted training routine now that the camp has reached its authorized strength of 20,000 officers and men. Last to arrive were 500 selectees from Camp Upton, New York, assigned to the 96th Coast Artillery (AA). Organizations now at Camp Davis include the 93rd, 94th, 95th, 96th, 99th and 100th regiments, all antiaircraft; the 54th Coast Artillery, 155-mm. (GPF) tractor-drawn regiment, and the barrage Balloon Training Center and School.

The units are nearing the end of .30 caliber rifle practice on the small arms firing range, a mile south of the camp proper, and troops are getting the feel of the 37-mm., 3-inch, 155-mm., and machine guns they soon will be firing. The Sears Landing antiaircraft firing point four and a half miles east of Camp Davis on the Atlantic ocean, with its 22 buildings, has been completed. This point will be used exclusively for antiaircraft firing. A durable road has been built from the camp to Sears Landing and the inland waterway, separating the firing center from the mainland, has been bridged with a retractable pontoon span. Units scheduled to fire at Sears Landing will "commute" daily between the main reservation and the firing point.

Workmen are rushing to completion a large firing point and tent camp at Fort Fisher, fifty miles south of the post. Before construction began, Fort Fisher was a rather desolate spot although close by the resort of Carolina Beach, but the site has a rich military history. The old fort guarded the mouth of the Cape Fear river, where blockade runners passed on their way to the port of Wilmington during the Civil war. In 1865, when Fort Fisher fell before a smashing assault by Union land and sea forces, the Confederacy's last link with the outside world was severed and the war drew to a close. Ordnance has come a long way since Fort Fisher won for itself a niche in history. In place of the bronze "Napoleons" which were used in the fort's final, tragic battle, Camp Davis units will use antiaircraft and 155-mm. guns.

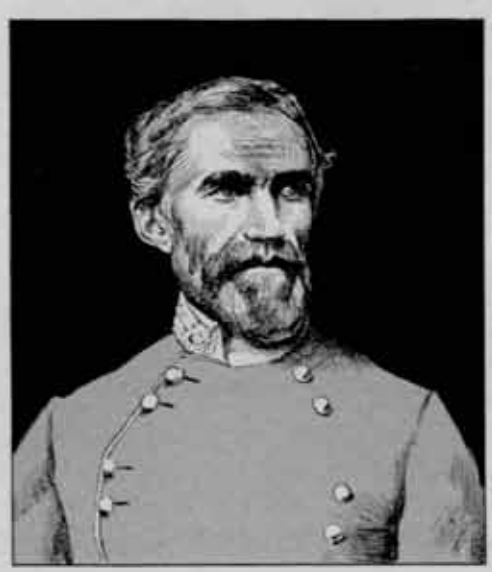
U. S. Route 421 will divide the Fort Fisher practice center into two sections. On the east, between the highway and ocean, will be the firing point proper; on the west, between the highway and Cape Fear river, will be the utilities and living quarters. Specifications call for the following wooden buildings: nine enlisted men's showers and latrines, nine mess halls (160 men each), one large warehouse, eight small warehouses, three radio stations, one meteorological station, three safety towers, one photography building, one officers' mess hall, two officers' showers and latrines, a post exchange, recreation building, gasoline station, motor repair shop, guardhouse, infirmary, and administration building. There will be 316 wooden tent frames. Tents are to be heated by Army stoves in the winter. Fort Fisher will

One hundred and sixty firing positions on the small-arms range at Camp Davis

The other end of the balloon cable. The winch is able to reel in cable at the rate of 1,200 feet per minute

be a modern firing center and camp in every respect, good for year-around use. Troops going to Fort Fisher will be able to remain there for weeks at a time. The Fort Fisher project is scheduled for completion in early October.

The Barrage Balloon Training Center and School is widening its activities. For several weeks the B. B. T. C. trainees worked with only one or two balloons, but now, with hundreds of soldiers grasping the fundamentals of barrage balloon operations, the number of balloons used for training is increasing rapidly. The War Department has leased 100 acres of land four miles north of the camp, affording the men an opportunity to practice balloon tactics. Eighty officers and 750 soldiers are attending the Barrage Balloon School at present. First hand information on wartime use of barrage balloons is being given by Lieutenant Colonel Robert Turley, of the Barrage Balloon Training Center, who recently returned from a tour of the British Isles as military observer. Colonel Turley's visit was devoted to a study of barrage balloon tactics being employed by England. The B. B. T. C. is scheduled to leave for its permanent base at Paris, Tenn., around the first of the year, according to present indications. Several officers, including Colonel Robert Arthur, B. B. T. C. commandant, have visited the Tennessee site to supervise planning of the new base.



Fort Bragg

Brigadier General Claude M. Thiele
Commanding, 34th Coast Artillery Brigade (AA)

By Lieutenant William D. Workman, Jr.

Fire control for units of the 34th Coast Artillery Brigade (AA) was brought literally "down to earth" during August, as the three regiments completed firing at land and water targets simulating mechanized forces and landing parties.

Utilizing the brigade's target practice site at Windy Hill, S. C., where each of the units engaged in record antiaircraft practice earlier in the summer, the troops conducted courses of fire at targets simulating small craft employed in beaching operations. The targets themselves comprised comparatively small rectangles of target cloth mounted on wooden frames and towed on a sled type float behind a crash boat. The courses fired included a crossing course and an approaching course at 60 degrees to the normal of battery. At the time of this writing, both the 77th Coast Artillery (AA), commanded by Lieutenant Colonel Riley E. McGarraugh, and the 67th, commanded by Colonel James P. Hogan, have completed the water firing. Lieutenant Colonel Harry R. Pierce's regiment, the 76th, is at the beach now.

Gun batteries of the 77th employed an open sight adaptation on the 3-inch guns, bringing into play rifle sight principles through placing two parallel strips of adhesive on top of the cross piece of the cradle equilibrator trunnions and erecting a knifeblade sight at the muzzle. This rough sight was found to be effective in azimuth. Elevation was set by observation, using an arbitrary fork of 4 mils. Good results were obtained.

The officers and men of the 67th carried sight improvisation to a much greater degree, achieving good results with all types. Through careful construction of open sights, B Battery was able to obtain hits using the sights in azimuth and in elevation. The rear V-sight was bolted to the center of the cradle equilibrator trunnion crosspiece in such a manner that it could be adjusted. The front sight was patterned after the bead type. With a little practice, gun commanders were able literally to "draw a bead" on the water target, which was towed at ranges from 500 to 1,500 yards.

D Battery's effectiveness was helped through use of a simple but accurate improvised sight bolted alongside

Firing the first antiaircraft practice ever to be shot by a colored regiment, the troops of the 76th Coast Artillery (AA) did this to one of the sleeve targets. (Photo by the regimental commander, Lieutenant Colonel Harry R. Pierce.)

the gun so that the azimuth setter could employ it. Looking not unlike a telescopic sight on a rifle, though without lenses, the sight comprised a two foot section of ⅞-inch pipe, fitted at the breech end with a metal plug drilled to serve as a peep sight and at the muzzle end with three vertical cross hairs. The azimuth setter was able to make adjustments in azimuth by observing the splash with relation to the center hair. If the splash occurred on either of the side hairs, that particular hair was brought to bear on the target for the next round.

C Battery employed a variety of sights, one of which was a further development of the B Battery type described above. The sight was constructed out of sheet metal and was bolted alongside the left of the gun cradle as was the sight above. The same principle was employed but the radius of sight was only about eight inches, and five rather than three vertical crosshairs were mounted in the sight. A still further development was the punching of peep-sights of varying diameters in a circular piece of metal which could be revolved to bring any one peep into play, the selection to be determined by conditions of visibility.

In almost all instances, elevation settings were based on the range to the target initially, as determined by the height finder, and corrected by observation. Fire at the crossing course, range 1,500 yards, embraced use of the director in determining azimuth. With a range short of the minimum for which the instrument was intended to be used, the director was not used in determining elevation setting. Both regiments scored a gratifying number of hits with the 3-inch fire. Fire with the .50 caliber machine guns and with the .30 caliber MG's mounted on adaptors atop the 37-mm. guns was very effective, and all targets were riddled with machine gun holes.

While the 67th was firing at Windy Hill, the 77th completed its fire on the sunken track range back at Fort Bragg, where the gun crews gained practice in firing at simulated mechanized units. No 3-inch fire was conducted on the sunken track range.

All regiments underwent field tests and mobilization training program tests in August and September. Searchlight record practices were completed during the same period, and the regiments conducted firing with small arms on the ranges at Bragg.

Big maneuver for the brigade in August was a three-day field exercise based essentially on the I Army Corps CPX conducted at Bragg during June. Accompanied by a water supply detachment of engineers and a motor maintenance platoon of quartermasters, all units of the brigade went into the western reaches of the reservation and the bivouac and maneuver areas adjoining the reservation for the period August 27-29. Antiaircraft protection was provided for the forward movement of simulated infantry divisions as well as for troop concentrations and rear area establishments during the problem. Brigadier General Claude M. Thiele, commanding the brigade, directed the exercise be carried out as a preliminary for the forthcoming I Army Corps and First Army maneuvers to be held in the Carolinas in October and November. Apropos of the maneuvers, the brigade will move into its base camp in the Chester, S. C. area during the week of September 21.

Valuable experience was gained by a provisional battalion of the 67th Coast Artillery during a I Army Corps field problem conducted in and about Fort Bragg in mid-August. The battalion was attached to the Ninth division's Red forces and operated under battle conditions during the conduct of the five-day problem. Lessons gained from the extended exercise were disseminated to all units.

Athletic activities continue apace, with all regiments giving good accounts of themselves. Since entering the post baseball league, the 67th has dropped only one game, while the 76th and the 77th have good standings in the league of colored troops. Swimming, volleyball, horseshoe pitching and other sports continue to draw interest.

