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COAST ARTILLERY JOURNAL

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CORREGIDOR'S

The last message from Corregidor, on May 5, is reproduced here primarily because the *Journal* has been, for many years, an important reference source for military historians. Here is history as it is made, without embellishment, and without conscious color. A soldier stuck to his post to the very end—he was only one of several thousand Americans who did what they could. One of war's greatest mass dramas is here typified by the heroism of an individual pounding his key, telling the world of the last moments of military life on Corregidor. He fulfilled his military mission to the final second before the enemy snatched his fingers away to break the last thread of communication from Corregidor to the mainland.

"They are not near yet. We are waiting for God only knows what. How about a chocolate soda. (Pause.) Not many. Not near yet. Lots of heavy fighting going on. (Pause.)

"We've only got about one hour twenty minutes before . . . (Pause.)

"We may have to give up by noon, we don't know yet. They are throwing men and shells at us and we may not be able to stand it. They have been shelling us faster than you can count . . . (Pause.)

LAST BREATH

"We've got about fifty-five minutes and I feel sick at my stomach. I am really low down. They are around now smashing rifles. They bring in the wounded every minute. We will be waiting for you guys to help. This is the only thing I guess that can be done. General Wainwright is a right guy and we are willing to go on for him, but shells were dropping all night, faster than hell. Damage terrific. Too much for guys to take. Enemy heavy cross-shelling and bombing. They have got us all around and from skies. (Pause.)

"From here it looks like firing ceased on both sides. Men here all feeling bad, because of terrific strain of the siege. Corregidor used to be a nice place. But it's haunted now. Withstood a terrific pounding. (Pause.)

"Just made broadcast to Manila to arrange meeting for surrender. Talk made by General Beebe. I can't say much. Can't think at all. I can hardly think. Say, I have sixty pesos you can have for this week-end. The jig is up. Everyone is bawling like a baby. (Pause.)

"They are piling dead and wounded in our tunnel. Arms weak from pounding key long hours, no rest, short rations, tired . . . (Pause.)

"I know now how a mouse feels. Caught in a trap waiting for guys to come along finish it up. Got a treat. Can pineapple. Opening it with signal corps knife. (Pause.)

"My name Irving Strobing. Get this to my mother. Mrs. Minnie Strobing, 605 Barbey Street, Brooklyn, N. Y. They are to get along O. K. Get in touch with them soon as possible. Message. My love to Pa, Joe, Sue, Mac, Garry, Joy and Paul. Also to my family and friends. God bless 'em all, hope they be there when I come home. Tell Joe wherever he is to give 'em hell for us. My love to you all. God bless you and keep you. Love. Sign my name and tell mother how you heard from me. (Pause.)

"Stand by . . ."

Nothing further was heard from Corregidor.

THE REAL THING

★★★★★★★★★★ ★★★★★★★★ ★★★★★★★★★★★★★★★★★★★★

What does that last Training Directive you received from higher headquarters mean to you? Did you really read it and think about it or did you just look at it to see what you would have to write in your own directive to conform to its provisions?

Is a Training Directive a live thing to you that you are following conscientiously? Above all, are you putting your own personal punch into carrying out its provisions? No higher directive can mean anything if you do not supply the personal energy to see that its printed words of today become your unit's war knowledge of tomorrow.

Men in service today have a definite objective before them. Contact with the enemy must be secured and he must be beaten. The idea of the job ahead is definite in every man's mind—but the manner of doing it is not. Your men realize that the quicker they are trained the sooner will action come: the quicker combat arrives, the sooner will the enemy be defeated—if we are adequately trained. It is your job to train men adequately. They are anxious to learn and willing to play the game, but they must know the rules.

Instruct in language they understand. Put some vitality in your manner of action and in your manner of speech.

Read the following *Notes on Training by a Coast Artillery Commander in an overseas theater and take them to heart. They were written by one who knows the game and knows how to teach its rules in words that any subordinate will understand and recognize as "*The Real Thing.*"**

*Written by Lieutenant Colonel L. M. Guyer, CAC, for the command of Brigadier General Robert C. Garrett.

★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★

To the unit commander:

You are a leader of men, at war against an enemy who is cunning, determined, well supplied, and highly trained. He has been prepared for this war by concentrated, all-out training measures which have made him individually and collectively a skilled and ingenious enemy. In the words of a flight lieutenant who was recently in Malaya: "These fellows know more tricks than will ever be learned by the Germans . . . the first attack, believe me, will surprise you."

Your enemy knows his job. He knows his equipment and how to use it. He knows how to overcome obstacles by utilizing any and all immediate means at hand. He is not going to be stopped either by halfway preparations or halfway fighting. When the attack begins he's ready.

The question is: Are *you* equally ready? Do *you* know *your* job? *Do your men know theirs?*

And do you honestly realize that readiness for battle is a matter of hard and intelligent training. Or are you waiting for the fight to begin in order to find out?

As the responsible commander of your men do you know they are ready—or do you simply *think* they are? Or *hope* they are? Is your unit one of those in which inspections revealed there were men who had never seen a first-aid kit opened? Who did not know how to set their rifle

sights? Who knew little or nothing about scouting, cover and concealment? Whose gas masks had broken eyepieces? Whose bayonets would not fit on the studs of their rifles? Do you think the bayonet of the Japanese soldier is not going to fit when he needs it?

Are you driving hard, every possible hour to train your men individually and as a unit to be more than a match for their enemy? Or are you loitering, leaving to chance your duties as a leader, your responsibility to every man in your command to teach him to outsmart and outfight any enemy, both as an individual and an artillery team?

Higher authority can and does plan the scope of training which will properly train your men and your unit for combat. But the implementing of this training is yours—you are the unit leader who has the final responsibility and the ultimate close contact with the soldier himself.

Refer to your training directive. Study it carefully; comply with it exactly. It has not been hastily written, or written just to fill time, to get out another memorandum. On the contrary, it has been carefully written, every word of it. It has been the subject of much thought and planning. It is based upon the long experience of your commanding general, who is not guessing at what needs to be done to train both you and your men. He *knows*. He knows also the difficulties you are up against, the time you have available, and the urgency of the mission before you. And these, too, have been carefully considered in assigning you a training task you *must* accomplish.

The training objectives as stated in the directive are a vital goal to be attained by you in training your men as individual combat soldiers and your unit as a combined combat team. You would do well to frame these objectives and put them up where you will never lose sight of them, where you will see them daily, confronting you with a direct and honest question: "Am accomplishing these objectives—*all* of them?"

The Coast Artillery individual and battery are no longer protected "concrete" soldiers facing a single seaward front. The initial attack may come from any direction. It may be made by air, by massed infantry advancing from the rear, by paratroops, by heavily armed infiltration units. You may well find yourself engaged in an all-out ground battle before you have ever seen a hostile naval vessel or fired a single artillery shot.

Consider the objectives stated in the training memorandum. Visualize the individual soldier standing before you. Visualize him from head to feet. Have you taught him that the inside head-band of his helmet is adjustable, or does he neglect wearing it because it pinches his head? Have you taught him the location of neck arteries, or is another soldier someday to die because this man of yours didn't know how to apply a tourniquet? Have you taught him to wear his identification tags; do you inspect to see that he does? Have you taught him how to adjust, wear, and care for his gas mask? How to use his bayonet? His rifle? Have you taught him what armor-piercing small arms ammunition is for and why it is issued? Or is your automatic rifleman going to fire at a landing boat with ball ammunition, while the armor-piercing he needs remains in his belt—or in an ammunition storage box somewhere? Have you inspected his shoes, taught him the importance of caring for his feet? Or are the soles worn half through, and would this soldier soon be without any shoes at all if he were suddenly cut off from his unit and isolated in the field?

Can he scout, make his way as silently through brush as the Japanese? Could he use a compass if he had to? Can he dig a foxhole, a hasty trench? Does he know whether the barbed wire in front of him is properly or improperly strung to protect him? Can he throw a grenade? Identify gas? Carry a message and get to his destination? Have you taught him, every man, enough about the machine gun and automatic rifle so that if his own weapon were gone, or if a regular machine-gun crew became casualties, he could step in and load, sight, and fire those weapons?

Have you taught him gunnery, or merely how to mechanically operate an instrument without understanding it? Can your deflection-board operator also operate the range-percentage corrector? Could the chief-of-breech become gun-pointer if he had to?

Have you taken advantage of the God-given intelligence of the American soldier and taught him the WHY of some of these things? Or are you still in only the who-what-where-and-when

stage? Do your men generally know the principles of a defense plan? Do they know coast artillery tactics? Basic infantry tactics? Do they know the mission of your own unit and how you propose to accomplish that mission? Have you passed on to them vital intelligence information about the enemy? How he operated in Malaya, and Singapore, and Java? How he is equipped? How he attacks? The ruses and trickery he has displayed—and will display again? Do your men know, for example, that the Japanese from boyhood practice and pride themselves on use of the bayonet?

The same type scrutiny may be made of your unit training as a whole. Have your men practiced your local defense plan, or is it just on paper or still in the talking stage? Do your men as a unit know the principles of ground combat? Have you ever actually practiced them? Do you know with certainty that you can carry on your primary artillery mission no matter what happens or is your artillery drill a peacetime routine? Can you conduct fire if *all* communications go out? And do you know that at Hong Kong this was exactly what happened? Could you conduct fire under a simultaneous air or gas attack? Could you adjust fire based on only such spotting as you, yourself, can accomplish at the guns? Do you realize that naval targets may be fast-moving, fast-maneuvering, and smoke-screened? Have you trained your first sergeant, your next senior sergeant, *and* the next senior sergeant, to fire your guns skillfully in case you and your other officers become casualties? Have they ever actually practiced doing it? Have you given your enemy credit for knowing your battery location, your methods of fire control and adjustment? Have you tried to visualize every emergency that may arise and prepare for those emergencies? Have you drilled and trained your unit in what to do when these things happen?

These are some of the objectives, and their accomplishment all has the same answer: The training you give your men *and how you conduct it.*

Consider the training memo again as to conduct of training. The manner in which good thorough training is conducted is as important as the nature of the training itself. There are vital precepts which inexperienced officers all too seldom know.

The first and foremost is "know your stuff," know your own job. Never get up before a group of men and read to them from a field manual or other text. To do so is an admission of ignorance and inability on your part. If the material to be covered is new to you, study it before you begin instruction. Ninety per cent of leadership is the confidence men have in their leader that he knows his job and knows what he's talking about.

Supervise your training. Supervision means actual physical presence and participation. It does not mean staying in the battery office or performing other duties. Neither does it mean an assembly of two or more officers standing off to one side and chatting while a noncommissioned officer conducts the training.

Keep a record of training progress. Elaborate charts and colored pins for the battery office may look well, but they are too often not an honest record of accomplishment. What the unit commander needs to know is the *exact* training status of every man—has Brown finished gas instruction, has Smith completed bayonet instruction. If instruction has been only partial the record should so indicate. If a man has had no instruction at all, the fact should stand out. Otherwise, someday Brown is going to be the first gas casualty, and Smith is going to be bayoneted.

Utilize the value of training films and slides to the utmost possible extent. Remember that one picture is worth ten thousand words. But also remember that pictures and words by themselves will not suffice. All theoretical instruction must be followed by practical application. No man ever learned agility and skill in use of the bayonet just from pictures and words.

Note carefully the list of training topics attached as an inclosure to the training memorandum. These have been carefully selected. They will be given top priority. Many of them have been broken down into sub-topics. One reason this was done was to indicate to you that most field manuals contain vastly more information of value than you realize. Dig into your manuals. The title that shows from a bookshelf is not even a partial indication of the many important subtopics that lie within.

Gunners' instruction pamphlets are valuable aids if you use them properly. But if used only to teach a man to parrot the printed answers to the printed questions, they are worse than valueless. For his answers will indicate a knowledge he does not possess.

Do not assume that a man is trained because he once qualified as an expert observer or once had rifle marksmanship in a replacement center. Training is an unending procedure, and plenty of "experts" have a lot left to learn.

Take advantage of spare moments. How many of you, for example, during the dark of early alert periods have utilized this period to talk to your men, to instruct them, to teach them how they can determine direction by the North Star, or to discuss night tactics or night fire-control?

The general plan in the training memorandum allows time for ample "breaks" or rest periods. Take advantage of these. Training that becomes tedious defeats its own end. Ten minutes of hard, alert, energetic work is worth two hours of dawdling and tedium. For the same reason vary the instruction given. Demand that your men pay attention during instruction and realize that it is part of your job to keep them interested.

Never bluff. You won't fool an American soldier—not for long anyway. If you don't know the answer to a question be frank and admit it, and say you will find out the answer. Above all, be sure that you *do* find out.

Plan your training to be progressive. Select an important topic your men need to know and see it through. If your training schedule is just a printed list of assorted topics to look busy and imposing, you will be no farther along next month than you were this month.

There is still a further point to effective training, and that is the welfare and high morale of your men. You cannot expect a man to respond enthusiastically to instruction when he is uncomfortable, carelessly fed, dirty and deprived of a bath, poorly quartered even under field conditions, or dull spirited because he has had no relaxation. Look to your men's comfort, their mess, their quarters, their recreation, their every need. Especially look to the welfare of those men in isolated stations and positions. Would *you* like to be serving up at the end of some of those long upward trails, day after day without being relieved, unbathed and without a place to bathe, night after night without a light to read by, a place to write, a comfortable place to sit?

Don't say these are war problems that can't be licked. They *can* be licked. A good unit commander who has the interests of his men at heart has the eye to see what's needed and the energy and resourcefulness to see that it's supplied.

And don't stop halfway either. "Eyewash" may be a term you last heard in peacetime, but it has a wartime value as well. It has a direct and immediate effect upon the morale and organizational pride of your men, and the impression which others get of the general condition and efficiency of your unit. A little paint on the inside of bunkhouse walls—men's names neatly lettered on signs before their tents—racks for clothes—holders for knick-knacks—a neat log railing around an outdoor drinking fountain—whatever name you call them, eyewash or not, they raise men's morale. They turn a camp into a home. They change dreary surroundings into something pleasant to look at and cheerful to endure.

You have a big job to do, a hard and vital one—a life-and-death job that nobody else can do for you. It is beside the point to think in terms of victory or defeat. *If you think in terms of your men* all else will take care of itself. Think of Private Jones, a soldier in your unit. Tomorrow an attack begins. Have you seen to it that Private Jones is ready and trained to do his job? Are you willing, after it is over, to think back on the duties and responsibilities you had and to carry for the rest of your life the knowledge you failed to meet them? Are you willing, after it is over, to face the mother and father of an American soldier named Jones and answer the question they are going to demand of *you?*

"Johnny? Yes, I knew him. He was in my battery; he was one of my men. He didn't have a chance. A stud was bent—on his rifle—his own bayonet wouldn't fit—there was a machine gun nearby, but Johnny didn't know how to use one. I failed him."

Think it over.

BETTER THAN THE ENEMY*

By John Hersey

The first to taste it were the antiaircraft crews.

One crew heard the news from Hawaii in the morning, after an all-night alert and an early breakfast. A sergeant wearing earphones started up when he got the flash and told his friends: Oahu, surprise, Hull's office, Kurusu, the Japs.

There was a silence, then one fellow said: "Well, it's here."

Another said: "This is what we came over for, I guess."

Another said: "Okay, let's get it over with and then maybe we can go home."

At once the men began to dig foxholes near their gun. They figured since Honolulu had been attacked, Luzon would get it soon enough. The sergeant with the earphones on kept his radio going, and in mid-morning he heard an announcement from the States that Clark Field had been bombed. He told the boys, who were right in the middle of Clark and hadn't heard a thing. First they laughed, but then they began wondering about Fifth Columns, and they thought maybe the difference of time to the Coast, which they'd

*From *Men on Bataan*, by John Hersey. Copyright, 1942, by John Hersey. Reprinted by permission of Alfred A. Knopf, publishers.

never exactly understood, might have something to do with it. They began to feel a little spooky.

Lunch came around to the battery in a mess truck at about a quarter to twelve. The sergeant who had been listening to the radio was brushing his teeth when one of his pals said: "Let's listen to the twelve-o'clock news." Another sergeant sat down to write a letter to his mother.

Just then someone from the next battery shouted over: "Hey, look at the pretty planes."

They were pretty. They looked to be about twenty thousand feet up, in tight silvery speck-patterns—nine-nine-eight and then another nine-nine-eight. The boys thought they were navy planes, except for one man who looked through the range finder and saw but did not even have time to yell.

First there was just noise. Then the men could see columns of dirt springing up, like a row of poplars in a picture, but moving, coming straight at them. The mess truck, which had just set out across the field, was overwhelmed in that line-up of thunder and dust. With each new dust tree the noise grew louder.

"It all happened so quick," the radio operator said afterward, "that for a minute it seemed like a death trap."

But the hurrying explosions suddenly stopped about two hundred yards from the battery. The bombers went on and did not return.

The men, who had instinctively thrown themselves on the ground, stood up and dusted off. The sergeant who had started a letter carefully folded the piece of paper, which had only "Dear Mom" on it, and put it in his pocket. They all talked about the wind that the

bombs make, and how they felt. They felt queer when they learned that both drivers of the mess truck—the fellows who had just been feeding them—were dead.

They started loading their guns. They had never actually fired these guns before and they wished they could let a couple of rounds go just to get over the tenseness. But they held their fire until pursuits suddenly started swooping in.

In the absence of the battery's lieutenant, who was having lunch in officers' mess, the sergeant who had been running the radio shouted to the crew to stay low, keep calm and keep firing.

The pursuits came in from all directions. They dived shallow, at an angle of about forty-five degrees. They stayed in the dive for perhaps six hundred feet, spitting all the way. They swooped so low that the sergeant who ran the radio thought he could reach right up and slap them. He could see the pilots' heads and even imagined he could make out their helmets and their goggles.

First he was scared. Then, when he had fired his gun for the first time, he felt very good, very sure of himself. Then, like a golfer after his first drive, he began to think about form—aim dead and true, hold back until it seems too late, and don't shoot at just any plane, but get together with the others, all at once on one plane. Soon he reacted to the enemy; he admired the beautiful job they were doing, then, suddenly and for the first time, hated their guts; then, perversely, liked them very much when he saw one pilot swoop down by a disabled falling colleague and waggle his tail.

The sergeant who had started to write a letter was wounded. It was pretty early in the action, and he was down on his knees behind the sandbagging at his gun. "I'm the luckiest fellow in the U. S. Army," he said afterward. "If I'd been six inches further over I'd've got it. It felt like a red-hot wire, went right under my arm and past my forearm. I looked down and saw some blood and Christ, it felt hot a minute, but I didn't have time to think about it." He just wiped off the blood and kept going.

The men were all tremendously exhilarated when their lieutenant careened crazily across the field in an exposed jeep, jumped out of it, ran to their battery, grabbed a machine gun and shouted: "Let's give 'em hell." They whooped like Indians when they looked up and saw a P-40 fly circles around a Japanese plane which they all were convinced was a Messerschmitt.

The raid lasted fifty-three minutes. When the last enemy pursuit had roared off through the smoke, they stood up again, streaked with mud from lying in the dust and sweating.

They stood there and looked at each other's mess and laughed. They felt they had driven the Nips out of the air, and that they had kept them from completing their dives. They knew now what war was like: they were veterans. They had stuck to it. They had really learned the meaning of the motto, and by golly they had lived up to it: "First in spite of hell."

They felt good. They were proud of each other and they laughed.

I think you ought to meet the sergeant who worked the radio. His name was Joe Stanley Smith, and he was a New Mexican.

Joe Stanley got his nose broken playing soldier with his older brother at the age of four. He grew up muscular, and he was all the neighbors' friend. The people of Carlsbad used to send for Joe Stanley when there was a drowning in the Pecos River, and Joe Stanley would go and swim strongly and take out the body. He had a big black dog, he liked to dance, and he would box with anyone just for fun. He married a girl whose name was also Smith, and they had a baby, and the baby had three grandmothers all named Smith. "He has a very pleasing personality," his mother says. "Clean, neat and good looking and everybody likes him very much, there's not a more popular boy anywhere."

I think you ought to meet the sergeant who so carefully folded up the beginning of his letter to his mother and put it in his pocket. His name was Paul F. Womack, and he was also a New Mexican.

Paul was always a clown. He always said that being born on Friday the 13th was what made him so lucky. He clowned on the track at State College, and clowned in the jalopy of a plane that he and his friends bought together, and clowned about wanting to be a good doctor like his father and then landing up with the Potash Company of America. There was one thing he was serious about: his collection of Indian relics, his tomahawks and peace pipes and arrowheads and pottery. But mostly life was making people laugh. All the pictures from the Philippines showed him horsing around, clown that he was.

It took not many hours and not many raids to wipe the smiles off the faces of the antiaircraft crews. When they learned how many of their precious planes had been twisted and tangled in that first blow, how many men hurt and runways pocked and hangars gutted, they were less amused—though no less cocky, for they were no less American.

Now each man was a wheel, a cog, a hand in a clock, and they ticked. At a typical battery, after that first day, work began early, less than an hour after sunrise, when a telephone warning came that half a dozen hostile planes were flying in from the China Sea.

The clock's main spring, the captain in command of the battery, got up easily from his divan of sandbags, and ordered action. A sergeant beat a pan with a spoon as a warning to the battery. All men took to their posts quickly but not roughly, as in that first crazy raid. A lieutenant, a corporal and three privates manned the cumbersome but delicate range-finding equipment.

A second warning came in over the phone from one of the outposts surrounding this vital area. It said that the planes had been identified as Japanese dive bombers, and that they were flying at about 6,000 feet.

The corporal at the range-finder quietly directed his men: "Elevate, depress, hold it, take a reading. And finally, when he found what he was looking for, he

sang out: "On target!" The planes were now visible to the naked eyes of the other men.

The battery captain sat at the radio phone, giving a running report of what he could see. The planes peeled off one by one and began to dive at separate targets. One hummed down toward the battery.

The captain grabbed the interbattery phone and ordered: "Machine guns open fire."

The chattering began, and golden strands of tracer fire went up to greet the visitor.

"Take cover," the captain ordered. But no one did.

The bombs came down and missed with a short scream and a whoomph.

The bomber went away. There was a pause, and then a reconnaissance plane came in to see what had been accomplished.

The captain decided to give him a few. "Just," he said, "to keep our hand in." When he had given the order and the shells were on their way upstairs, one of the men said out loud, as if talking to a well-trained dog: "Get him, knock him down."

But the round did not knock him down. It burst several score yards away from the plane, which turned and ran. A lieutenant reluctantly recorded the number of rounds fired.

"Well," said an Air Corps observer attached to the battery, "he's sure as hell got some shrapnel to pick out of his tail."

I think you ought to meet the captain in charge of this battery. His name was Aaron A. Abston, and he was a product of the land, having been born of a long line of pioneers, without a silver spoon in his mouth, eight miles west of Tuscaloosa, Alabama. He never cared for any kind of sports and was a deep one. He spoke quietly and not much to people, but liked to walk alone over the hills and valleys, admiring the wonderful arrangements of nature.

The sergeant who alerted the battery was Paul P. Verdi, and he was from Netcong, New Jersey.

Paul had to drop out of school in his first year of high because there were eleven mouths to feed at the Verdi house. He took a job delivering milk for Mr. Mooney, who was good to him and let him go deer-hunting on his farm until Paul became a good shot and wanted to go in the Navy; but because of his shortage of education he always failed and so he selected the Army. "He soon started to advance himself gradually," his mother writes, "for being so active. First to private first class, later to corporal and finally to sergeant of which he still is. He was very active around his vicinity, always minding his own affairs, but never letting no one put anything over him. We are all very proud of him, along with all his friends and of our boys out there and especially that wonderful General Douglas MacArthur for his brilliant work, and may God help them all."

The lieutenant on the range-finding apparatus was Lester Leroy Peterie, from Kinsley, Kansas.

He never could get away for long from the farm on which he was born. First he got away to the district

school, three miles distant, but he always had to walk home at night. Then he got away to the rural high school, ten miles distant, but he always had to ride home with his sister at night. In the depression years that Kansans won't forget, there was no job to take him away from the farm. He got away to Kansas State Agricultural College, working in the college dairy, restaurants and cleaning establishment to earn his keep; but when it was over he had to go back to work the home soil. Finally he made the Naval Reserve Aviation Base at Kansas City, but they washed him out, and back he went. He got a job with a geophysical company in Texas and later in Louisiana, and then the Kansas Highway Department hired him and then he went in the Army and they sent him to the Philippines, and that was far from the farm, but he figured, well, he'd be back.

One of the privates who helped work the range-finder was Louis Rio, from New Britain, Connecticut, a short man. He was a tailor by trade, and he always made forty-five and sixty dollars a week, and, as a tailor should, wore his clothes neatly. Here is what he was like:

One day he and his mother and his brother Dom and his sister-in-law went to an ice-cream parlor for some ice cream. He spotted a machine you put a nickel in and choose your record, and he put a nickel in the slot, and the slot wouldn't go in, so he turned the nickel around, and still the slot wouldn't go in. The owner of the store finally came up to him and asked what the trouble was. Louie said: "Nothing, I think the buffalo is too fat."

Another of the privates on the range-finder was Ernest Wheeler from Comstock Park, Michigan, who was even shorter than Louie Rio. I can give you an idea in one sentence of what Ernest was like. At home he used to love to take about a dozen apples to bed and read until very late, and the next morning he would have the apple cores neatly and beautifully lined up on the window sill next to his bed.

These were the antiaircraft boys. These were the boys who seemed to consider newspaper correspondents their personal link with America and home, and who said, time after time when reporters visited their batteries: "Write my mother I'm a hero."

What's New in Film Strips

By Major Harold F. Greene, Coast Artillery Corps

One of the toughest problems with which a battery commander has to cope is the problem of training. Of all training phases, that which deals with the care, adjustment, and operation of the major armament to which the battery is assigned is the most important. Not only is it the most important, but it is the most difficult. In the past, the battery commander has had either to rely on holding a considerable portion of his instruction at the gun emplacement, or holding it in a classroom and attempting to be descriptive enough to impress the subject clearly in the student's mind. Both of these methods have their disadvantages. With classes that are held at the emplacement, the few students in the center of the front row are usually the only ones who really can see the subject. Even to them the effort of paying attention is too great. They, along with the rest succumb to the soothing action of fresh air and sunshine and their minds wander away from the subject. Instruction in a classroom using drawings or blackboard sketches also is ineffective. Any subject as unfamiliar to the majority of enlisted men as is the subject of armament can never be portrayed satisfactorily by words and sketches alone.

To meet the evident need for assistance in such instruction, the Department of Training Publications of the Coast Artillery School is about to release the first of a series of film strips on armament matériel.

The first film strip is on 155-mm gun matériel. It will come in three sections and will include detailed photographs of all matériel parts. Examples of these photographs with accompanying descriptions follow. The most important parts in every picture are appropriately labeled. The intention of this labeling is not to supplant the instructor, but to act as cues for the instructor. Also, the labeling will acquaint the trainee with the spelling of various artillery terms which so often helps to retain these terms in their minds.