The 77th is particularly proud of having been rated first three times and second once in the last four regimental ratings released from brigade headquarters.

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

By Lieutenant Erwin Clement

Major General Fulton Q. C. Gardner, who had been coast defense and antiaircraft commander of the Hawaiian department, assumed duties as commanding officer of Camp Haan on August 21. He succeeded Brigadier General E. B. Colladay, who had been commander of the antiaircraft training center since its establishment last fall, and also of the 37th Coast Artillery (AA) brigade. General Colladay continued as commanding officer of the brigade.

Since the opening of the camp last fall, morale activities have expanded considerably under the direction of Major William W. Vickrey, morale officer. Entertainment and social, recreational, and athletic events have been regularly established.

Plans for a new theater building have been announced by Major Karl Piper, camp theater officer. Difficulties in presenting shows at the tent theater have been encountered because of long tears in the canvas ceiling. Dust, wind and sun combined to rip the tent. The new building, of frame construction, will seat 1,038.

During the summer an outdoor theater capable of accommodating the entire camp personnel has been used to good advantage in presenting variety shows on the reservation. Marlene Dietrich, Kay Francis, Lynda Darnell, Carole Landis, Ginny Simms, and Lynda Ware were among those who entertained the troops. An entire Earl Carroll troupe, Kay Kyser and his band, Jerry Adler, and Harry Revel appeared. After his visit Harry Revel wrote a Camp Haan battle song.

Center of camp social activities for enlisted men is the recently completed service men's club house. It contains a cafeteria, dance floor, lounges, and library —all furnished in modern style.

Each regimental recreation hall provides reading material, checker boards, ping pong tables, a piano, magazine racks, and book shelves for the men. Religious activities have been transferred to three new chapels, although recreation halls were used before the chapels' construction. Just outside the recreation halls are the regimental sports areas with facilities for kittenball, baseball, tennis, volley ball, horseshoe, basketball, boxing and badminton. Battery day rooms are among the more recently constructed facilities. These are being furnished by the individual batteries, out of their own funds.

Graders are leveling a new general athletic field for the camp which will hold, among other things, three touchball fields. A camp tournament will be held in touchball, as there was in baseball. The camp baseball championship, incidentally, went to the 78th Coast Artillery (AA). The football schedule includes games for the camp team with Fresno State, Fort Ord, San Diego State, and U.C.L.A. The Camp Haan uniform will bear the scarlet and gold of the Coast Artillery.

Neighboring towns have been most coöperative and hospitable. In nearby Riverside the basement of the auditorium has been outfitted with ping pong tables, shuffleboard courts, boxing equipment, and a reading lounge, where a cooky jar is replenished for service men by the Riverside W.C.T.U.

At a private flying school near San Bernardino, California, some eighty Camp Haan men have been taking flying lessons on their own time and at their own expense.

Camp Callan

BRIGADIER GENERAL F. P. HARDAWAY, *Commanding*

By Captain William J. Hauser

With the completion of the first training cycle of Coast Artillery Replacement troops, and the shipping out of the graduates, the new arrivals brought new training problems to the Coast Artillery Replacement Training Center of the far west. Profiting by the experience of the previous months of establishing the camp and the first training period, the training team glided along more smoothly, as the result of careful planning, and oiling the previous rough spots.

Trainload after trainload of new selectees rolled in with the cotton khaki cloth uniforms, right fresh from the induction centers of the warmer regions of the country, where wool O.D. uniforms are out of the question for the summer months. Wool uniforms the year around are the ideal and desired apparel at Camp Callan.

Not waiting for the adjustment of clothing, the training went forward on schedule rapidly, and the trainees were eager to learn the information that was poured out to them in their first taste of basic training in Coast Artillery. During the training period, without perceptible rapid change, the southern accent seemed to permeate the camp, particularly in some batteries where activation was one hundred per cent from the southern troops.

As time went on, many evenings were spent by the searchlight batteries for drill and practice. The residents of the nearby community of La Jolla, a nationally known summer resort, were treated with the grandeur of the "lights of Callan" as they played over the skys just a few miles distant.

Results attained in all firings have been surprisingly good with trainees who have only been in the service a few short weeks, and for the most part, have never had experience in firing any more than a twelve gauge shotgun, or a small caliber rifle.

After the training program in the daytime, with the exception of night searchlight training, and overnight bivouacs, the recreation of the soldiers is more than adequately provided for. A vast open area has been converted into an outdoor arena. The main modern up-to-date boxing arena is in use every night for the purpose of instruction and practice in boxing. This activity has attracted a wide interest and frequently boxing exhibitions are staged, with some very outstanding matched bouts. These shows attract a large number of trainees who receive them with great enthusiasm.

A large stage in this outdoor theatre provides the locale for other types of entertainment, such as mammoth shows presented by famous stars; concerts by symphony orchestras; and many other attractive entertainments. A recent example of a show of these celebrities who give so freely of their time and talent, was presented under the direction of Rudy Valee on the evening of September 2d. This particular show included charming Martha Tilton, one of America's most popular vocalists. In addition to the lovely Martha Tilton, Hank McCune and Skitch Henderson took leading rôles.

For those interested in art, the Camp Callan Sketch Club exhibited concurrently work done before induction, and that done during odd moments of week-ends and evenings at camp, at the Fine Arts Gallery of San Diego. A surprisingly large number of excellent paintings were exhibited by the trainees of the second training cycle.

Still another type of entertainment has been the Camp Callan Radio Hour, which is broadcast weekly from San Diego, California. The chorus developed under the guidance of the Camp Chaplain has met with great favor in its outstanding accomplishments on these programs. The varied talent of the selectees has made it possible to portray some exceptionally interesting radio skits for the many radio listeners throughout the country.

With the signing of contracts for supplemental work and construction at Camp Callan, the new developments are providing for road improvements which we all have been eager to have, not only within the camp proper, but also for access to the training areas as well. Our three chapels authorized recently were completed and dedicated in the latter part of August and a second War Department Motion Picture Theatre, in the northern part of camp, makes it possible for those in that section to see the talkies without the necessity of going a couple of miles away from their areas. The new motor repair shops and sheds have been completed. The much needed Ordnance warehouse and shops, hospital, recreation hall, additional hospital barracks, ammunition magazines, new finance office and added Quartermaster barracks, have been provided for by supplemental contracts. These contracts further provided for the fencing and lighting of the critical areas throughout the entire camp.

Camp Stewart

MAJOR GENERAL SANDERFORD JARMAN, *Commanding*

By Lieutenant Walter H. Dustmann, Jr.

Camp Stewart, while going forward in two broad phases with its now well-advanced antiaircraft training activity, awaits the arrival of its new commanding general, Major General Sanderford Jarman, former commanding general of the Panama Coast Artillery Command.

The new commanding general succeeds Major General William H. Wilson, who left Camp Stewart August 14.

Antiaircraft activity at Camp Stewart has progressed into two broad and interesting phases—the first antiaircraft firing at Camp Stewart proper and the organization of the first antiaircraft searchlight battalion of its kind in the country.

The initial antiaircraft firing on the huge Camp Stewart reservation began with the opening of the small-arms antiaircraft and antitank range the latter part of August.

This practice firing, using .22 calibre rifles against miniature moving airplanes designed to simulate combat tactics of real warplanes, marks a new and advanced phase of antiaircraft training in the Southeast.

Another new and totally different phase of antiaircraft training has been initiated at the antiaircraft center in the past few weeks with the formation of a novel antiaircraft searchlight battalion utilizing the combined strength of sixty searchlights and capable of spotting airplanes over a 600-square-mile sector.

Chief function of the new-type searchlight unit will be to work in coöperation with the United States Army Air Corps instead of with antiaircraft units. Major Arthur B. Nicholson, Coast Artillery Corps, a member of the staff of the First Interceptor Command at Mitchell Field, New York, is in command of the provisional battalion.

Personnel of the novel battalion has been drawn from searchlight batteries of the 207th, 209th, and 214th Coast Artillery (AA).

Plans of operation of the battalion envisage emplacement of the sixty searchlights some three and one-half miles apart, and, through coöperative effort, the establishment of contact with airplanes within their immediate range before passing the target over to the next light.

The start of the small-arms antiaircraft firing at Camp Stewart in part takes the place of firing previously accomplished at Fernandina, Florida, tiny isle just south of the state line, where all types of firing had been staged, with long lines of Stewart convoys shuttling back and forth over the approximately 160 miles to the firing area there. This was necessitated by the fact the great land area of the post was still being acquired.

Now, although thousands of acres yet remain to be taken over by the United States Government, enough of the projected 360,000 acres has been acquired to enable the small-arms antiaircraft range to open.

Later, as more and more land is secured, the larger and more impressive heavy antiaircraft ordnance range will be opened to practice firing by Camp Stewart antiaircraftsmen. This range, now nearing completion, will fire all types of antiaircraft machine guns. It will have a "danger area" of approximately 400 square miles, extending over a great portion of the reservation behind the camp's large tent city, housing some 14,000 soldiers.

Firing on the large range is expected to get under way late in September. Acquisition of all Camp Stewart reservation land is predicted for October 15.

The first 37-mm. antiaircraft gun firing was staged by a Stewart unit at Fernandina in the latter part of August. The 104th Separate Battalion went down to the Florida firing area, unlimbered its 37-mm. guns and blazed away out over the Atlantic Ocean. All earlier 37-mm. practice had been "dry firing."

The small-arms antiaircraft firing, now a daily routine of Camp Stewart troops, consists of use of .22 caliber rifles against the miniature airplane targets, moved by pulleys on specially-built rigs. The range consists of nine large firing points, each for a regiment and separate battalion, so that units of every regiment and separate battalion at the camp can practice at the same time, with the several batteries of each outfit alternating in practice on the range.