Notes accompany the film strip. The notes outline the contents of each sequence of pictures, stress the points which should be emphasized, and list the reference material which is applicable. Before using the film strip, the instructor should preview it. Then, by studying the reference material listed in the notes, he can prepare an outline from which to instruct. It should be remembered that the strip can be run forward and backward as desired. This permits returning to a previous frame to expand the information learned in frames which followed.

The picture sequences are also arranged to show each part in the order that it would appear if actually pointed out on the gun. An excellent example of this is a detailed illustration of the breech mechanism. The illustration starts with the breech mechanism closed. Then it is opened and disassembled in the prescribed manner so that the student can orient in his mind the location of each part which is shown. This also provides an excellent opportunity for the instructor to explain the care, maintenance, and operation of the individual parts.

All frames are numbered serially as a ready reference for the instructor if he wishes to go back to any particular frame, or as a reference for the student if at the end of the instruction he wishes to ask questions on any particular frame.

As was mentioned, this film strip is divided into three sections. *Section I* presents a brief history of the gun, its characteristics, a general panorama of the gun, and then detailed illustrations of the gun, breech mechanism, and firing mechanism. *Section II* shows the position of the various parts of the gun as, step by step, it is placed in battery. There are also detailed illustrations of the wheels, brakes, elastic suspension mechanism, top carriage, recuperator, and replenisher. *Section III* contains detailed illustrations of the telescope mount, M6A1; panoramic telescope M8, quadrant sight, panoramic telescope, M2A1; gunner's quadrant, limbers, subcaliber tube, tools, and ammunition.

From this brief outline of the contents of the film strip it can be seen that it contains all information which the instructor will find necessary in putting across the subject of matériel.

An additional feature of this film strip is the question and answer frames contained at the end of each section. They are intended as a guide only, but will allow the instructor to test adequately the progress of his instruction. It is worthwhile stating at this point that it is not intended that this film strip, or any section thereof, should be shown all together at one time. If the film strip is used in this manner, its effectiveness will be lost. All training programs should be put together with the thought in mind that the instruction shall be progressive, that only as much will be given each day as can be absorbed by the poorest of students. Hence, as the training program is planned, the instructor should use only those sequences in each section that apply. If used in this manner, the film strip will be invaluable and, except for periodic inspections of the actual armament, it will not be necessary for the instructor to take his class to the emplacement, or to tax the imagination of the student.

This film strip represents quite a departure from the usual practice of film strips and the School will be very much interested in the reactions of all instructors.

Field Manual 21-6 lists all film strips which are now

available with a synopsis on the content of each. Film strips may be obtained by application to the nearest film library or by direct application to the Chief Signal Officer, Washington, D. C.

Suggested Steps to Follow when Preparing Instruction Material Using Film Strips

1. Obtain the film strip and accompanying notes.
2. Read the notes for purpose, content, and sequence of the film strip.
3. Preview the film strip using the notes to amplify the contents.
4. From the battery training program, decide on the subjects to be covered during each instruction period.
5. Select from the film strip the frame sequences which will be applicable to each instruction period.
6. Starting with the first instruction period, accumulate the material to be used in instruction and arrange it in the desired order.
7. Preview again the selected frames which apply to the instruction and revise the instruction material in order to make full use of each visual aid.
8. Finally, be sure each frame serves a definite purpose. Eliminate those frames which contribute no specific information.

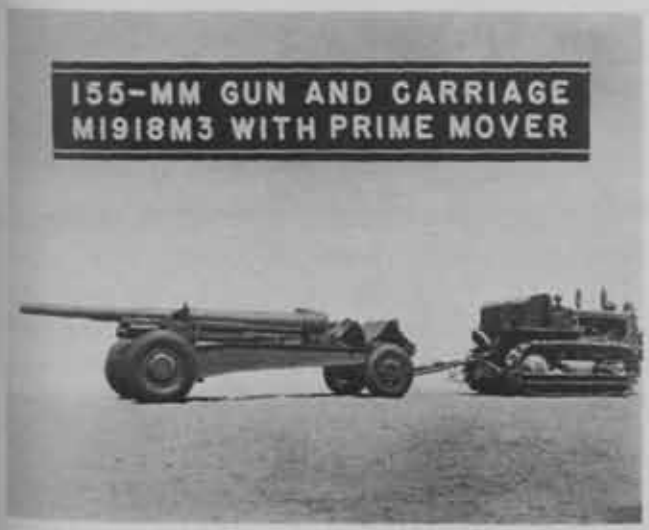
Steps to Be Taken Prior to Conducting Instruction With Film Strips

1. Choose the projector operator ahead of time.
2. Supply the operator with a list of the frame numbers in the order of their showing.
3. Rehearse the instruction with the operator to familiarize him with the frame sequence.
4. When skipping frames, instruct the operator to hold a card over the projector lens while changing frames. By counting clicks, the operator can select the proper frame.
5. Instruction in subdued light is preferable to a blackout. The ability to see the instructor adds personality to the instruction and permits the use of gestures for emphasis. It is also easier to follow a pointer if one is being used.
6. The instruction should be given indoors where adequate seating facilities are available and where all students can see the projected frames clearly.
7. Erect a large piece of white paper for a screen if a commercial screen is not available.
8. If possible classes should be kept below twenty-five in number.

Six Don'ts

1. Don't use a film strip as an instructional end in itself.
2. Don't run through a film strip frame after frame just to show pictures.
3. Don't show a film strip for entertainment.
4. Don't use a film strip unless it has been previewed and instructional material prepared on it.
5. Don't wave a pointer erratically over the picture. Be specific and point at the feature being discussed.
6. Don't talk to the screen. Talk to the class.

Selected frames from the first film strip



Frame 16

One of five illustrations giving a general panorama of the gun, carriage, and prime mover in traveling position. The object of these frames is to allow the instructor ample opportunity to acquaint the students thoroughly with the location of the various major parts.

Frame 20

The appearance of the gun and carriage when in firing position on a Panama Mount. Illustration includes a sandbag parapet and camouflage net.

Frame 21

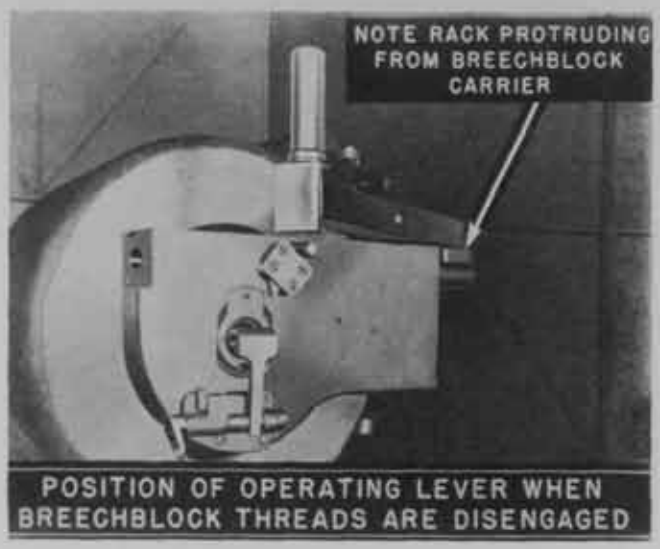
One of five illustrations covering the nomenclature of the various components which make up the gun. Excellent opportunity is afforded to explain the assembly of the parts and the use each serves.

Frame 23

The business end of the gun showing the lands and grooves. Preliminary preparation of instruction will make full use of these features to emphasize the need for them.

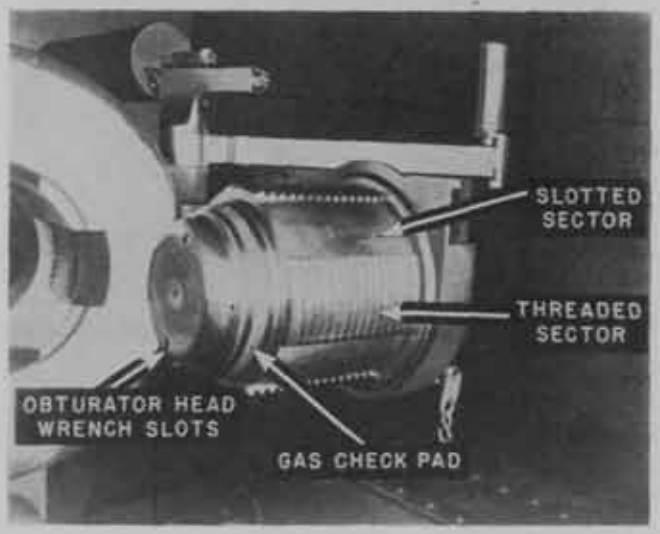
Frame 24

This frame is designed primarily to show the prominent features of the interior of the gun. Proper instruction will permit the student to visualize the need of each and the importance of each.



Frame 33

Several illustrations are contained in the film strip on matériel similar to this one which helps the instructor to explain the operation of the mechanism concerned.



Frame 36

Here some of the features of the breechblock and obturator assembly are shown. Thirty-seven other frames complete the picture of the breech mechanism.

Frame 46

Such illustrations as this are frequently used to permit the instructor to emphasize adjustment and disassembly procedure.

Frame 48

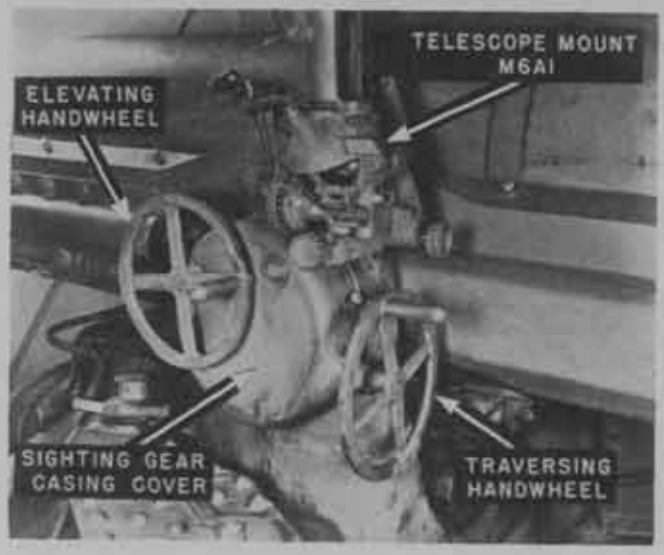
A close-up view of the replenisher cylinder. This is one of ten frames showing the various features of the recoil mechanism. Cross-sectional views are included to explain the operation of each section of the mechanism.

Frame 22

Such frames as this will help to train the gun crews in procedure essential to care and maintenance of the gun.

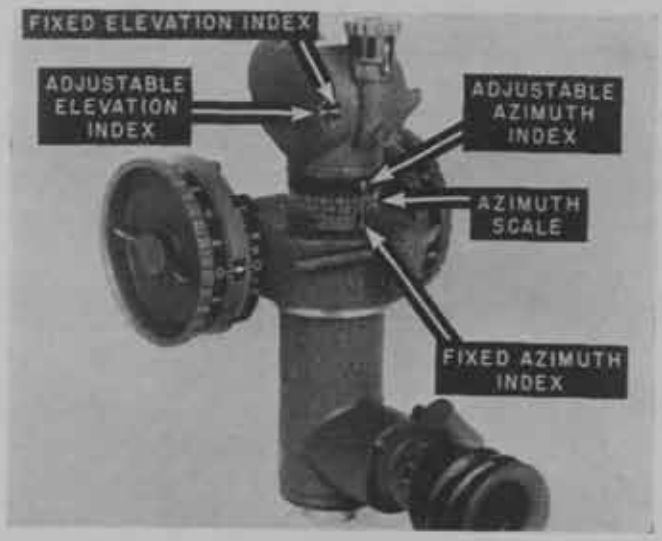
Frame 29

Special features of the various carriages are thoroughly covered permitting the importance of each to be stressed adequately.



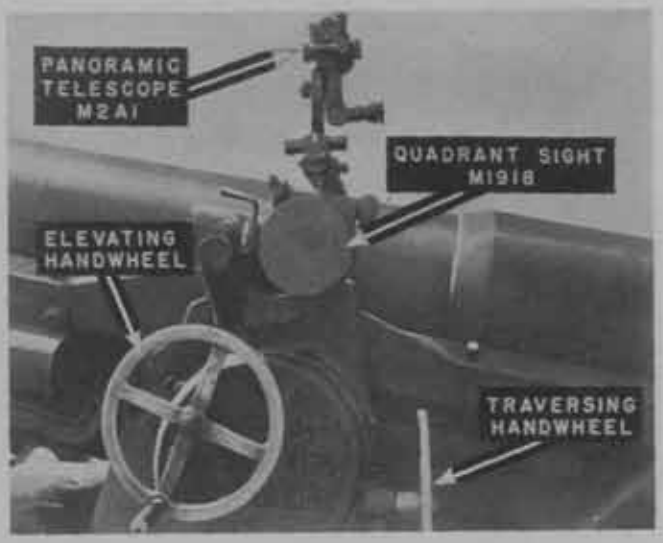
Frame 3

Seven frames are devoted to illustrating the features of the Telescope Mount, M1A6. Classes on gun pointing will find these frames very helpful.



Frame 14

Panoramic Telescope, M8. This is one of seven frames illustrating the features of the telescope. Operating procedure can be explained fully using these illustrations.



Frame 18

Pointing equipment universally used on seacoast 155mm guns in the past. Six frames follow which thoroughly illustrate this quadrant sight and panoramic telescope.