The miniature planes simulate all types of combat-plane activity, including climbing and diving, horizontal flying and coming and going away. The small-arms range also has antitank rigs which will be used at a later date.

COAST ARTILLERY ORDERS

(Covering period July 1 through August 31, 1941)

Colonel Joseph D. Brown to his home to await retirement.

Colonel Reginald B. Cocroft to BBTC, Camp Davis.

Colonel Albert Gilmor to retire August 31.

Colonel John L. Holcombe to retire October 31, upon his own application.

Colonel Martin J. O'Brien to H.D. of Narragansett Bay, Fort Adams.

Colonel Charles H. Patterson (IGD), to retire December 31.

Colonel Adam E. Potts relieved from GSC, Hawaiian Department.

Colonel Charles H. E. Scheer, CA-Res to active duty, Office of the Administrator of Export Control, Washington, D. C.

Colonel C. Thomas-Stahle to Puerto Rican Department, sailing New York, August 9.

Lieutenant Colonel Nyall L. Adams to AATC, Camp Stewart.

Lieutenant Colonel Albert A. Allen to BBTC, Camp Davis.

Lieutenant Colonel Maitland Bottoms to 4th CA District, Atlanta, Georgia.

Lieutenant Colonel George W. Brent to Puerto Rican Department, sailing New York September 15.

Lieutenant Colonel Henry W. Cameron to BBTC, Camp Davis.

Lieutenant Colonel William R. Carlson to AATC, Camp Stewart.

Lieutenant Colonel Robert M. Carswell to 34th CA Brigade, Fort Bragg.

Lieutenant Colonel Arthur K. Chambers to Ninth CA District, Fort Winfield Scott.

Lieutenant Colonel Charles I. Clark to Office of the Chief of Staff.

Lieutenant Colonel Glenn D. Crawford to BBTC, Camp Davis.

Lieutenant Colonel George W. Dunn, Jr. to CARTC, Camp Wallace.

Lieutenant Colonel Charles R. Finley (GSC) to H.D. of Boston, Fort Banks.

Lieutenant Colonel Archibald D. Fisken to 36th CA Brigade, Camp Edwards.

Lieutenant Colonel Kenyon P. Flagg to AATC, Camp Stewart.

Lieutenant Colonel Barrington L. Flanigen to 36th CA Brigade, Camp Edwards.

Lieutenant Colonel Donald B. Greenwood to AATC, Fort Bliss.

Lieutenant Colonel Burnie O. Henderson to BBTC, Camp Davis.

Lieutenant Colonel Charles J. Herzer to IGD, Panama Canal Department, sailing New York, September 21.

Lieutenant Colonel Albert M. Jackson to Fort Hamilton.

Lieutenant Colonel James P. Jacobs to CARTC, Camp Wallace.

Lieutenant Colonel John E. Kennard to CARTC, Fort Eustis.

Lieutenant Colonel Millard E. Kurtz to BBTC, Camp Davis.

Lieutenant Colonel Will I. Levy, CA-Res to active duty, Office of the Chief of the Morale Branch.

Lieutenant Colonel LeRoy Lutes to General Staff with Troops, Headquarters Third Army, San Antonio, Texas.

Lieutenant Colonel Robert W. McBride to AATC, Camp Hulen.

Lieutenant Colonel John W. McCormick to BBTC, Camp Davis.

Lieutenant Colonel Reinold Melberg to Hawaiian Department, sailing San Francisco, September 26.

Lieutenant Colonel Stanley R. Mickelsen to 74th, Camp Pendleton.

Lieutenant Colonel Walter L. Moore to BBTC, Camp Davis.

Lieutenant Colonel Leslie S. Morrill to General Staff with Troops, Headquarters, Central Defense Command, Memphis, Tenn.

Lieutenant Colonel James B. Muir, Jr. to IGD, AATC, Camp Haan.

Lieutenant Colonel Geoffrey M. O'Connell to AATC, Camp Stewart.

Lieutenant Colonel Harry E. Pendleton to 33d CA Brigade, Camp Hulen.

Lieutenant Colonel George W. Ricker to Office of the Chief of Coast Artillery.

Lieutenant Colonel Gerald B. Robison to Headquarters, Second Army, Memphis, Tenn.

Lieutenant Colonel Rexford Shores to H.D. of San Francisco, Fort Winfield Scott.

Lieutenant Colonel Wilfred H. Steward to 36th CA Brigade, Camp Edwards.

Lieutenant Colonel Robert J. Van Buskirk to 36th CA Brigade, Camp Edwards.

Lieutenant Colonel James deB. Walbach to Puerto Rican Department, sailing New Orleans, September 26.

Lieutenant Colonel Arthur L. Warren to CARTC, Camp Wallace.

Lieutenant Colonel Webster H. Warren to Headquarters, Third Army, San Antonio, Texas.

Lieutenant Colonel Victor R. Woodruff to Hawaiian Department, sailing San Francisco, September 25.

Major Kenneth M. Barager, CA-Res to active Duty, Hawaiian Department, sailing San Francisco, July 31.

Major Orley D. Bowman, to H.D. of New Bedford, Fort Rodman.

Major Matthew K. Deichelmann to Headquarters, Caribbean Defense Command, Quarry Heights, Canal Zone.

Major John W. Dwyer to station at Paris, Tennessee.

Major Parmer W. Edwards orders to 34th CA Brigade, Fort Bragg revoked.

Major John F. Gamber to H.D. of Chesapeake Bay, Fort Monroe.

Major Richard H. Grinder to H.D. of Portland, Fort Preble.

Major Sidney H. Guthrie to University of Cincinnati, Cincinnati, Ohio.

Major Noble T. Haakensen to Headquarters, Seventh Army Corps, Birmingham, Ala.

Major Aellen B. Hanny to BBTC, Camp Davis.

Major William B. Hawthorne to instructor, Coast Artillery School.

Major John S. Henn to H.D. of Los Angeles, Fort MacArthur.

Major John J. Holst to AATC, Camp Stewart.

Major Armand Hopkins to Philippine Department, sailing San Francisco, September 18.

Major Oswald J. Lacerte to BBTC, Camp Davis.

Major Vincent A. Lane to Office of the Chief of Staff.

Major William S. Lawton to General Staff with Troops, Hawaiian Department.

Major Melford M. Lothrop to BBTC, Camp Davis.

Major Marvin J. McKinney to Puerto Rican Department, sailing New York, August 23.

Major Ernest A. Merkle to AATC, Camp Stewart.

Major Walter C. Peters to BBTC, Camp Davis.

Major Clarence E. Rothgeb to Headquarters, Fourth Army, Presidio of San Francisco.

Major Joe F. Simmons to General Staff with Troops, Headquarters, Southern Defense Command, San Antonio, Texas.

Major Ernest B. Thompson to 71st, Fort Story.

Major C. Forrest Wilson to AATC, Camp Stewart.

Captain Orrin H. Barnes to Hawaiian Department, sailing San Francisco, July 28.

Captain Nathaniel E. Borden to instructor, Coast Artillery School.

Captain William D. Britt, Jr. to Fort Eustis.

Captain Harcourt G. Bull to Philippine Department, sailing San Francisco, August 30.

Captain Dabney R. Corum to 36th CA Brigade, Camp Edwards.

Captain Leland K. Dewey to Philippine Department, sailing San Francisco, August 7.

Captain Jack W. Eichinger Jr. to instructor, Coast Artillery School.

Captain Carl F. Ende to Fort Eustis.

Captain Philip N. Gallagher to Hawaiian Department, sailing San Francisco, August 19.

Captain Neville L. Grow to Philippine Department, sailing San Francisco, August 30.

Captain Alvin W. Hamilton to Philippine Department, sailing San Francisco, August 7.

Captain Paul A. Hastings to Office of the Chief of Coast Artillery.

Captain Urban J. Hess to Fort Eustis.

Captain George A. Hoffman to instructor, Coast Artillery School.

Captain Harold A. Jimerson to Philippine Department, sailing San Francisco, August 30.

Captain Stephen A. Kallis to Hawaiian Department, sailing San Francisco, July 28.

Captain Adam A. Koscielniak to H.D. of Chesapeake Bay, Fort Monroe.

Captain Alonzo E. Langworthy to Philippine Department, sailing San Francisco, August 7.

Captain Harold S. Lewis to Philippine Department, sailing San Francisco, August 30.

Captain Neil E. Marvin to instructor, Coast Artillery school.

Captain George G. Mooney to Savannah Engineer District, Savannah, Georgia.

Captain Eugene H. Nirdlinger to Philippine Department, sailing San Francisco, August 7.

Captain Milton L. Ogden to duty with Coast Artillery Board, Fort Monroe.

Captain Elmer E. Osmun to BBTC, Camp Davis.

Captain William H. Owen, Jr. to Philippine Department, sailing San Francisco, August 30.

Captain Charles G. Patterson to AATC Camp Stewart.

Captain William P. Robinson to Hawaiian Department, sailing San Francisco, July 28.

Captain Wendell P. Rynerson to Fort Eustis.

Captain Harry C. Sawin to Fort Eustis.

Captain John Slavin to instructor, Coast Artillery School.

Captain William C. Smith to Fort Eustis.

Captain Warren A. Starr to Philippine Department, sailing San Francisco, August 30.

Captain George E. Steiger to Philippine Department, sailing San Francisco, August 30.

Captain Vernon R. Stolle to Office of the Chief of Morale Branch.

Captain Myron B. Tauer to General Staff with Troops, Headquarters, Central Defense Command, Memphis, Tennessee.

Captain Robert O. Thomas to Hawaiian Department, sailing San Francisco, July 28.

Captain Victor F. Thomas, Jr. to Fort Eustis.