Frame 29

All models of limbers are included in the film strip. The highlights of each are labeled similarly.

Frame 35

One of two frames of 37mm subcaliber guns designed to present the appearance of the gun and mount when properly attached.

Endpiece by Private Robert Held

Coast Artillery Afloat

By Lieutenants Bruce B. Jones, Coast Artillery Corps, and Edward A. Raymond, Field Artillery

The Coast Artillery Corps has been branching out in all directions from the coast. It has not only served big guns in fixed seacoast positions, but has mounted them on railway mounts and has accompanied armies in the field. Some antiaircraft regiments are organic corps troops, and maneuver like field artillery. The Corps has gone into a new dimension with barrage balloons, and has gone to sea on its own mine planters.

In the CAC's newest undertaking, Coast Artillery soldiers are protecting merchant ships with Coast Artillery and naval guns on all the seven seas. As yet there is little in the way of official doctrine to guide the sea troops. The experience of one of the authors on two voyages, made under emergency conditions, has raised a number of questions worth discussing.

Tactics

Pursuant to the President's order to arm merchant ships, published some months before we went to war, the Adjutant General issued provisional Tables of Organization for CAC gun crews. The Navy also issued tables for their crews.

At first, all cannon on merchant vessels were located on the stern, with machine guns located amidships, as high up as practicable for all around antiaircraft fire. This disposition was followed under the Hague Convention of 1907, which classed vessels with guns firing aft as armed merchantmen and those which fired forward as auxiliary cruisers. Article *V* of the Convention states that the fact of a neutral power resisting, even by force, attempts to violate its neutrality cannot be regarded as a hostile act.

A rear gun can be brought to bear only by turning the ship away from the submarine. As the U-boats particularly like to lie in wait off a victim's bow and fire torpedoes set to swerve ninety degrees into a ship's side, this disposition of armament means turning broadside to the submarine and losing invaluable time. On small vessels, however, the stern is an appreciably better gun platform, free from the spray and the occasional green water which breaks over the bow in a heavy sea. It might be supposed that if only one gun were available to protect a vessel, placing it forward would give protection ahead and "ash cans" could be dropped to give protection aft. This ignores the fact that depth charges cannot be dropped safely at less than twenty knots.

Obviously, it is desirable to have guns both fore and aft; and when the ship is of sufficient size, two guns forward and one aft. Where light armament is concerned, except for superior sighting equipment on the 4-inch naval gun, the 3-inch dual-purpose gun is considered practically as good against submarines and is in addition at least a morale factor against aircraft. In the absence of electrical sighting devices barrages are fired against planes.

When approaching shore in a landing operation, protective fires from transports are coördinated under the orders of the landing force commander.

When in port the guns can be used in harbor defense action under command of the local harbor defense commander.

At sea the captain of the ship is king, and without his instructions no shots are fired. The Army lookout for raiders, submarines and aircraft is only supplemental to the ship's watch. How long to withhold fire, when to abandon the guns, and all similar tactical decisions are made by the captain, or by his authority. Even when the captain feels that he desires to control fire from his own ship, it must be remembered that he is not on the bridge at all times, and if he has confidence in his gunnery officer, that officer will no doubt be given authority to make firing decisions in the captain's absence, or even be given complete responsibility by the captain. Antiaircraft guns are usually fired independently, so that valuable seconds are not lost in ordering fire. All planes which approach the ship to within 1,500 yards on an incoming course are attacked. If friendly aircraft from land bases or carriers are engaged with enemy planes within range of the ship's guns, the

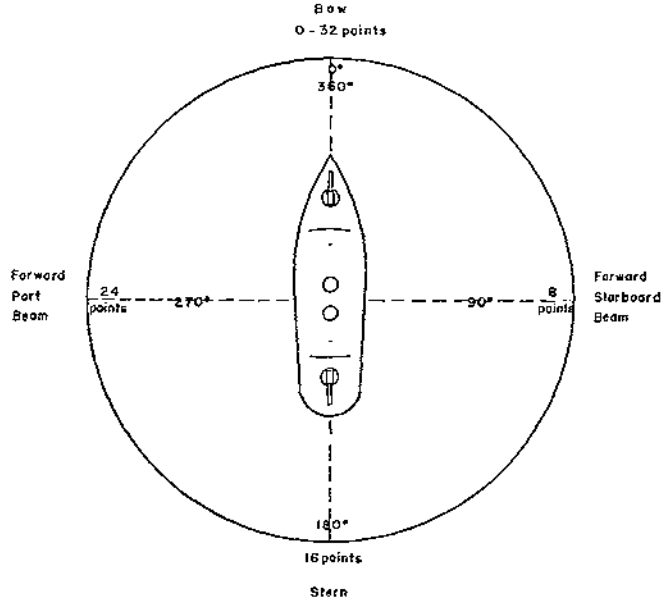


Figure 1

Coast Artillerymen on a transport provide additional protection for their convoy.
—Official U. S. Navy Photograph

presence of friendly aircraft is ignored unless our fighters have a numerical superiority of two for one.

Dawn and dusk are considered the most likely times of attack, since a ship is a much more visible target than a periscope. If the submarine lies in the sun at those hours, it is almost invisible; and the chances lie with the marauder. At those hours, every member of the gun crews should be on the alert. At other times, a complete skeleton gun crew stands watch, and crews from machine guns stand by on staggered parts of the ship, prepared to give antiaircraft fire upon any angle of approach. In the morning and afternoon full, rather than skeleton, gun crews should be alerted, with the crews off watch subject to alert in an emergency and for training purposes.

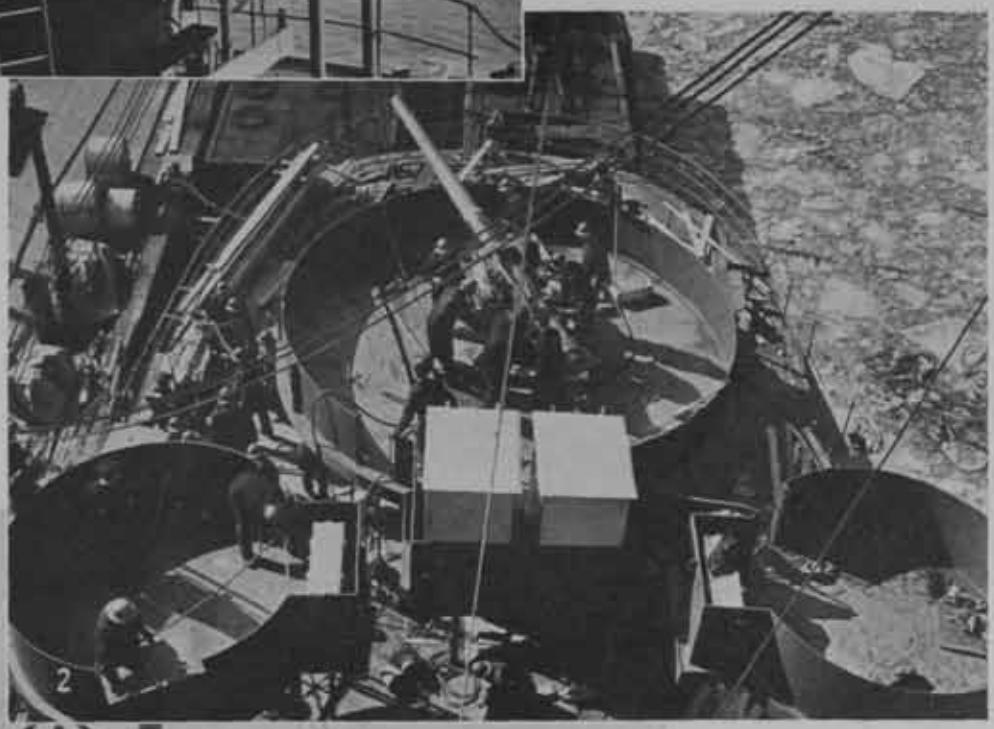
The captain's decision as to when to cease firing is a ticklish one. If the ship is large, a single torpedo will probably fail to sink it, but may damage it so that the vessel will become an easy prey to gunfire. As the submarine can usually carry no more than twelve torpedoes, since they cost about $12,000 each, and as these have been brought over thousands of dangerous miles, it is more than likely that the submarine will surface to finish off its target. The final moments of action on the part of gun crews are likely to be critical.

Technique

The gunnery officer controls fire from the bridge. He keeps target designations in sea terms to prevent confusion (See Fig. 1). A type situation follows:

Fo'c'sl hand on watch reports, *"Suspicious object four points off starboard bow."* Captain and gunnery officer identify submarine periscope. Captain directs that fire be opened. Gunnery officer calls over fire-control phone, *"Alert! Alert! Target four points off starboard bow. Report when ready."* In ten seconds (includ-

1—Arming a merchant ship.



2—Mechanical tests for the gun.

3—Submarines beware!

—Official U. S. Navy Photographs

ing time to reach stations) the report comes back "*Ready.*" The gunnery officer orders "*Range 1,100. Fire when on target.*" Adjustment is by single bursts. Aim is first corrected in deflection by exact shifts. Bracketing in deflection is not desired. Range is bracketed, using 200-yard or greater initial range bounds. Splash jumping is not adapted to the sighting equipment used. Fire is continued when adjustment is complete by repeating the range order, or modifying it as indicated. If the gunnery officer is satisfied that the submarine has been dispatched, he orders "*Cease firing.*" If he desires to hold the crews at the guns, he orders "*Suspend firing.*"

Dual communications are installed; use of the permanent ship's system, running below decks, is supplemented by field wire, laddered, laid above decks. Lines are run to the officers' staterooms if no ship's lines run there. When in port it is not the responsibility of the ship to contact the harbor defense command, but vice-versa.

Fifty rounds of ammunition per gun are usually kept at hand in lockers by the guns. In a single encounter it is not very likely that more can be fired, and the desirability of keeping the balance dry and at even temperature usually makes it advisable to have the main magazine (for a single gun) or forward and after magazines (for ships with guns fore and aft) located well below-decks. Methods of obtaining ammunition from the magazine with the least loss of time must be improvised to fit the architecture of each ship. Expedients which have proved useful are the use of donkey engines, booms rigged in the manner of old-fashioned well sweeps, and platform hoists.

Service of the piece is started by the skeleton crew on lookout, which is trained to man any piece, and assembles on the alert signal at the turret nearest the submarine. Other members of that crew fall in with the lookout. Remaining crews rush to their assigned prinipal or alternate pieces. Seconds count, and crews should not be permitted to disperse all over the ship while at sea. They sleep in the immediate vicinity of their guns; weather permitting, right out on deck by the turret. Having fallen in, crews serve their pieces according to Navy practice with the gun commander as gun captain, gun pointer as azimuth trainer, elevation setter as pointer, and an additional cannoneer with asbestos gloves, known in the Navy as hot-shell man. He keeps the restricted working space clear of blistering hot brass.

Lifeboat drill is not a matter of getting in and sitting down. Regular benches are assigned; lowering and rowing commands must be learned so that the seaman in charge, if luck supplies one, can speak in the language familiar to him. The best gunnery officers learn to navigate.

Pros and Cons

Subconsciously, the reader may have been wondering all along whether he would like this type of assignment.

There is much to recommend it. In order to see the world, many men join the Navy in regular hitches: but in this half-Navy there still are voyages to far-off continents over arctic or tropic seas; visits in strange ports and constantly changing scenes; these, together with a host of pleasant contacts made on board, make life on a transport the direct opposite of the sedentary life people think of in connection with seacoast forts. While the work of a ship's gun crew must be highly finished, the technical problems are not numerous, and after a shake-down voyage or two, crews need not continue to train for very long hours each day. Administrative problems are at a minimum. On most ships living conditions are extremely comfortable. Cabins are heated in winter, ventilated in summer; there are beds, chairs, tables, lights (behind blackened portholes) and hot and cold running water; enough to fill a field soldier's heaven to overflowing. The tradition of the Coast Artillery Corps as a literate and studious branch can be upheld. Recently-commissioned officers or those with little service can perfect themselves in fundamentals, or can work up some specialty like communications or motors. Most officers assigned to this type of duty have full responsibility for their detachments.

On the debit side, there is danger of a particularly insidious sort. If the enemy strikes, there can be no time lost in striking back. Somehow, a sudden danger seems more severe than one which draws on slowly. The ocean is not always pleasant, particularly when the temperature is low or the seas are full of sharks. Some ships roll badly, and some stomachs are weak. Prolonged seasickness is a terrible ordeal. In danger areas a good gunnery officer matches hours with the captain on the bridge and gets very little sleep as a consequence.

A soldier does not let danger prey on his own mind or the minds of his men. He keeps the hardships in their place. He enjoys the comforts and advantages of a seafaring life and is interested in seeing to it that the Coast Artillery Corps measures up to the new responsibility with which it is entrusted.

"They that go down to the sea in ships, that do business in great waters."
—Psalms 107-23.

Coast Artillerymen in Art Competition

Fifteen hundred men in the armed services submitted paintings in the recent art competition for service men sponsored by *Life* magazine. Four enlisted men of the Coast Artillery, submitted paintings that were chosen to be included in the group of 117 pictures that will make a tour of galleries and museums under the auspices of the American Federation of Art.

Private First Class Charles M. Archer of Fort Miles, painted *Beer and Ballads*. PFC Archer is married; his home town is Raritan, New Jersey. He studied at the Yale University School of Fine Arts and was a commercial artist and manufacturer of electrical devices before entering the army.

Private Howard S. Schroeder of Fort Miles, painted *Number Seventeen Ready for Planting*. Private Schroeder was a commercial artist in New York City before entering the army, and studied at the Fine Arts College of Syracuse and at the National Academy, New York.

Private First Class Edward Hanke of Fort Macon, painted *Plotting Room—Fort Macon*. *The Sentinel* is the work of Private Walter de Wolfe, of CASU 1953, at Camp Callan.

1—Beer and Ballads. 2—Number 17 Ready for Planting. 3—Plotting Room—Fort Macon. 4—The Sentinel. (Photos 1 and 3 by Lofman-Pix; 2 and 4 by Myron H. Davis.)

More Training Per Round

By Major A. M. Lazar, Coast Artillery Corps

The tempo of present day endeavor calls for speed. This tempo is reflected in the amount of time allotted for the training of new units at the AA training centers. However, trite as the saying may be, we must remember that haste makes waste. There is, however, a happy medium that can be attained wherein a correct tempo is reached and the proper degree of training is accomplished.

In the article *You Can Get Hits*, by Captain Wofford T. Caldwell in the September-October, 1941, issue of the JOURNAL, the statement is made, "In eight months of firing one half-million rounds of ammunition, the percentage of hits has been, until recently, pitifully small. The records . . . show about the following percentages of hits for the various caliber guns fired: caliber .30 about 0.7%; caliber .50 about 0.6%; and 37mm about 0.2%."

He continues: "scores have been tripled in many instances in the past several weeks." These scores have been tripled because of training—training with the McNeely Trainer and by actual fire. This article is concerned with the second method of training, that of actual fire with the 37mm gun.

The organization commander has two facts before him when he prepares for firing—the rate of fire for weapons, which is 120 rounds per minute per gun, and ammunition credits. He is therefore faced with the obvious conclusion that every round fired in training must be utilized to the fullest extent.

Previously it was pointed out that student officers were unable to get hits because of lack of proper training—how much more so does this statement hold with respect to the newly inducted soldier who does not have, in most instances, the background of a student officer.

For methods of training Captain Caldwell's article is highly recommended. Let us go now to the business of actual firing. It has been mentioned that the 37mm gun has a consuming habit with respect to ammunition, also that ammunition must be conserved.

The gun crews, range section, battery officers and the records section all must be trained. No, the records section did not get in by mistake. It is in because from records properly compiled, the state of training of an organization can be determined. It affords the unit commander an opportunity to analyze, check, and gain valuable information pertaining to his equipment, its deficiencies, its strong points, and above all, the quality of his unit personnel. For these reasons it is particularly stressed that the best men and officers obtainable should comprise the records section. It should be trained to the nth degree and made to realize its importance in the scheme of training. Not only the battery commander, but all higher echelons, are interested in proper records. It is only by the analysis of shoots that the state of training of an organization can be determined.

The normal training practice is conducted somewhat in the following manner. The target is on course, the safety officer gives *Course Safe*, the guns track the target, the central control box operators estimate the proper lead and everything runs along smoothly. At the proper time the record section has commenced tracking and recording its data. The command to fire is given, a stream of tracers flashes across the sky in a matter of moments. What good from a training sense has this type of firing accomplished? Practically nothing.

The basic idea, the fundamental thought, the mission, of the training center, is to train the organizations which eventually will leave its confines to accomplish their mission; i.e. to utilize properly all weapons and equipment which they possess. The ultimate goal of the 37mm gun unit is to pick up a fleeting target, track it, fire upon it and destroy it automatically. That, let me repeat, is the ultimate goal. Before the state of training of an organization reaches this point there are many hours of slow, patient spade work.

The writer has seen 37mm gun practices in which the

"To pick up a fleeting target . . . and destroy it automatically."
—*Signal Corps, U. S. Army*

ammunition was thrown into the sky and he was left with the thought, "What a beautiful 4th of July display." The men on the central control box, after putting in their initial leads, were finished because the course was over before they could do anything else. The spotters were able to give their readings after the course was finished. The gun crew had the satisfaction of making some noise and the records section chief had the supreme delight of saying *Commence Tracking* followed immediately by *Cease Tracking*. To the mind of the writer the requisite training by actual fire was not being obtained nor could it be obtained under the conditions.

It was believed that if fire were conducted deliberately, it would instruct all sections in their basic work. The child crawls before it walks, and walks before it runs. Therefore, a test firing was conducted for which the gunner on each gun was instructed to count one, two, three, between rounds. Results in training were immediately apparent. The spotters were able to send in sensings and learned to follow a tracer to its apparent crossing of the course of the target and to interpret what they saw. The men on the control box now could see the effect of the leads introduced and learned precision in interpreting what they saw in the light of what could be, should be, and was done. The records section obtained records that could be analyzed and the gun crew had good courses to track. As the sections grew more proficient and the lessons of preliminary training were absorbed in the light of deliberate fire the gunners count was reduced to two and then to one. The average number of rounds fired under conditions of the three count per course were fifteen rounds per gun. Thus, ammunition was being conserved and real training was being obtained from each round fired. The effects of the deliberate fire became apparent in the greater sense of accomplishment in the men. For once the theoretical knowledge gained meant something, based on the actual facts deduced by the trainees themselves under conditions of training wherein they were being trained. The officers of the organization were in a position to make corrections, observations, and explanations to their men which were understood.

True, speed of firing is sacrificed by this method of training. But if we recall the mission, we see we are accomplishing what we set out to do. After such deliberate firing, after the sections are trained to do their work automatically, after they have the fundamental knowledge of their duties classified in their own minds, then and only then are they prepared to step up the tempo and shoot their record practice with the proper rate of fire. But with what differences the firing will be accomplished with knowledge, with sensings by spotters who know what they are looking for, and by adjusters who know why, how and what to adjust for, and who adjust unconsciously and with the apparent effect of second nature!

The path before us is rough, and certainly it will be long. Before we march the final mile to the final victory, all Americans will have made real sacrifices—many of them, indeed, the greatest sacrifice. But, all of these hardships we will bear ably, gladly and proudly—in the knowledge that we are fighting for America—and for our unique American institutions.—MAJOR GENERAL EUGENE REYBOLD, *Chief of Engineers*.

Twenty-Four Hours a Day

By Lieutenant Paul J. Mozzicato, Coast Artillery Corps

The radio blared "Pearl Harbor has been attacked!" Thousands of miles away—yet the reverberations of exploding bombs were felt in the Harbor Defenses of Boston. Fifty per cent of our officer and enlisted personnel were away on leave of absence, week-end pass, or furlough. Telephones rang. "This is Lieutenant Jones. I'm on my way back." "This is Private Smith. Shall I return from furlough?"

That is an example of what we were getting. No call had gone out for anyone to return, but the spirit that prevails throughout the armed forces of the United States was not lacking among our men. Events spelled action! Our boys were ready to answer the challenge thrust upon them.

Within a day or two after a formal statement that a state of War existed between the United States and certain of the Axis Powers, the whole command had returned, and dormant plans were speedily put into operation. Matériel, equipment, and men moved to battle positions. All pass and furlough privileges were suspended. What to do to keep the personnel occupied in off hours? Twenty-four hours a day to look at the same faces—virtual confinement—with a large city and all its facilities for recreation within fifteen minutes ride by bus to tempt the fence jumpers.

The boys were not anxious to go on pass. There was a job someone else had started that must be finished—and soon at that!

Cold and raw were those first days and nights. Constructing gun positions, hauling ammunition, and spending lonesome hours patrolling beaches and installations; then the return to a canvas cot in a pyramidal tent with a Sibley stove toasting your front while your back received the chilling wintry blasts that found their way in under tent sides—and frozen ground on which to stamp the circulation of blood back into your feet. All this for men who a few days ago enjoyed the luxury of heated cantonments, steel cots, mattresses, and feather pillows, food served in chinaware by waiters at a table, and evenings free to go wherever they chose.

Now, food was cooked on Field Ranges and dished out into mess kits to be consumed hurriedly before it cooled, or mixed together into a goulash. If the distance from an O.P. to the post was too great, the piece-de-resistance of the Army (bologna sandwiches) was the rule of the day.

However, the novelty of having soldiers parked on front lawns of civilian property owners provided an entering wedge. Good neighbors began a steady procession to the observation posts to bring the soldiers thermos jugs full of hot coffee, and home made cakes and cookies. While taking care of the inner soldier, these neighbors did not forget the outer soldier. Knitted goods, such as helmets, gloves, socks, and sweaters were graciously donated. A few personal calls by the commissioned officers and some letters of appreciation from officers and men gave more impetus to the program of giving. Radios were forthcoming, as were ping-pong tables, cards, games, furniture, and stationery. The deluge of books and magazines reached huge proportions, and libraries in barracks were better stocked than those in schools or homes.

As the soldiers became better acquainted with the responsibilities thrust upon them through sudden war, the pass restriction was amended slightly so as to provide a maximum of five per cent on pass for twenty-four hours. A misstep or wrongdoing would cause a loss of pass privilege, and with that privilege coming up every twenty days, nobody took a chance that would bring about its revocation.

The question of providing additional entertainment became a major problem, but was met by the close cooperation of the Harbor Defense Special Service Officer and the various post commanders. Through this cooperation a Citizens' Committee for Soldiers and Sailors was organized in Boston. It undertook to provide shows for the many posts that comprise our Harbor Defenses. Stellar acts from nearby nightclubs were of a caliber that commanded top prices wherever they appeared. The performers were happy and willing to do their little bit, and looked for more spots where they might offer their services.

The U.S.O. also came into the picture and sponsored dances every second week. Music for these dances was

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recruited from local W.P.A. orchestras and from a regimental band, which had musicians from big name orchestras.

No matter where we turned to civilians for assistance we were overwhelmed with generous response. Radio stations were contacted and well known radio personalities willingly gave their time and talents to help the boys. One of the local radio stations has an announcer who was formerly a member of one of our regiments. Through his efforts, coördinated by one of our chaplains, thirty minutes each morning were devoted to the men in the service. He served as interlocutor and intermediary. Friendly feuds were started between individuals, batteries, posts, yes—even regiments—that made us all forget for the moment that we were at war. Good natured riding was the order of the day on that program. To be mentioned by name over the air during this Army period meant immediate fame, so great was his audience. To add variety, talent found among the soldiers was recruited. Professional musicians and singers who had found their way into the Army were called upon to add their efforts to the entertainment.

Another radio station came to the fore to do its part. This station sponsored a program known to listeners as *The Soldier's Quiz*. For its program it visited different Army Posts and broadcast from post theaters. Soldiers were the actors and the audience. It was usual to have eight soldiers participate. Each was asked three questions. Questions paid one dollar for the first correct answer and two dollars for the second; the third correct answer entitled the soldier to share equally the spoils of a fixed jackpot of forty dollars with any other soldiers who answered their jackpot question correctly.

Since this program visited posts and camps that were not a part of our command it is easy to understand what spirit and effort the boys put into their part to keep the laurels at home. It was the good fortune of these Harbor Defenses to retain the record for many weeks for the greatest amount of money won on a single program. This record was finally broken by another post but just ask any soldier who was here at that time if he will acknowledge defeat. You will be emphatically informed that the record was not broken until a change from eight to nine was made in the number of contestants.

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and that had that post been allowed only eight contestants, the record would still stand. Such is the loyalty and spirit we have been striving to attain.

Followed soon another radio station to do its share. This particular station operates on a twenty-four hour day basis. The program from 1:00 AM to 6:30 AM is known as the *All Night Patrol*. It is during these hours when spirits lag and boys at telephones, radios, searchlights, and alert gun crews think of other places where they might be but for the turn of events. Visit any of these places. You will find a radio softly tuned to this station—and, if you listen carefully, you are apt to hear that *Deep in the Heart of Texas* is about to be played for Private Bill Smith of Amarillo, Texas, who is stationed at a nearby post. Certainly Bill Smith requested it, and most certainly he comes from Texas. He has found a friend in that radio station to help him while away the blues.

Many of our boys are from nearby points, and it is not uncommon for civilian friends to request a number dedicated to Sergeant John Doe. This sort of dedication is always accompanied by a little message from Doe's pals, and a gentle dig about John's girl at home who just won't stay idle for those nineteen days between passes, but is reported as becoming the belle of the town and doing a little cutting-up. All lies of course, but a great contribution to the morale and esprit of Sergeant Doe and his conferees who happen to be listening in.

Cigarette companies have helped with their talents and wares. A very common sight is a cigarette salesman of one of the popular brands with a portable movie projector showing selected short subjects to groups of twenty to twenty-five men, and forever passing out coveted samples of his product. The peak in his popularity graph is regularly reached the last week of each month when funds are low and the men really look forward to receiving a few free smokes. There is another company which sends a team around in a car equipped with stand-up desks. This team hands out stationery, post-cards, etc., and encourages the boys to drop a line to the folks at home. Prior to free postage for servicemen this company also furnished the postage. The average cynic said this was only a cheap form of advertising but the average soldier said, "Thank you." This same company sent its goodwill ambassador around to all of the posts to exhibit himself and give that famous call for the brand of cigarette he represented. His cheery smile and ability to take the joshings of servicemen about his diminutive size all contributed to a high morale factor.

Another leading cigarette company organized a series of travelling shows that visited our installations to provide entertainment of the posts. The abilities of their performers are known to all radio listeners, and by demand they have been asked to repeat their performances.