Captain Robert Totten to H.D. of Los Angeles, Fort MacArthur.

Captain Harrison F. Turner to H.D. of Sandy Hook, Fort Hamilton.

Captain William N. Van Koughnet to BBTC, Camp Davis.

Captain Wilford E. H. Voehl to AATC, Camp Stewart.

Captain Ivan J. Weaber to Philippine Department, sailing San Francisco, August 30.

Captain Robert J. White to Philippine Department, sailing San Francisco, August 30.

Captain Robert J. Wood to Newfoundland Base Command, sailing New York, August 25.

Captain Raymond C. Woodes to Hawaiian Department, sailing San Francisco, July 14.

Captain Harold B. Wright to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Robert P. Aikman to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Terence F. Aston to Philippine Department, sailing San Francisco, August 30.

First Lieutenant John R. Bailey, Jr. to 36th CA Brigade, Camp Edwards.

First Lieutenant John C. Bane to 34th CA Brigade, Fort Bragg.

First Lieutenant Cosmo S. Barrese to Hawaiian Department, sailing San Francisco, August 5.

First Lieutenant Don A. Bohler to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Josephus A. Bowman to 34th CA Brigade, Fort Bragg.

First Lieutenant August L. Boyd to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Robert W. Browning to Hawaiian Department, sailing San Francisco, July 14.

First Lieutenant George E. Budd to instructor, Coast Artillery School.

First Lieutenant Newell R. Bullen to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Russell R. Carll to Headquarters, Second Corps Area, Governors Island, New York.

First Lieutenant William C. Childress to BBTC, Camp Davis.

First Lieutenant Arthur H. Cottinghan, Jr. to Fort Eustis.

First Lieutenant Charles B. Cox to Hawaiian Department, sailing San Francisco, July 14.

First Lieutenant Morton B. Crane to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Richard O. Curtin to 34th CA Brigade, Fort Bragg.

First Lieutenant Paul W. Daley to 94th, Camp Davis.

First Lieutenant Eugene A. Delledonne to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Fred S. Dewey, Jr. to Philippine Department, sailing San Francisco, August 30.

First Lieutenant James O. Dorsett to Fort Eustis.

First Lieutenant Murray D. Dougan to 34th CA Brigade, Fort Bragg.

First Lieutenant Thaddeus C. Dukes to Fort Eustis.

First Lieutenant Albert E. Durie, Jr. to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Harold F. Eddington to Philippine Department, sailing San Francisco, August 30.

First Lieutenant John T. Evans orders to instructor, Coast Artillery School revoked.

First Lieutenant Philip H. Farley to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Carl W. Fischer to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Ralph P. Ford to Philippine Department, sailing San Francisco, July 24.

First Lieutenant Thomas H. Fortney to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Edward P. Freiman to Philippine Department, sailing San Francisco, August 7.

First Lieutenant Robert I. Freund to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Don B. Fullmer to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Herbert J. Garilli to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant David Garrick to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Beverly R. Gibbon to Philippine Department, sailing San Francisco, July 14.

First Lieutenant Hayne P. Glover, Jr. to Fort Eustis.

First Lieutenant William V. Grace to Coast Artillery School.

First Lieutenant Charles M. Graves to Hawaiian Department, sailing San Francisco, July 14.

First Lieutenant Harold O. Green to BBTC, Camp Davis.

First Lieutenant Sydney R. Greer to Philippine Department, sailing San Francisco, August 7.

First Lieutenant Maurice V. Griffin to Hawaiian Department, sailing San Francisco, July 14.

First Lieutenant Milton D. Hawes to Philippine Department, sailing San Francisco, August 30.

First Lieutenant William E. Holton to Philippine Department, sailing San Francisco, August 30.

First Lieutenant William J. A. Hussey to AATC, Camp Stewart.

First Lieutenant James L. Ingles, Jr. to BBTC, Camp Davis.

First Lieutenant Andrew P. Jaeger to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Frank G. Jonelis to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Howard J. Keefer to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Kemper L. Kibler to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Leslie W. King, to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Lee M. Kirby to AATC, Camp Stewart.

First Lieutenant Walter H. Knox, Jr. to Hawaiian Department, sailing San Francisco, July 14.

First Lieutenant William F. Kuhn to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Anthony T. LaRocca to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Buxton L. Layton, Jr. to Philippine Department, sailing San Francisco, July 24.

First Lieutenant Joseph Letteriello to duty with Coast Artillery School.

First Lieutenant George A. Levi to Panama Canal Department, sailing New York, August 13.

First Lieutenant Tony B. Lloyd to Philippine Department, sailing San Francisco, August 30.

First Lieutenant John M. McCormick to Hawaiian Department, sailing San Francisco, July 14.

First Lieutenant James B. McLaughlin to Fort Eustis.

First Lieutenant Oliver K. Marshall, Jr. to 36th CA Brigade, Camp Edwards.

First Lieutenant George G. Maxfield to Philippine Department, sailing San Francisco, August 30.

First Lieutenant John P. Mial to 33d CA Brigade, Camp Edwards.

First Lieutenant Gordon K. Miller to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant George M. Moore, to Philippine Department, sailing San Francisco, August 30.

First Lieutenant John B. Nixon to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Alvin O. Oyen to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Charles W. Pflager, Jr. to Philippine Department, sailing San Francisco, August 30.

First Lieutenant John A. Rega to 9th, Fort Banks.

First Lieutenant James A. Richards, Jr. to Recruiting Publicity Bureau, Governors Island.

First Lieutenant Fred E. Rose to Philippine Department, sailing San Francisco, August 30.

First Lieutenant George E. Ruggles to Fifth Corps Area Service Command, Fort Benjamin Harrison.

First Lieutenant Wilburn R. Saunders, Jr. to Philippine Department, sailing San Francisco, August 30.

First Lieutenant George Schnicke to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Willis A. Scrivener to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Philip R. Seaver to 34th CA Brigade, Fort Bragg.

First Lieutenant George A. Sense to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Henry C. Shawyer to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Clayton C. Shupp to Philippine Department, sailing San Francisco, August 30.

First Lieutenant David M. Snell to Philippine Department, sailing San Francisco, August 30.

First Lieutenant John R. Snow to 33d, Camp Hulen.

First Lieutenant William W. Stecker to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Donald G. Stohlman to Panama Canal Department, sailing New York, August 28.

First Lieutenant John M. Teasdale to Submarine Mine Depot, Fort Monroe.

First Lieutenant Richard B. Thompson to instructor, Coast Artillery School.

First Lieutenant Robert L. Thompson to BBTC, Camp Davis.

First Lieutenant Milton H. Townes to Fort Eustis.

First Lieutenant James C. Traw to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Lawrence A. Twomey to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Matthew J. Ustas to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Giles H. Vaden, Jr. to Puerto Rican Department, sailing New York, September 15.

First Lieutenant Irwin A. Vetesnik to Philippine Department, sailing San Francisco, August 7.

First Lieutenant Roy McM. Vick, Jr. to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Newell D. White to Hawaiian Department, sailing San Francisco, July 28.

First Lieutenant Orlando H. Wilkening, Jr. to BBTC, Camp Davis.

First Lieutenant Darwin E. Wiser to Philippine Department, sailing San Francisco, August 30.

First Lieutenant Hiram G. Woodruff, CA-Res to active duty, Puerto Rican Department, sailing New Orleans, September 12.

Second Lieutenant Thomas W. Ackert to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Michael F. Aliotta to H.D. of San Diego, Fort Rosecrans.

Second Lieutenant Windsor T. Anderson to H.D. of San Francisco, Fort Winfield Scott.

Second Lieutenant Francis H. Ayer to Hawaiian Department, sailing San Francisco, July 14.

Second Lieutenant Franklin A. Ayer to Hawaiian Department, sailing San Francisco, July 14.

Second Lieutenant James P. Balloch to Hawaiian Department, sailing San Francisco, July 14.

Second Lieutenant William H. Banks to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Robert D. Barton to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant James H. Batchelder, III. to Hawaiian Department, sailing San Francisco, July 14.

Second Lieutenant Eugene J. Bauer to Hawaiian Department, sailing San Francisco, September 6.

Second Lieutenant Bernard F. Benning to Fort Eustis.

Second Lieutenant Carl R. Bode to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Walter I. Brause to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Robert D. Brown, Jr. to 34th CA Brigade, Fort Bragg.

Second Lieutenant Arthur H. Buckman to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant John W. Burtchaell to H. D. of Sandy Hook, Fort Hancock.

Second Lieutenant Gerard J. Carney to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant George W. Carnrick to Puerto Rican Department, sailing New York, September 6.

Second Lieutenant Douglass Carr, Jr. to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Clifton H. Chamberlain, Jr. to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Daniel T. Chapman to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Robert G. Charles to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Albert H. Chestnut to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Robert E. Clark to 36th CA Brigade, Camp Edwards.

Second Lieutenant Alex D. Cobb, Jr. to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Harrington W. Cochran, Jr. to 62d, Fort Totten.

Second Lieutenant Maurice H. Cohen to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant David Cooper to H.D. of Sandy Hook, Fort Hancock.

Second Lieutenant Clyde H. Courtwright, CA-Res to active duty, instructor, Coast Artillery School.

Second Lieutenant John P. Crandell to Philippine Department, sailing San Francisco, September 8.

Second Lieutenant Thomas M. Culbertson to Fort Eustis.

Second Lieutenant William K. Cummins to H.D. of Pudget Sound, Fort Worden.

Second Lieutenant George B. Curtis to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Robert McN. Curtis to Fort Eustis.

Second Lieutenant Clarence W. Daugherity to 40th CA Brigade, Fort Sheridan.

Second Lieutenant Robert P. Detwiler to H.D. of the Columbia, Fort Stevens.