With the inclusion of an Infantry Combat Team into our set-up, and the opening of many additional installations, new problems of entertainment and recreation were added to our lot. By contacting local civilian agencies where the Infantry was serving it was possible to get diverse things for them. Again the citizens were overgenerous. Every type of entertainment in the towns was thrown open to them free. They were given most anything they needed—even to pots and pans, and dishes to use at their billets. Once again the deluge of books, magazines, sweaters, mittens, socks, etc. It was nothing to walk into a billet of eight men and find over one hundred books, stuffed furniture, cribbage boards, playing cards and the like, sufficient to take care of the needs of many more.

Our attempts to make the lot of the alert details more comfortable was not confined to providing entertainment, games, and light reading matter. The men had to provide some of it themselves. We were only the instrument needed to start it going. Since Selective Service knows no social levels, the Army of today boasts men from all walks of life, and among them we found the people to carry on their own ideas. At one fort was a young man who in civil life was a social worker, and experienced in organizing activities. He was instrumental in getting boys to make many novelties from used wooden matches. Here was a project that required a little glue and the saving of matches. This little hobby accomplished two things. It provided a pastime for the boys, and insured us that match sticks would not be found strewn on the ground. As this hobby took hold, wooden matches were at a premium. Then we found a soldier whose hobby was printing, and who owned a complete job-printing outfit. He was encour-

aged to bring his equipment onto the post and given space to set it up. Interested and envious boys soon were learning how to set type, and run a printing press. The post sported printed stationery, and recruits at twenty-one dollars a month sent out printed Christmas greeting cards that they themselves had helped to produce.

All activity was not devoted to means for idling away long hours. There were constructive things to be done. While waiting for modified fire control instruments to arrive, many of the batteries made use of artisans to construct their own instruments. The Coast Artillery Board was called on for details of construction, and the boys built them. One proud battery conducted a service practice and received a rating of *Excellent* using a percentage corrector, angular travel device, set forward scales, M-1 Spotting Board, and Fire Adjustment Board all made by the men who operated them. The operators were not only familiar with the mechanics of the instruments, but also with the theory, and when confronted by an inspecting officer they knew the answers.

Some of the posts had inaugurated small mimeographed newspapers to tell what their posts had done. In short time these gave way to a printed *Harbor Defense Digest*. News is culled, compiled, and edited solely by enlisted men. Its circulation provides a copy for each and every member of the command. The funds come from paid advertisements, the printing is handled by a commercial firm—but it is an enlisted man's paper. Published weekly, it has brought isolated posts and individuals closer together so that although we are scattered all over the coastline of our state and throughout our harbor defenses, we are, for all practical purposes united. Read very carefully, the *Digest* is then mailed to families so that the folks get news from boys in the service.

With all that has been done to provide recreation, entertainment, and diversion for the boys, we did not neglect their training. War status requires many trained specialists that were previously not available. A Communication School was organized by one of our officers. Starting with simple semaphore these men had to go through all the stages to voice transmission. Most fascinating of all to them was the Morse Code and the telegraph key. Long after hours boys would practice keying and reading code. The work so intrigued some of the commissioned officers that they took an interest and matched skill with the enlisted men. This educational form of diversion provided the necessary operators for all our communications immediately, and on short notice any of them could go out and assist in setting up a new command post with the skill and speed of a trained signal corps man, and just that they did—stringing wires on posts and trees, across streams, and over sand dunes.

The increase of personnel added to our personnel problems. In order to handle these cases better, the American Red Cross sent one of its Field Directors to our Headquarters. His is the job of providing contact between the civilian and military in matters of urgency, distress, and disaster. He is the father confessor for the soldiers, almost replacing the chaplain in this respect. A soldier living many miles from his station receives word that an immediate relative is very ill or has passed

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away. He requests a leave from his Battery Commander—who in turn calls the Field Director for a verification of the message. At once telephone and telegraph go into action. Through branch offices of the Red Cross a check is made and a verification is immediately sent back. In the meantime the Red Cross man has arranged for a boat to get the man off the island post, and made arrangements to get him to the railroad or bus station. Usually the soldier is without sufficient funds to purchase the necessary ticket. Here again the Red Cross is ready to buy the man his ticket and provide him with any other necessities for the journey. This is all paid back by the soldier in small installments so as not to impose a hardship on him.

The bane of the Army is its guardhouse. Here are the unfortunate men, who because of their misdeeds, have forfeited most of their pay. Folks dependent on them are the real sufferers. They must turn to someone for help, and it is to the Red Cross they can go at such times. Clothing, food, and shelter is provided—even money, hospitalization and medical care, if needed.

Another place where the Red Cross has helped is in our hospitals, giving enlisted patients all kinds of toilet articles, useful articles for the fellow who is flat on his back and can not go to the PX to get them. Then, too, there are playing cards, checkers, and chess for those that can sit up. All these the soldier needs, and appreciates receiving.

Up to this point I have tried to present a picture of what we and others have done for the enlisted men, and what they have done for themselves. At the same time thought has had to be given to the commissioned personnel. Their lot, insofar as passes and leaves were concerned, was little different than that of the enlisted men. A sure builder of morale, and a means to provide better coöperation and teamwork is to have enlisted men know that officers do not enjoy more privileges than they. The same strict rules were adhered to by the officers. At each post a few rooms were set aside as reading rooms, lounge rooms, and game rooms. Wives and friends of officers contributed the fittings and fixtures. Games were introduced. Such apparently simple games as darts readily added up in dollars and cents when friendly bets were made—to add a little bit of interest.

In the midst of all this the First Army directed that all officers were to engage in at least two hours of strenuous physical exercise weekly, so as to attain the physical toughness and stamina to withstand the rigors of aggressive warfare. Although published in our Training Memorandums it really was not necessary to bring it to our attention, for long before the First Army issued its directive we had built a volley ball court and, nightly, games were in progress from immediately after supper until it was too dark to see. Variety and competition is provided by teaming up as Bachelors *vs.* Married Men, or Field Forces *vs.* CASU personnel, and Staff *vs.* Line. A series has been arranged with the enlisted men. This is now in progress with the officers as the underdogs.

Some of the officers found volley ball not strenuous enough so they started to promote the construction of a handball court. While waiting for this court to be constructed the officers are availing themselves of the privileges of a nearby college club, which were offered to commissioned personnel at very reduced rates.

For entertainment on the social side an officer may go to one of the leading hotels which has set aside a suite of rooms, and provided a hostess. This suite is exclusively for commissioned military personnel and their guests. Here many dinner dates and dance dates are arranged. It has proved a popular spot for the out-of-towners among us, and has made it much easier for them to get acquainted and acclimated.

It is exceedingly difficult to prepare any sort of regulated program for personnel of Harbor Defenses, since the installations of a harbor defense are widely separated. Transportation by land and water is not always available when desired. It therefore has been necessary to leave the matter of recreation and entertainment to the resources of post commanders and their recreation officers, and coördinate wherever possible with local agencies. With some thought and action by aggressive officers many angles can be exploited—much as we have done. Proper approach will bring a great deal of the desired from civic organizations. Fraternal organizations, our experience has shown, are ever willing to help. In passing it might be well to mention that one such organization, when told that a battery did not have sufficient athletic equipment, donated one hundred dollars to provide this equipment. They then did not leave the battery to find ways to use it. Through contact and coöperation with another fraternal organization a series of baseball games have been arranged to carry them through a complete season. Another organization which sponsors boxing bouts has arranged a weekly schedule of bouts which are brought into one of the posts. It even puts on bouts between soldiers, and offers prizes to the winners.

A little initiative and imagination is all that is required of any resourceful officer to secure all needed recreation and entertainment, and keep up the morale of soldiers who must fight this war at home.

Range Data for High Speed Targets

By Major W. A. Rude, Coast Artillery Corps

EDITOR'S NOTE: *This article describes one possible method of applying the basic time-range principle in those cases where no range finding equipment is available. The initial range and course and speed of the target must be estimated.*

There are many instances when firing at high speed targets, such as tanks and motor torpedo boats, that a more accurate data finding system is needed than adjustment by bursts or splashes. Often in such cases the data obtained from small range finders and other methods are too slow or too inaccurate to fill all needs.

The method described in this article requires only the use of a modified range percentage corrector, a stop watch, and two operators to provide a fairly good system of range data determination, without, of course, any refinements. The method described was employed with 75mm guns mounted on improvised panama mounts for use in anti-torpedo boat defense. The results obtained were highly satisfactory.

In addition to a range percentage corrector tape, two charts and one scale are made to be installed on the range percentage corrector. The first chart (figure 2) has curves of range (vertical scale) plotted against yards travel during a five second interval (horizontal scale). The curves are numbered from 1 to 9 indicating the course of the target.

The course number indicates the direction and speed of the target and is based upon a target traveling 50 m.p.h. Course No. 1 indicates a target directly approaching the battery at 50 m.p.h. Course number 5 represents a target traveling normal to the battery. Course No. 9 represents a target traveling directly away from the battery. The course numbers in between represent 22½°, 45° and 67½° angles of approach or recession. For speeds other than 50 m.p.h. an appropriate change in course number is made corresponding to the direction of travel. Thus, if the target is traveling at 25 m.p.h. directly toward the battery, course number 3 would be used, etc. Courses may be designated in fractions, as course 4.5, etc. A chart (figure 3) showing the course to be selected for various speed and directions is provided.

The second chart (figure 4) is a plot of range against travel during the time of flight plus 5 seconds dead time. Thus by setting a pointer opposite the proper curve at the range indicated (by the setting of the tape) the range is corrected for travel during time of

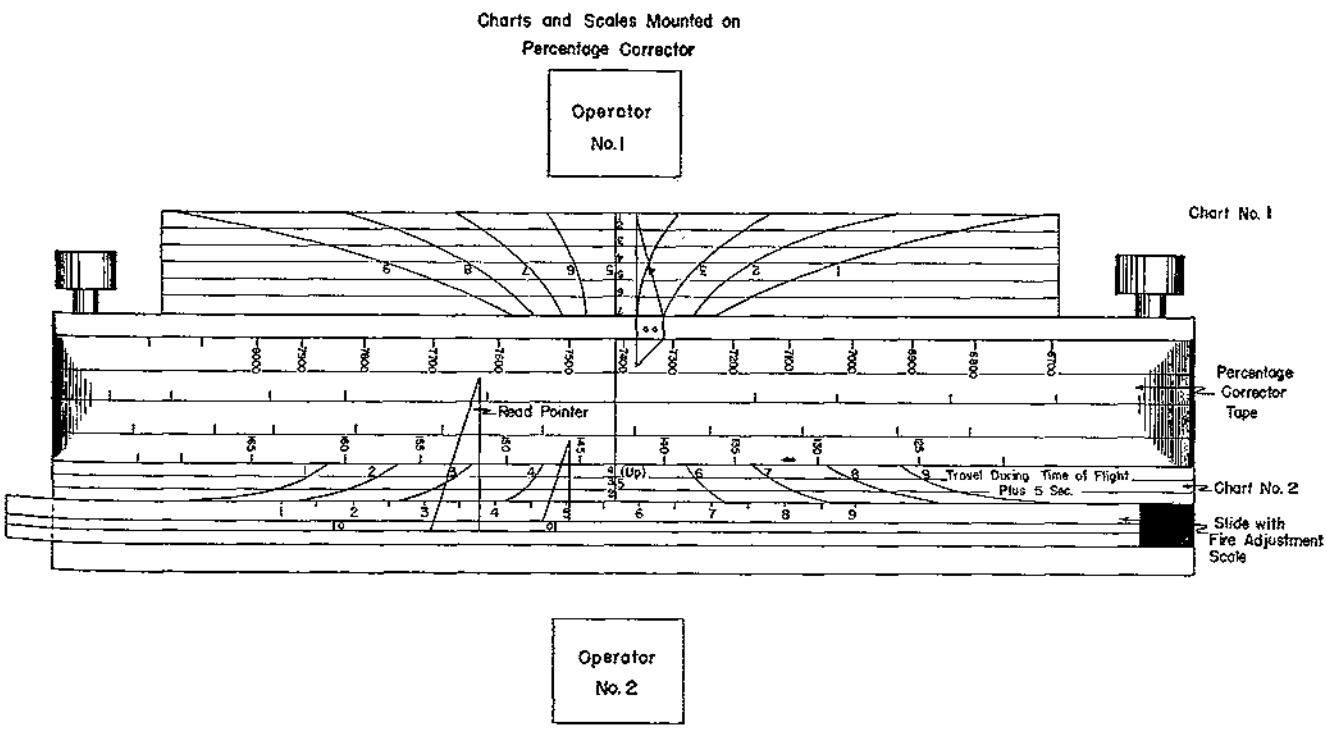


Figure 1

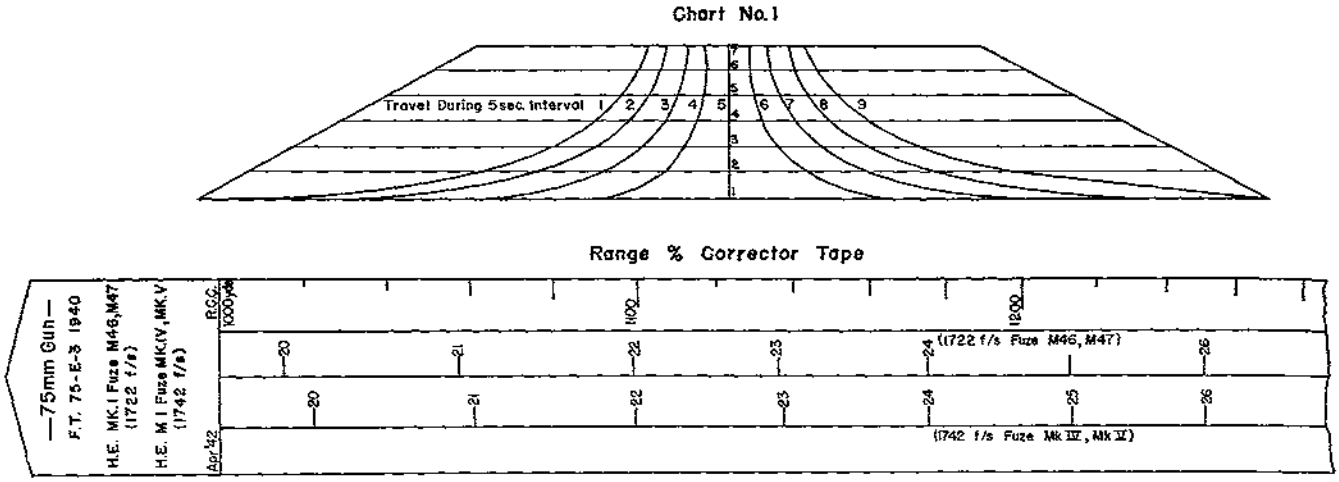


Figure 2

Target Angle	Incoming Target 0	10	20	30	40	50	60	70		Outgoing Target 0	10	20	30	40	50	60	70	
0°	5.0	4.2	3.4	2.6	1.8	1.0	0.2	-0.6		5.0	5.8	6.6	7.4	8.2	9.0	9.8	10.6	0°
10°	5.0	4.2	3.4	2.7	1.9	1.1	0.3	-0.5		5.0	5.8	6.6	7.3	8.1	8.9	9.7	10.5	10°
20°	5.0	4.3	3.5	2.8	2.0	1.2	0.5	-0.3		5.0	5.7	6.5	7.2	8.0	8.8	9.5	10.3	20°
30°	5.0	4.3	3.6	2.9	2.2	1.5	0.8	0.1		5.0	5.7	6.4	7.1	7.8	8.5	9.2	9.9	30°
40°	5.0	4.4	3.8	3.2	2.5	1.9	1.3	0.7		5.0	5.6	6.2	6.8	7.5	8.1	8.7	9.3	40°
50°	5.0	4.5	4.0	3.5	3.0	2.4	1.9	1.4		5.0	5.5	6.0	6.5	7.0	7.6	8.1	8.6	50°
60°	5.0	4.6	4.2	3.8	3.2	3.0	2.6	2.2		5.0	5.4	5.8	6.2	6.8	7.0	7.4	7.8	60°
70°	5.0	4.7	4.4	4.1	3.9	3.6	3.3	3.1		5.0	5.3	5.6	5.9	6.1	6.4	6.7	6.9	70°
80°	5.0	4.8	4.7	4.5	4.4	4.3	4.2	4.1		5.0	5.2	5.3	5.5	5.6	5.7	5.8	5.9	80°
90°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	90°

Speed (M.P.H.)

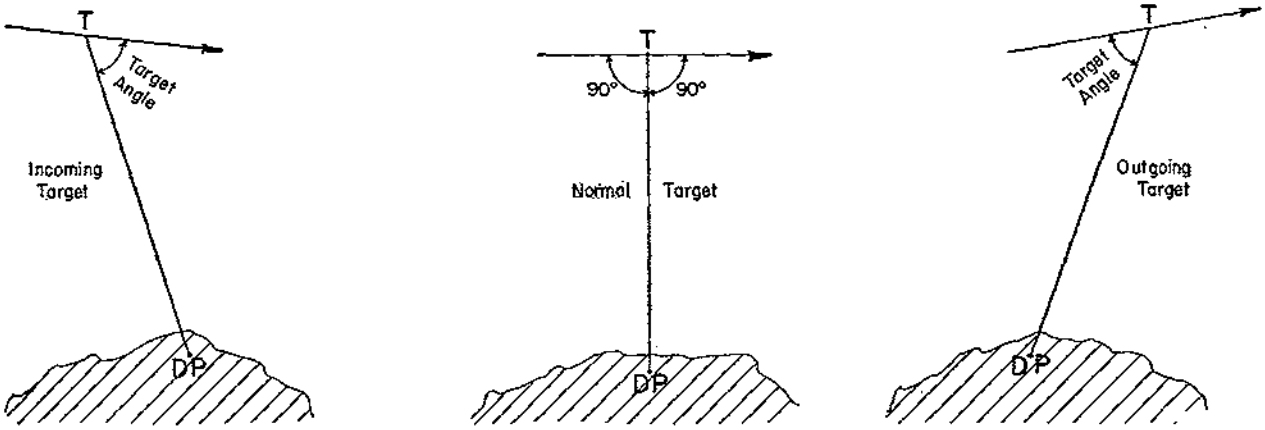


Figure 3

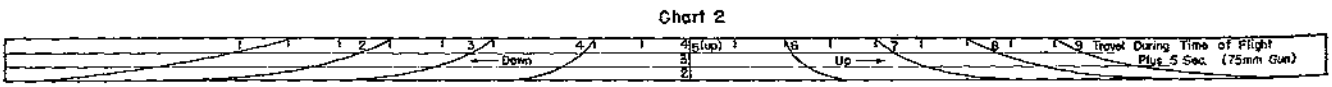


Figure 4

Fire Adjustment Scale (75 mm.)
1 Fork = 2%

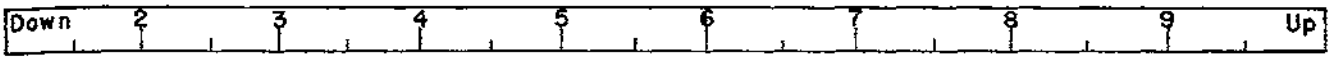


Figure 5

flight plus dead time. It is to be noted that at ranges above 4,000 there is no appreciable variation in the curves and the scale is the same.

The scale is for fire adjustment and is in reference numbers from 1 to 9, 5 being normal or no correction. Each unit represents one fork, thus 6 would be up one fork. Half fork marks are indicated on this scale.

To use these scales in connection with the range percentage corrector, two operators are needed. Operator number 1 sits with a stop watch; after the course of the target has been selected and the initial range announced, he starts his watch and advances the corrector tape the amount the pointer is offset from the index each five seconds by moving the reading opposite the index over to the pointer. The pointer is set on the selected course curve at the range indicated under the index reading. Operator number 2 sets his short pointer opposite the proper course curve for the range at which the tape is set. He thus corrects the given range by travel during 5 seconds plus time of flight by reading off the pointer setting.

In assigning his target and giving the commands the Battery Commander acts as follows: Upon sighting the target the usual assignment of target is made followed by the order *"Course (3)."* When the target approaches a known landmark or when a range can otherwise be determined the command is *"Range (5500)"* and the tape brought to the range setting under the set pointer. As the landmark is passed the command *"commence tracking"* is given. At this command the stop watch is started. Thereafter the tape is set every 5 seconds and elevations called to the guns. If the course number changes, the pointer is moved to the new reading on the scale.

After firing is begun the Battery Commander calls out *"Adjustment (3)."* Operator 2 moves his read pointer to 3 on his scale and reads opposite the new setting of his pointer thereafter.

In using this system the object is to adjust fire until the shots are falling just short of the target (on an approaching course). At this point the battery commander commands *"Hold Data"* and firing continues with the same elevation data. The target, if continuing on the present course will come within the hitting area. At this point, which is an established point on the course, tracking and data are resumed. If the shots start creeping off the target, a new course is selected and adjustments made to bring the shots back on. As the target approaches and leaves the battery, the course will have to be continuously changed to correspond to the aspect of the target. Likewise if the target maneuvers, an immediate change in the course is made.

We are determined that before the sun sets on this terrible struggle, our flag will be recognized throughout the world as a symbol of freedom on the one hand and overwhelming power on the other.

* * *

No compromise is possible, and the victory of the democracies can be complete only with the utter defeat of the war machines of Germany and Japan.—General George C. Marshall.

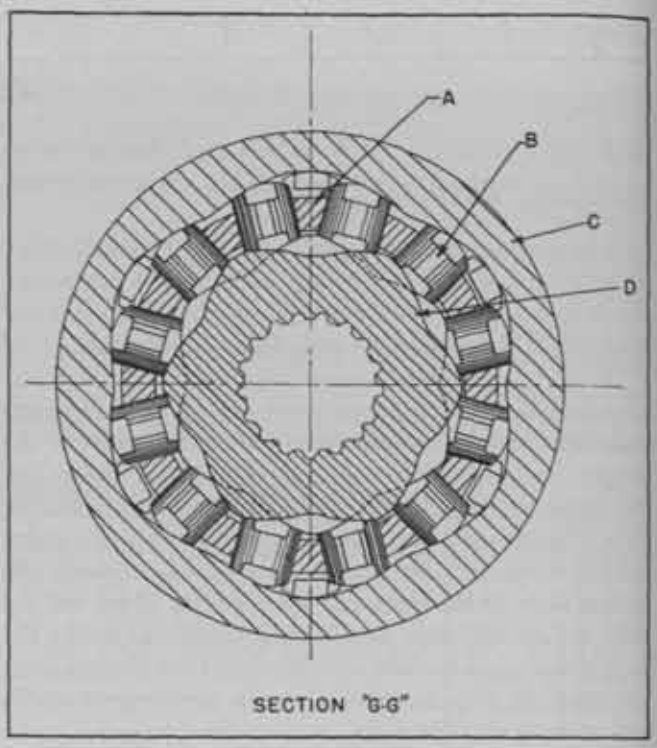
Traction for the Soft Spots

EDITOR'S NOTE: A new development provides added power efficiency for a late model six by six, seven and one-half ton prime mover. The Power Divider described in this article will be of technical interest to artillerymen in mobile units.

The Mack Power Divider is a self-locking differential, which, by suitable variation of detail design, can be built to replace the usual gear type differentials between the two wheels of a single axle, between the two axles of a six-wheel bogie, or between the front and rear axles of four by four or six by six vehicles. By established variations in the detail design of the Power Divider parts, the Divider may be built to function in a number of different ways. The most usual type is that supplied between the two axles of a six-wheel rear bogie, or between the two wheels of any one axle, and in this form, the usual percentage division is in the neighborhood of thirty-seventy in either direction. The less common design is one whereby the power application in one direction can be definitely limited to a given percentage of the maximum input from the engine and transmission, while in the opposite direction, it may provide for full one hundred per cent delivery of the power available. Such an installation would be applicable in a transfer case for a six by six vehicle where the maximum power applied to the front axle is only thirty per cent of the output of the engine regardless of how little may be absorbed by the rear drive and of how good the traction may be under the front axle. At the same time, should traction conditions permit of no power absorption on the front axle, one hundred per cent of the total power available could still be delivered to the rear wheels.

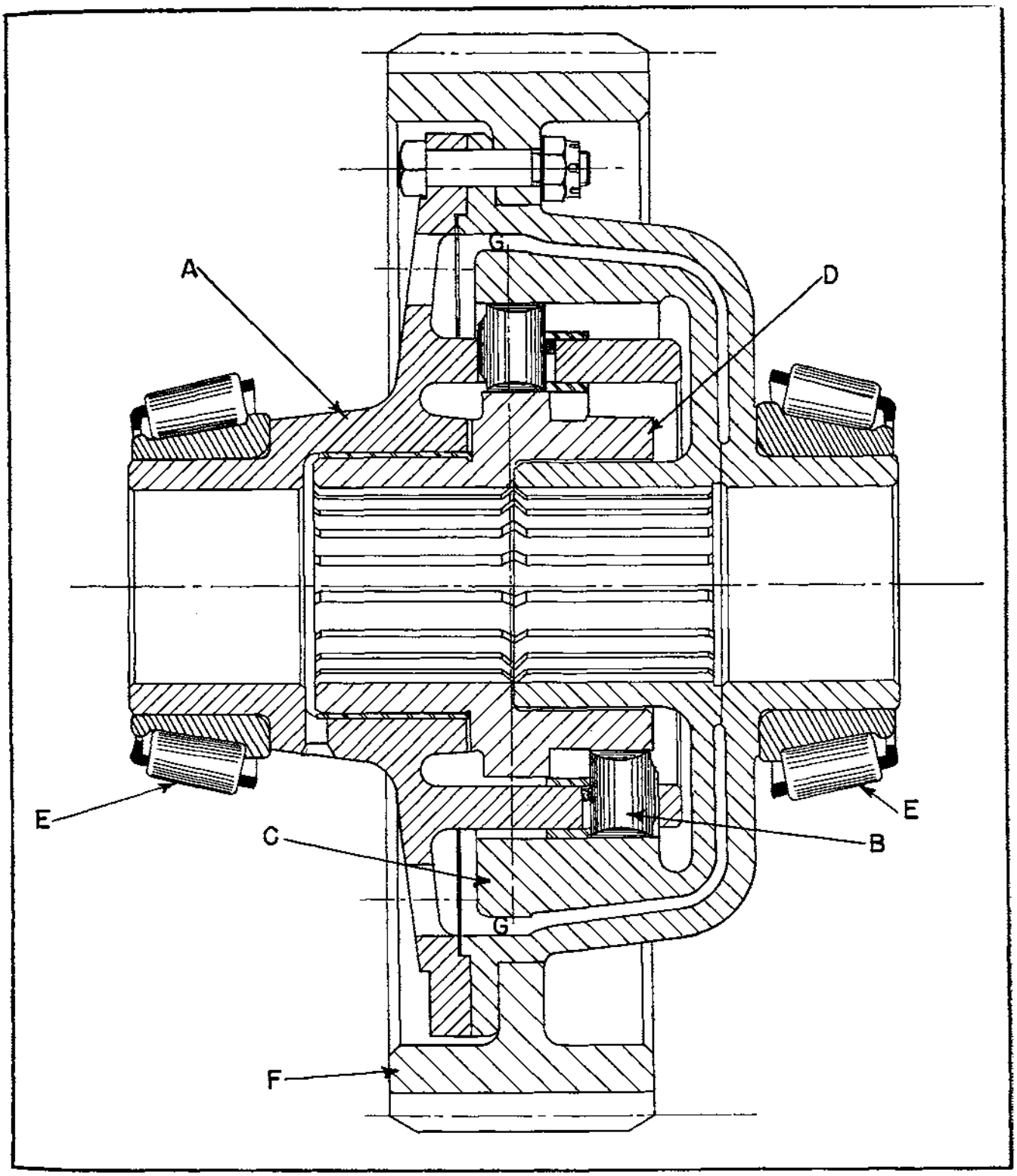
Under all of these conditions, the Power Divider unit operates freely as a differential, permitting free differentiation between opposite wheels on a given axle, or between different axles on the same truck, as is necessary in negotiating turns or traversing rough ground.