Second Lieutenant Benjamin W. Dickerson, Jr. to 62d, Fort Totten.

Second Lieutenant William V. Downer, Jr. CA-Res to active duty, H.D. of Chesapeake Bay Fort Monroe.

Second Lieutenant Joseph D. Duffy to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant John J. Easton to H.D. of San Francisco, Fort Winfield Scott.

Second Lieutenant Charles W. Erhardt to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Herbert Evans to Panama Canal Department, sailing New York, August 13.

Second Lieutenant John A. Farrell to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant John R. Fisher to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Thomas L. Fisher, II to 74th, Camp Pendleton.

Second Lieutenant Enoch D. Flowers, Jr. to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Clifford G. Frayne to Puerto Rican Department, sailing New York, September 6.

Second Lieutenant Richard P. Fulmer to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Robert W. Garrett to 71st, Fort Story.

Second Lieutenant David G. Gauvreau to H.D. of Los Angeles, Fort MacArthur.

Second Lieutenant Willard R. Gilbert to Spartan School of Aeronautics, Tulsa, Okla.

Second Lieutenant Eugene C. Glad to Puerto Rican Department, sailing New York, September 15.

Second Lieutenant Edwin F. Gokey to Hawaiian Department, sailing San Francisco, July 14.

Second Lieutenant Elroy A. Graber to Hawaiian Department, sailing San Francisco, July 26.

Second Lieutenant Denis B. Grace to H.D. of Galveston, Fort Crockett.

Second Lieutenant John L. Gray to BBTC, Camp Davis.

Second Lieutenant Warland A. Griffith, Jr. to Puerto Rican Department, sailing New York, August 23.

Second Lieutenant William A. Hamilton, Jr. to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Frank T. Hardt to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Matthew C. Harrison to Puerto Rican Department, sailing New York, October 20.

Second Lieutenant George S. Hazard to BBTC, Camp Davis.

Second Lieutenant Alfred B. Hauft to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant James G. Healy to 39th CA Brigade, Fort Bliss.

Second Lieutenant William E. Hinemann to instructor, Coast Artillery School.

Second Lieutenant Melvin S. Herban to Hawaiian Department, sailing San Francisco, August 19.

Second Lieutenant Robert W. Hey to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Welles G. Hidgson, Jr. to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Frank B. Howze to 74th, Camp Pendelton.

Second Lieutenant Bernice F. Humphrey to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Charles M. Hursh to Puerto Rican Department, sailing New York, September 6.

Second Lieutenant Howard H. Irish, Jr. to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Alvin S. Isaacs to Hawaiian Department, sailing San Francisco, August 19.

Second Lieutenant Robert Jacobs to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Andy M. James, Jr. to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Malcolm C. Johnson to H.D. of the Columbia, Fort Stevens.

Second Lieutenant Edwin Kalbfleish, Jr. to Philippine Department, sailing San Francisco, October 11.

Second Lieutenant Charles L. Kasler to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Dean R. Keating to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant William T. Keogh to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant William C. Kilduff to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Edwin Kisiel to 36th CA Brigade, Camp Edwards.

Second Lieutenant Stephen T. Kosiorek to H.D. of Los Angeles, Fort MacArthur.

Second Lieutenant James R. Laney, Jr. to AATC, Camp Haan.

Second Lieutenant Albert B. Langeler to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Thomas F. Lavin to Puerto Rican Department, sailing New York, August 30.

Second Lieutenant Ray G. Lawrence to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Francis E. Leclear to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant George E. Levagood to Philippine Department, sailing San Francisco, August 7.

Second Lieutenant John C. Linderman to H.D. of San Francisco, Fort Winfield Scott.

Second Lieutenant Raymond A. Lopez to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant John W. Loud, Jr. to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Benjamin McCaffery, Jr. to H.D. of San Francisco, Fort Winfield Scott.

Second Lieutenant John D. McCarthy to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant James E. McElroy to H.D. of Southern New York, Fort Hamilton.

Second Lieutenant Frederick H. McKinstry to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Alexander L. Mackintosh to Hawaiian Department, sailing San Francisco, September 5.

Second Lieutenant James L. MacMullen to 96th, Camp Davis.

Second Lieutenant John B. Manley, Jr. to AATC, Camp Stewart.

Second Lieutenant Thomas Marvick, Jr. to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant George K. Mason to Hawaiian Department, sailing San Francisco, July 14.

Second Lieutenant Joseph T. Materi, CA-Res to active duty, H.D. of Chesapeake Bay, Fort Monroe.

Second Lieutenant Charles D. Maynard to 9th CA Brigade, Fort Bliss.

Second Lieutenant Thomas B. Mechling, CA-Res to active duty, H.D. of Chesapeake Bay, Fort Monroe.

Second Lieutenant Arthur L. Meyer to 40th CA Brigade, Fort Sheridan.

Second Lieutenant Robert S. Miller to Hawaiian Department, sailing San Francisco, August 5.

Second Lieutenant Raymond D. Minogue to Philippine Department, sailing San Francisco, August 7.

Second Lieutenant Alexander C. Mitchell to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Miroslav F. Moucha to 62d, Fort Totten.

Second Lieutenant Orlie J. Munson to Puerto Rican Department, sailing New York, September 15.

Second Lieutenant Dennis E. Murphy to Hawaiian Department, sailing San Francisco, September 6.

Second Lieutenant William W. Neely, CA-Res to active duty, H.D. of Chesapeake Bay, Fort Monroe.

Second Lieutenant James A. Nelson to Hawaiian Department, sailing San Francisco, September 6.

Second Lieutenant Claude G. Nicholas to instructor, Coast Artillery School.

Second Lieutenant Richard E. Nodell to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Robert L. Obourn to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant John P. O'Brien to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Homer R. Oldfield, Jr. CA-Res to active duty, Coast Artillery Board, Fort Monroe.

Second Lieutenant Ingolf E. H. Otto to Puerto Rican Department, sailing New York, August 23.

Second Lieutenant Charles A. Pace to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant John S. Pace to Fort Eustis.

Second Lieutenant Theodore W. Panneck, to 216th Camp Haan.

Second Lieutenant Frank J. Petelik, Jr. to Washington University, St. Louis, Missouri.

Second Lieutenant Bert E. Pettitt, Jr. to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Gerald R. Pfaff to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Paul E. Pigue to H.D. of Pudget Sound, Fort Worden.

Second Lieutenant Bernard Podolsky to Puerto Rican Department, sailing New York, August 23.

Second Lieutenant Jack E. Post to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Leslie F. Price to Puerto Rican Department, sailing New York, August 23.

Second Lieutenant Frank D. Pryor to Hawaiian Department, sailing San Francisco, August 5.

Second Lieutenant Henry P. Pryor to Headquarters, First Corps Area, Boston, Mass.

Second Lieutenant John G. Redmon to H.D. of Sandy Hook, Fort Hancock.

Second Lieutenant John R. Richards to H.D. of San Diego, Fort Rosecrans.

Second Lieutenant Harry A. Ripkey to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Robert D. Rotenberry to Puerto Rican Department, sailing New York, September 6.

Second Lieutenant William F. Roton, to AATC, Camp Stewart.

Second Lieutenant Donald A. Rowden to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant James W. Roy to H.D. of Delaware, Fort DuPont.

Second Lieutenant Stephen G. Saltzman to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Leonard Schuey to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Richard H. Schuler to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Martin J. Schwager to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Walter E. Scott to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Thomas W. Sharkey to H.D. of Boston, Fort Banks.

Second Lieutenant Felix C. Sharp, Jr. to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Thomas F. Sharpe, Jr. to Fort Eustis.

Second Lieutenant Phillip W. Shaw to Fort Eustis.

Second Lieutenant Robert R. Simpson to Fort Eustis.

Second Lieutenant Walter Singles, Jr. to H.D. of Sandy Hook, Fort Hancock.

Second Lieutenant John D. Skipper to Fort Eustis.

Second Lieutenant Francis G. Smith to Philippine Department, sailing San Francisco, August 30.

Second Lieutenant Henry J. Smith, Jr. to Puerto Rican Department, sailing New York, September 6.

Second Lieutenant Howard L. Speer, to Fort Eustis.

Second Lieutenant Benjamin Spiller to 71st, Fort Story.

Second Lieutenant Frank P. Stainback, Jr. to H.D. of Pensacola, Fort Barrancas.

Second Lieutenant James W. Stigers to Puerto Rican Department, sailing New York, October 20.

Second Lieutenant Frank C. St. John to Ninth CA District, Fort Winfield Scott.

Second Lieutenant Zebulon L. Strickland, Jr. to H.D. of Pensacola, Fort Barrancas.

Second Lieutenant Harry J. Taylor, Jr. to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant George L. Theisen to 40th CA Brigade, Fort Sheridan.

Second Lieutenant Arnold R. Thomas to H.D. of Boston, Fort Banks.

Second Lieutenant Emil M. Ulanowicz to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Carl H. Vogt to Puerto Rican Department, sailing New York, August 23.

Second Lieutenant Hugh E. Wandel to Philippine Department, sailing San Francisco, July 24.

Second Lieutenant Joseph H. Ward to H.D. of San Francisco, Fort Winfield Scott.

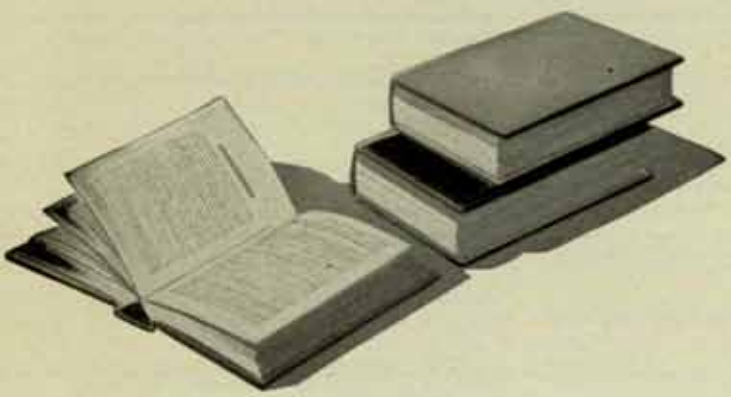
Second Lieutenant Arthur S. Wellbaum to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant Robert W. Williams to Hawaiian Department, sailing San Francisco, July 28.

Second Lieutenant John W. Yowell, Jr. to Hawaiian Department, sailing San Francisco, July 14.

Second Lieutenant Robert H. Zimmerman to Puerto Rican Department, sailing New York, September 15.

BOOK REVIEWS



The JOURNAL can supply any book in print, at the usual Association discount.

Advice For the Young Army Leader

LEADERSHIP FOR AMERICAN ARMY LEADERS. By Major Edward Lyman Munson, Jr. Foreword by Brigadier General E. F. Harding, U. S. Army. Washington: The Infantry Journal, Inc., 1941. 96 Pages; $1.00.

A fresh book on leadership in our modern American Army has been badly needed. This book, though not the final word on modern military leadership, should be of great help to every inexperienced leader in our Army who reads it. It is above all a practical aid. It should help not only the young officer, but also the noncom and the young man who will be tomorrow's leader. It should be of such help because it has sound advice in it based on years of observation, study, and reflection on the author's part, because it doesn't dodge any of the leader's many daily problems, and because it endeavors to tell in plain language how a leader should go at his big job and in the end produce a fighting unit. The book is, as Brigadier General E. F. Harding says in his foreword to it, "a timely and powerful aid to speeding up the process."

The greater part of *Leadership for American Army Leaders* is directed toward the small-unit leader, the company officer and noncom. But for all that may be true, there is plenty in it also that a major general can profit from reading and thinking over in reflection upon his own methods of leadership. In fact, one point that Major Munson might have brought out more forcefully is the fact that though a young leader may strive with much success toward perfecting his ability to lead, this very striving itself must run through the whole length of his military career. It is not within the capabilities of humankind to become the perfect leader and then give no more thought to the matter. A Chief of Staff himself has to give many a thought —and I daresay sometimes well-studied thoughts—to his own acute problems of leadership and in the process must often take stock of his own methods and character in endeavoring to avoid error.

Now reference to leaders of high rank brings us right along to another side of leadership that might possibly be considered as an omission from Major Munson's book. I refere to the effect of age upon the leader. This he does not touch upon and undoubtedly for the very good reason that he feels that a mere twenty years of service is not enough to warrant his tackling a subject both tender and tough—tender from the personal viewpoint of the leader who begins to think about the mounting years, and tough from the viewpoint of those serving under a leader who—usually without realizing it—takes out on his subordinates the worries attendant upon passing the prime of life. But perhaps the author is right in not considering this particular aspect of leadership, since it is plain to see that he has the young leader mainly in mind. I suggest, however, that in revising for future editions—this book has too much good stuff in it not to become permanent and go to several editions—the author considered including a chapter on the problems of the maturing leader.

Leadership for American Army Leaders shows no sign whatever of ideas adopted directly from foreign thought on its subject. It has a purely American slant and this especially adds to its value. You have but to read a British or Australian book on military leadership, not to say a Nazi one, to realize how different in many major and minor respects are the problems of leading men in our own Army. The book contains a number of illustrative passages but a few more still would have been helpful. There are very few abstract discussions of the qualities of leadership in the book and all that it does contain are brief. It gets down to business and stays there most of the time. The style of writing is likewise generally straightforward, though there are one or two signs of haste in it.

But actually there is need for haste in getting a sound book like this into the hands of those who can make good use of it. The new American military leader often finds himself at a loss, and such a book as Major Munson's is straight up his alley. The older military leader himself is running into new problems, and for him as well there should be helpful assistance in *Leadership for American Army Leaders.*

Bomb-Proofs

AIR RAID DEFENSE (CIVILIAN). By Curt Wachtel. Brooklyn: The Chemical Publishing Company, 1941. 224 Pages; Index; $3.50.

PLANNED A.R.P. By Tecton, Architects. Brooklyn: The Chemical Publishing Company, 1941. 138 Pages; Illustrated; $3.50.

Mr. Wachtel's treatment of the subject is the more general of these two books. Understandably (considering his background as a disillusioned German scientist) he goes into the psychological, economic and political aspects of air raid defense, as well as touching on the more technical details. The burden of his story seems to be that we should rely on our own engineers and our own knowledge of conditions in America when planning for air raid defense, rather than importing expensive so-called experts; and that with modern aircraft development we are wasting time . . . not taking advantage of our opportunities to plan now, *before* we are attacked.

The Tecton book is a report by a firm of British architects who studied the problem of structural protection of the Borough of Finsbury, in London, against air attack. Although the study covers one area with its own peculiar problems, the method of the study and the conclusions drawn should be of great interest to those who approach the problem of protecting any of our cities. Messrs. Tecton have based their conclusions not on structural engineering data alone, but on a large field of research including such items as the habits of the people in the defended area, drainage problems, and human behavior in crowds. As an example of pure scientific research—even as a particularly complete "estimate of the situation"—it should make good reading for any scientific-minded individual. Although their conclusions as to the best methods for Finsbury probably would not hold good for Milwaukee or Buffalo, their approach to the problem should be instructive to any air raid planner.

* * *

Winston Churchill

A ROVING COMMISSION: The Story of My Early Life. By Winston S. Churchill. New York: Charles Scribner's Sons, 1941. 370 Pages; Illustrated. $1.75.

This is the story of the early life of one of the world's leading figures, Britain's "Winnie." It is written in his usual entertaining style. In view of the fact that his early training is having such a definite bearing on world affairs today, the book is important.

Although Churchill was born into the highest circles of the British aristocracy he was able to discharge his responsibilities to his country without losing his touch with the common man. The American army officer, reading this autobiography, will criticize Churchill's string-pulling to obtain what he wanted because it is not the approved American way, but it was common in England at the time. That Churchill was more adept at the art than most is hardly to his discredit.

The vigorous mentally-alert youngster who played polo in India, who took part in the charge at Omdurman, and who fought and wrote in the Boer War was no gilded son of the idle rich, content to sit back and coast on family

fortunes and reputation. He lived intensely, wrote effectively, and remained a thorn in the garden of smug satisfaction that decorated his country in its successful days of the late 1800's.

Churchill's great sadness, as outlined in the book, is the trend of modern warfare, away from the professionals who made fighting a thing of excitement and beauty in which few expected to be killed to the present-day mass slaughters of soldiers and civilians alike. It is hard to disagree with him on this point.

To the soldier, the author's comments on the Boer War are especially valuable. The bumbling commanders, lacking in the mental alertness and flexibility which we are taught are the attributes of the leader, were responsible for many unnecessary tragedies and undue prolongation of the war. As a guide of what *not* to do, the portion on Boer War tactics will instruct the military reader.

It is seldom that we find valuable food for the mind presented in as sprightly a fashion.

* * *

Sea Stories

ACTION STATIONS! By Bartimeus (Captain Lewis Ricci, R.N., C.V.O.), Boston: Little, Brown and Company, 1941. 262 Pages, $2.00.

Here are fourteen short sketches of action in the British Navy, and a preface by William McFee, who doesn't write bad sea stories himself. It would not be quite correct to call the sketches stories, since they are merely moments from the lives of characters in the big story—the present war. There are no plots in the sketches, and the few traces of love interest are almost impersonal.

There is much of the so-called British brand of heroism—the quiet, half-humorous feeling of "a man does what he can, and what he's told; if it happens to be spectacular that's embarrassing but not particularly noteworthy."

McFee calls Bartimeus the present-day Marryat, but that is not quite a valid comparison. Marryat, in the style of his time, wasted words. Bartimeus makes every word count, every syllable does its part to give the reader some inkling of the lives of those who are engaged in the Battle of the Atlantic.

The book opens with Dunkirk and closes with the Bismarck. It takes us along on mine sweepers, planes of the Fleet Air Arm, submarines, battle wagons, merchant ships and destroyers. It is a volume for adults—the heroics are soft-pedaled, but the lives and the love of country of the characters are portrayed with understanding.

* * *

CAPTAIN PAUL. By Commander Edward Ellsberg. New York: Dodd, Mead and Company, 1941. 608 Pages. $2.75.

If you like stories of sailing ships, sea battles, and adventure in man-sized portions, this is it. The fact that the book also is rather authentic from an historical standpoint and contains many examples of the futility of mixing politics and the conduct of the military service, makes it more enjoyable, and that more valuable.

Most of us will admit, from our reading of schoolbook history, that John Paul Jones was quite a man. His

ploits during the Revolutionary War have stood the test of even the more conscienceless of historical debunkers. In this book, Commander Ellsburg removes the halo and the blinding glory from the doughty fighter and makes him a flesh-and-blood creature—a soft-spoken, courageous and efficient sailor and patriot.

Writing from the standpoint of a young Nantucket midshipman, the author gets very close to his subject. Commander Ellsberg has done a creditable job with John Paul Jones. It is one of those books that makes one glad to be an American.

* * *

Naval Development

SEA POWER IN THE MACHINE AGE. By Bernard Brodie. Princeton: The Princeton University Press, 1941. 451 Pages; Index; $3.75.

Here is the story of how modern navies developed. Beginning back in the days of sail, Mr. Brodie (a former National Guard Field Artilleryman) traces the step-by-step progress of naval design.

The development of warships followed the unfolding of industrial progress. Industrial progress, in turn, was influenced largely by naval power. Political considerations influenced, and were influenced by, both naval and industrial progress. Mr. Brodie has done a fine job of evaluating the effects and cross-effects of these three world forces.

The portions of the book that deal with the older historical phases of the development of sea power are interesting, but the real meat of the book is the "inside" story. It tells of strategy and naval tactics beginning with the World War and continuing to early in 1941.

Possible reasons—good ones—for Britain's reluctance to use convoys in the early stages of the World War shed a new light on the "stupidity and stubbornness" of which some writers accuse the Admiralty. Speaking of the Norwegian fiasco and the occupation of the Channel ports by the Germans in 1940, the author says, "In the light of afterevents, it is clear that the most pressing need of all for British defence against the submarine was the possession of a land force and air arm powerful enough, when put beside Britain's Continental Allies, to prevent the German Army from reaching sea ports outside the Heligoland Bight."

The new torpedoes, propelled by hot gasses and steam instead of compressed air, leave a very slight wake, scarcely noticeable except under ideal conditions. This is but one of the reasons for the gravity of the present Battle of the Atlantic. New torpedoes have favored the attacker—new detection devices have aided the defense. Thus it has been, with the introduction of steam propulsion, armor, and the armor-piercing projectile. Almost every improvement has been followed by its antidote—but sometimes too late to be of assistance in the particular war at hand.

Power-propelled warships have increased the speed of warships, but have, in a large sense, decreased their radius of action. The sailing ship was restricted in radius of operation only by the availability of food and water—the power-operated vessel must have fuel. Along the same line, the author points out that a battleship with phenomenal range is still restricted on long cruises because the destroyers and other small craft needed for today's naval engagements

cannot stay at sea long enough to enable the fleet commander to take advantage of the long range of his capital ships.

The Coast Artilleryman cannot help but be interested in navies, our own and others. This book offers what has been called a "good smattering" of navies and their development, as well as their influence in world history.

* * *

Island Base

NEWFOUNDLAND: OUR NORTH-DOOR NEIGHBOR. By A. C. Shelton. New York: E. P. Dutton and Company. 1941. 116 Pages; Illustrated; $3.50.

Here are page after page of pictures of Newfoundland, a place that demands more than passing interest to those in the military service. If it is true that pictures don't lie, service at this new base should be very pleasant—at least for those of us who like fishing, whether salt- or fresh-water, and who get pleasure from camping out. Add a touch of quaintness to the beautiful scenery, and the whole prospect does not seem too dismal.

* * *

England Again

BLOODY BUT UNBOWED: PICTURES OF BRITAIN UNDER FIRE. Edited by Ernestine Carter; Preface by Edward R. Murrow. New York: Charles Scribner's Sons. 1941. 109 Pages; $1.00.

Here is a group of pictures that express the grim facts that confront a city at war. In Mr. Murrow's preface he states, "The pictures were selected with great discrimination. I would have shown you the open graves at Coventry—broken bodies covered with brown dust, looking like rag dolls cast away by some petulant child, being lifted in tender hands from the basements of homes. This book spares you the more gruesome sights of living and dying in Britain today."

The book is frank and open propaganda—but *convincing* propaganda, superbly photographed and superbly edited. These pictures should be a potent argument for preparedness. It would be hard to see what is happening to England, and then place our hopes for escape on anything but a military establishment that would deter any potential enemy from attack.

* * *

Straight Shooting

THE ART OF HANDGUN SHOOTING. By Captain Charles Askins, Jr. New York: A. S. Barnes and Company, 1941. 214 Pages; Profusely Illustrated; Index $2.50.

Here is more hand-gun lore than the average soldier will ever need, but it is all nevertheless interesting. Captain Askins, although the winner of a long list of important matches and the holder of several world records, does not lose sight of the practical side of handgun shooting. As instructor for the Border Patrol, he was more interested in practical shooting than in match shooting. The book seemingly takes in everything, from choosing a pistol, through

the various ramifications of match shooting, to killing game and to self-defense.

The author thinks little of the accuracy of the service automatic on a target range, but he is enthusiastic over its capabilities for the job for which it was designed. It is his idea that no soldier should ever waste his target practice time firing at a bull's-eye—that he should concentrate on bobbing and running silhouette targets, as well as the "Hogan's Alley" arrangement as used at Camp Perry. For military work, he believes in using the pistol for short range, last ditch defense and trench fighting; and that practice should keep these uses in mind.

For anybody interested in any phase of handgun shooting, whether he be beginner or expert, there is much in this book. Many illustrations and a down-to-earth style make it easy to understand and pleasant to read.

* * *

Ammunition For Democracy

MY NEW ORDER. Speeches by Adolph Hitler. (Edited by Raoul de Roussy de Sales; Introduction by Raymond Gram Swing.) New York: Reynal and Hitchcock, 1941. 987 Pages; Index; $1.89.

Here are Hitler's major speeches, edited and commented on by Mr. de Sales, presented in a manner that is easy to read and easy to understand. The contradictions, the brushes with the truth, and the rhetorical tricks that have won many people to a social concept foreign to everything Americans value, are set forth for any thinking person to study.

Most of us know of the broken promises and the bare propaganda that has made totalitarianism the menace we find it today, but few of us know enough definite facts to confound those misguided persons who try to change our own views to agree with their own. Here, from the very words of the leading exponent of totalitarianism, are the arguments to strengthen our faith in democracy and to void the arguments of those who favor foreign forms of government.

The danger to America, physically as well as morally, is set forth, albeit between the lines in many instances, in clear form. The words that have won more victories than the German army are here to be analyzed. The commentary by Mr. de Sales is especially valuable to those of us who have forgotten the circumstances surrounding each speech.

* * *

A Glimpse of the Future

NOSTRADAMUS: THE MAN WHO SAW THROUGH TIME. By Lee McCann. New York: Creative Age Press, Inc. 421 Pages; Illustrated; $2.50.

Great wars, somehow, seem to turn many minds to the mystic and the supernatural. During the present unpleasantness the prophecies of Nostradamus, a Sixteenth Century physician, have been interesting a growing number of people over much of the world.

Miss McCann gives us a slightly fictionalized biography of the man whose phophecies are supposed to be uncannily accurate, even foretelling the present war and its outcome. It is unfortunate that the reader finds it hard to separate the fiction from the fact—a situation that carries over into

the author's interpretations of the prophecies, which are written in obscure style. Miss McCann makes a case for the obscurity, stating that this was done deliberately to assure that the better minds of the centuries to come, would, by their very attempts to interpret the prophecies, keep interest alive in Nostradamus' works. The reasoning seems a trifle strained.

However, *Nostradamus* bids fair to be as important in drawing-room conversations this year and next as was Mah-Jong in the Twenties, and Miss McCann does give us a good biography and many possible clues for interpretations of the prophet's verses.

* * *

Army Organization

BUILDING AN ARMY. By Lieutenant Colonel Edward S. Johnston. Harrisburg: Military Service Publishing Company, 1941. 159 Pages; Glossary; Index; $1.00.

Here, at last, are the answers to many questions that the average officer, especially the officer who has never served a tour in Washington, has long wanted explained. Just what has been done, what is being done, and what will be done by the Army in this emergency, and how, is explained by Colonel Johnston in a manner at once clear, concise, and interesting.

There is fine ammunition in this short volume to answer the curbstone critic who expects an army of 117,000 to expand ten-fold without a hitch, without a misspent dollar, and without inconvenience to the soldier or the public. The "experts" who consider the War Department a glorified gentlemen's club will find that much-abused organization a rather efficient and effective implement of national defense.

Colonel Johnston has packed a wealth of valuable material on organization, supply, personnel, and the other elements of successful mobilization into this little volume. No other book in the reviewer's knowledge contains as much information about how the higher echelons of the army operate, why they operate the way they do, and what they have accomplished and are trying to accomplish.

The book (written primarily for civilians) ends with a stirring appeal to self-appointed critics and experts to step aside and let the army do the job for which it is prepared, not by snap judgment based on newspaper columns, but by study and experience.

* * *

Spanish Text

CURRENT SPANISH. By José Martinez. New York: The Paulist Press, 1941. $1.00.

Current Spanish, as the title implies, is a practical and simplified textbook designed to meet the needs of the student who wishes to acquire a speaking knowledge of the language without delving into the intricacies of its grammar.

The author is one of our ablest teachers of modern languages and a recognized authority on his native tongue. His present position as instructor of Spanish at the United States Military Academy has given him a keen concept of the army's requirements. This textbook is unique because, in addition to a complete compilation of modern conversational material, it contains military terminology which would be difficult to find in any other work.

Anyone familiar with the contents of this small volume should be able to converse naturally and correctly in modern Spanish, avoiding the stilted, artificial style so common to the student of a foreign language. Languages change through common usage, so "written Spanish" differs considerably from the current spoken version. This attractive little pocket-style edition should thus be an invaluable reference book for the scholar who is making a comprehensive study of Spanish, as well as for the beginner with limited time to devote to the subject.

* * *

Advertising in Wartime

MODERN PUBLICITY IN WAR. Edited by F. A. Mercer and Grace Lovat Fraser. New York: Studio Publications, 1941. 128 Pages; Illustrated; $4.50.

It is likely than any American taste for British humor or British advertising is an acquired one. By our own American standards, a large proportion of British publicity has been heavy-handed, or on the opposite swing, obscure. We have had, as well, little enthusiasm for their typography.

Modern Publicity in War (the 1941 issue of *Modern Publicity*, the British advertising yearbook), proves that our English friends may do the job in their own way—but they do it. The book is largely made up of reprints of wartime advertising, governmental and commercial. The text portion is comparatively short. But in both text and reprints, the reader obtains a broad survey of how British public opinion is being molded by means of the printed page. The material on motion pictures and radio is very short (radio, of course, is not commercial in Britain) because this volume is primarily an advertiser's yearbook.

The observations of Mr. John Gloag, one of England's leading publicists, in the forepart of the book are sparkling paragraphs dissecting wartime propaganda and British psychology. England's (and the Empire's) good-humored determination to win the war is evident in every page.

To this reviewer, the high point in effective advertising was a poster, portraying Winston Churchill in the finger pointing Uncle Sam pose of our last war effort, with two stirring words—DESERVE VICTORY! The nation whose efforts to mold the opinion of its citizens takes the form of the publicity surveyed in this book deserves victory, and in all probability, will gain it.

* * *

Cartoon History

LOW ON THE WAR. By David Low. New York: Simon and Schuster, 1941. 157 Pages; Illustrated; $2.00.

David Low's reputation as a cartoonist has been of the highest in this country as well as England—but few of us knew that he was a top-flight political essayist and philosopher as well. His cartoons are as delightful as ever. Low can be bitter and humorous at the same moment. His economy of line and his delineation of facial expressions both make for good cartooning art. But to this reviewer, the introduction to *Low on the War* was a totally unexpected pleasure.

The introduction is 5,000 of the most pointed words that have come out of the present conflict. Mr. Low says what he thinks of dictators, appeasers, bumblers, and other forms of life in phrases that alternate between sheer slang and prose poetry. I quote:

"If not wise before the event, it is well to be wise after. Dig in the dry and withered stalks and plant spuds for Victory, sirs. The Versailles Peace and the League are dead. Their best features, like Christianity, were never tried; their worst gave color to liars. To put a patch on prewar 1914 was not the way to mend the economics of postwar 1918. The days of dog-eat-dog having arrived in industrial nationalism, peace and security were not to be assured by the creation and consolidation of a lot of national fortresses, each complete with walls, battlements, and drawbridges. 'Safety First,' 'Isolation,' and 'Appeasement' were not effective measures against chaos in the face of a determined destroyer. If U. S. A. had not withdrawn . . . If Britain had not refused . . . If France had not objected . . . If your uncle had been your aunt . . . If . . . If . . . If . . ."

Low knows his international politics, and he knows cartooning. The result of the combination, set out in this volume in chronological order, and aided by short editor's notes to orient the reader, are like a capsule history—and an easy-to-swallow capsule at that.

* * *

Writer's Reference

HOW TO WRITE CORRECTLY. By Archibald Currie Jordan. New York: Reynal and Hitchcock, Inc. 186 Pages; Index; $1.50.

The weakness of most books of the "how to write correctly" group is that they are designed either for illiterates or for gray-bearded grammarians—there seems to be no middle ground. The person with a fair knowledge of grammar and syntax who wants to check some point that is vague at the moment, has been neglected when the books were written. This book takes the middle ground.

The book is well indexed, clear in its rules and examples, and put together in logical order. Especially helpful to the budding author are the sections on footnotes and bibliographies, and the appendices.

* * *

Facts and Colored Pictures

THE UNITED STATES ARMY. By Lieutenant Colonel Earl C. Ewert. Boston: Little, Brown and Company, 1941. 72 Pages; Illustrated in Colors; $1.25.

Although no soldier with more than a few months experience will *need* this book, it is still a nice thing to have around. It tells how the army is put together—and why—in language that is easy for a civilian to understand, and the illustrations should delight anybody, civilian or soldier.

Colonel Ewert was formerly Chief of the Public Relations Branch, and is now in command of the reception center at Fort Bragg. It was under his direction that *The Army of the United States* was prepared. All of which indicates that the author is well qualified to write a book of this sort.

The outstanding characteristic of the volume is that it is neither bombastic nor high-pressure—it is a calmly written and well-illustrated explanation of what the army is, and why it is that way, slanted at the civilian, rather than the soldier.

One illustration, showing a left-handed *present arms*, is unfortunate—but the book can hurdle that handicap without faltering.

* * *

Better Late Than Never

THE ARMY WIFE. By Nancy B. Shea. New York: Harper and Brothers, 1941. 288 Pages; Index; $2.50.

Why didn't somebody think of this before!

The reviewer, being a Reserve officer, doesn't know as much about army customs as he might, and the reviewer's wife knows even less. *Officers' Guide* and *Moss's Manual* were very helpful for the male side of the family, but the better half was forced to proceed by the trial-and-error system, with almost as many errors as trials. *The Army Wife* is as important to the young officer's wife, or the Reserve officer's spouse, as is *Officers' Guide* to the officer himself—and that is high praise.

Mrs. Shea admits that customs differ and that her answer may not be the correct one in every instance, but it is many times better than no answer at all. This combination of a military etiquette book, budget guide, and text on household management should be in the hands of every new army wife at least several days before she takes that status.

From menus to dress materials, from shopping guide to thank-you cards, from funerals to golf, Mrs. Shea has missed few tricks. Read intelligently, with allowances made for the fact that the author could be wrong (as she admits more than once), many a mortified blush and many a dollar will be saved.

* * *

Bunglers in High Places

MEN OF EUROPE. By André Simone. New York: Modern Age Books, Inc., 1941. 330 Pages $2.50.

Here are interesting sketches of the lives of the politicians, statesmen, and racketeers who have brought Europe and the world to the present deplorable situation. M. Simone (pseudonym) has known the great and the near-great of Europe, and this book is a combination of the results of his observations and of the actual histories of the individuals concerned.

Following the character sketches, it is not hard to see why Europe today is a blazing madhouse. For the reviewer, the book was slightly marred by the author's evident bias in some parts, thereby casting doubt upon the fairness of the rest of his characterizations.

* * *

WE DIVE AT DAWN. By Lieutenant Commander Kenneth Edwards. Chicago: The Reilly & Lee Company, 1941. 403 Pages; Illustrated; Index; $3.00.

The personal experiences of a retired officer of the Royal Navy. The book contains much submarine lore and gives us an interesting personal slant on the activities of the submarines of the British Navy during the World War and for a number of years afterward.

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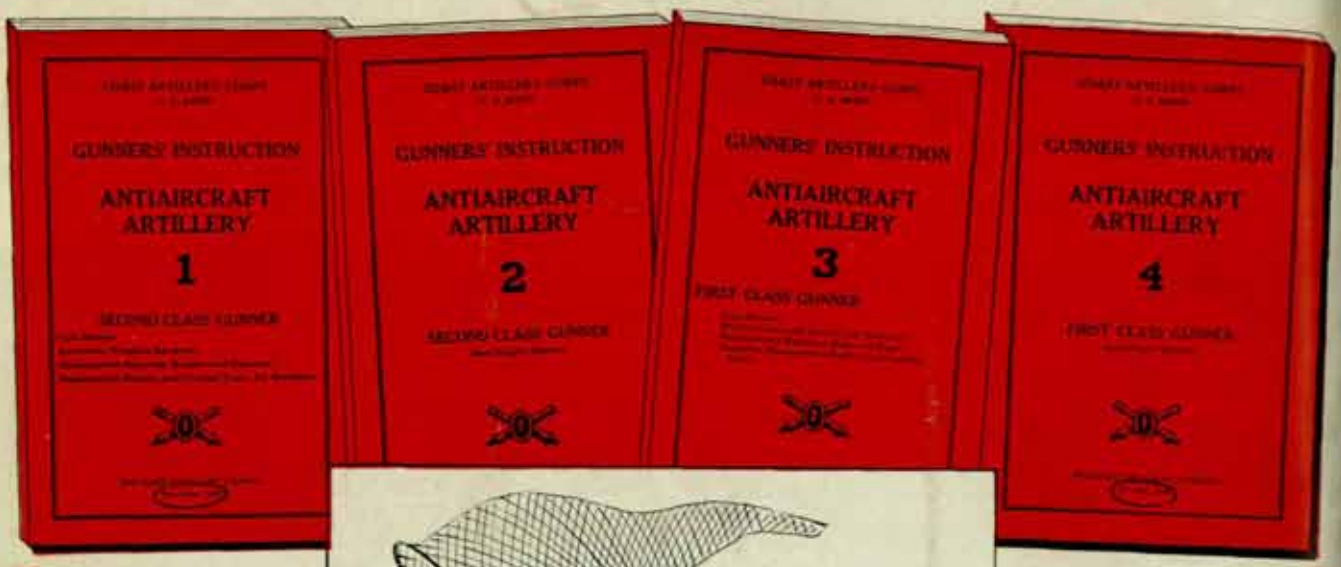

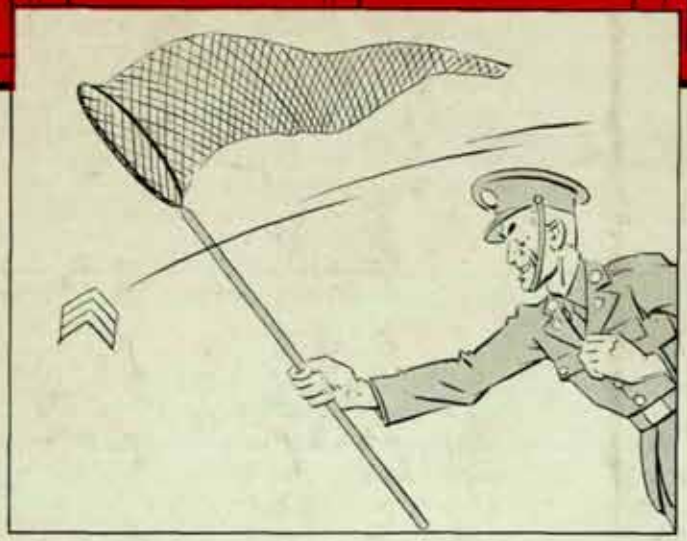

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