It should be understood that the operation of this unit is based on a percentage division, and it is consequently necessary that some slight amount of traction be available on one side of the unit in order to develop full traction on the opposite side. Frequently where conditions are such that no traction can be obtained on one side by the normal tire to ground contact, slight application of the brakes will build up sufficient wheel resistance to lock the unit and permit it to pull the vehicle through the wheel or axle which has good ground traction.



The construction of the Power Divider is shown in the accompanying drawings and comprises three main elements. The driving cage *A* absorbs power from the engine and carries two rows of plungers *B*. These plungers are free to slide endways in holes in the cage. An outer member *C* surrounds the cage and has a wide six-lobed cam track formed on the inside circumference. Inside of the cage is a member *D* which has a pair of six-lobed external cam tracks set in staggered relation to each other. Each cam member, *C* and *D*, carries an internal splined hole to receive the axle shaft ends in the case of an inter-wheel unit, or the bevel reduction pinion driving member in the case of the inter-axle unit.

This whole assembly is set up to rotate on bearing *E* and power is applied to the driving cage *A* through gear *F* or some similar arrangement. Under normal operation, cage *A* will carry the plungers *B* against the cam faces driving both cams at cage speed. If, however, one cam member is held and the other permitted to rotate freely, the plungers will move in and out over the cam lobes forcing the other cam member to turn at



twice the speed of the cage. Due to friction, however, and depending upon the detail design of the working members, a relatively high percentage of the driving effort will be applied to the stationary cam, while the remaining percentage will be applied to the moving cam. Therefore, unless the difference in tractive resistance at the two wheels exceeds the difference between the maximum and minimum percentages of drive division mentioned above, both cams will turn together and at the same speed.

With a gear type differential, the total tractive force at both wheels is equal to twice the tractive force of the wheel having the less traction. With the Power Divider, the cam and plunger design makes it possible to obtain a tractive force at least three times greater in one wheel than in the other. Thus, with one wheel having unfavorable traction, the Power Divider unit can provide one hundred per cent more draw bar pull than the usual gear type differential under similar conditions.

TRIAL SHOT DEVICE

By Lieutenant Alexander H. Lucas, Coast Artillery Corps

This device was constructed with the aim of making the trial shot problem a very simple, evident, and interesting problem to solve. Every part of this device represents a part of the actual layout to scale. In using this device there is no value in a position sketch because the device itself solves the problem graphically and is in itself a sketch. It eliminates entirely the use of so many angles and their conversions to azimuths. The device will solve the problem accurately in less than two minutes.

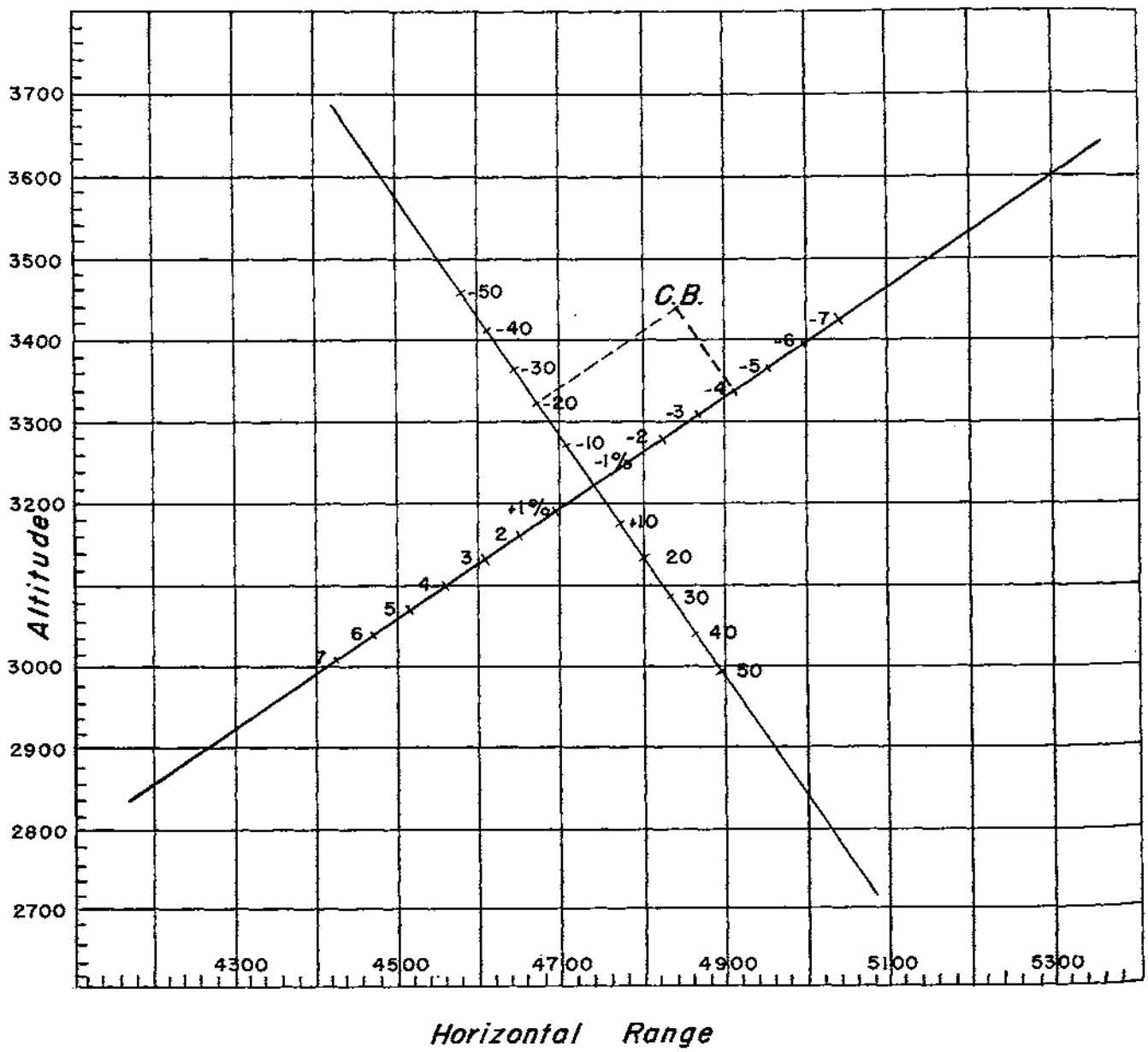
General Description

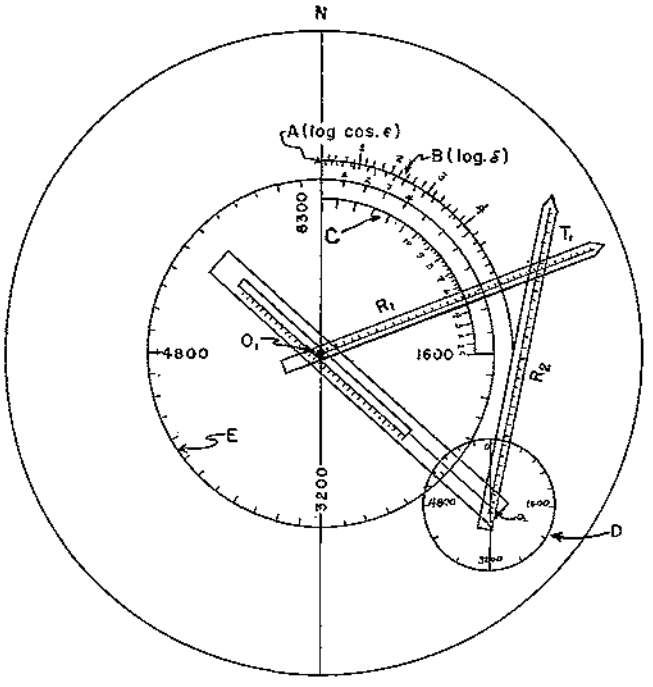
This instrument consists of a wooden disc sixteen inches in diameter, on which is mounted three xylonite arms, all graduated to a convenient scale such as 600 yards to the inch. One arm represents the baseline (O_1-O_2), the other two arms represent horizontal ranges to T_1, or R_1 and R_2.

The disc is conveniently covered with cross section paper so that the ordinate lines can represent north or the meridian from which your azimuths are measured.

TRIAL SHOT CHART, FIRING TABLES 3 AA-J-2

Ø=700 F=13 E=608 R=4740 H=3223 t=12.68





The pivot center on the disc represents the O_1 station. Around this center are four circular scales as follows: scale "C" for measuring angular height; scale "E" for setting azimuths from O_1, such as azimuth of the baseline and the azimuth of O_1 T_1; scale "A" for setting the angular displacement equivalent to the angular height (ε_1 or ε_2); scale "B" for reading the lateral deviation converted to the horizontal plane. It may be mentioned here that scales "B" and "A" are used together in the last mentioned operation.

The circular disc, "D" is an azimuth circle from which, when oriented on the vertical lines, can be read azimuths from the O_2 station.

Operation

Set the length of the baseline at pivot center of the disc and clamp. Set the azimuth of the baseline on scale "E." Set the azimuth of O_1 T_1 (R_1) on scale "E." Move R_2 until it intersects R_1 at the designated range (4740, for instance). Instantaneously you can read from R_2 the range O_2 T_1. With R_1 and R_2 intersecting as described, orient the azimuth disc "D" by placing zero on the vertical lines and read directly under the R_2 hair line the azimuth O_2 T_1.

To solve for ε_2: Set the arm used for the baseline to the length of R_2, just solved, and move it to the horizontal position (1,600 mils). Make the R_2 arm vertical (ordinate lines) and it will represent the altitude. Using the R_1 arm as slant range, cause it to intersect the R_2 arm at the designated altitude. On the hair line on the R_1 arm read ε_2 from scale "C."

To convert deviations measured in the inclined plane to the horizontal set the baseline arm to zero (vertical) on scale "A"; set arm R_1 to value of angular height at which deviation was measured (ε_1 or ε_2) on scale "A"; without changing the angular displacement between the arms, move until the baseline arm is on value of deviation in slant plane on scale "B"; read deviation in horizontal plane under arm R_1 on scale "B." The new triangle is then set up identically as before and the location of the Center of Burst found.

To compute the trial shot corrections use the trial shot chart for the particular T.S.P. used. For example: The new horizontal range, R_1, is plotted with the observed vertical deviation from O_1, thus giving the location of the CB. Lines drawn from this point parallel to the line of position and to the quadrant elevation line will indicate corrections directly from these lines on the trial shot chart. See figure plotted on trial shot chart attached—Example R_1 to CB = 4,840 yards.

Observed Deviation from O_1 = A 20.

From this figure it will be noted that the % H correction is −4%. The $d\phi$ correction is −20 mils. The azimuth correction of course is taken from the observed lateral deviation from O_1 converted to the horizontal.

Editor's Note: *The above device consists of a relatively simple plotting board with elements arranged for graphic display. It is practicable and has considerable merit. Desired accuracy, however, based on Slide Rule M1 operation, indicates a necessary doubling in size of the device.*

The key to victory hangs in the tent of the commander.—Foch.

MINIMUM RANGE—155MM GUNS

By Captain C. H. Holland, Coast Artillery Corps

It is often important tactically to know the minimum range at which a battery can fire. This minimum range is affected first, by the height of site of the battery and second, by the minimum elevation. The minimum elevation may be determined by a mask or by the construction of the gun carriage.

This problem is covered in FM 4-10, par. 52 to 56, for firing tables other than the new 155mm type. The computations are different in detail for the 155mm guns because their firing tables are now in a different form and do not include the effect of "target below gun." The object of this article is to supplement the information in FM 4-10. Calculations of the type covered in FM 4-10 will not be repeated but references are indicated for the convenience of the reader. The following examples will indicate the computations which are "cut-and-try" in nature.

(1) Minimum elevation, determined by a mask = 30.0 mils (See FM 4-10 par. 51 *c*)
Assume normal charge and characteristics of 155mm gun, shell and fuze as given in F.T. 155-B-5, part 2*b*-1. Height of site = 180 feet, or 60 yards above sea level.
Table A, p. 42, F.T. 155-B-5.
Level Point Range (30.0 mils) = 2,000 yards.
By slope of fall, determine approximate minimum range (See FM 4-10 par. 53).
Slope of fall = 1/31
Approx. Min. Range = 2,000 + (60 x 31)
= 3,860 yds.

Try 3,500 yards

$$\tan \varepsilon \text{ (angle of site)} = \frac{60}{3{,}500} = .01714$$

$$\varepsilon = -17.45 \text{ mils}$$

Complementary angle of site

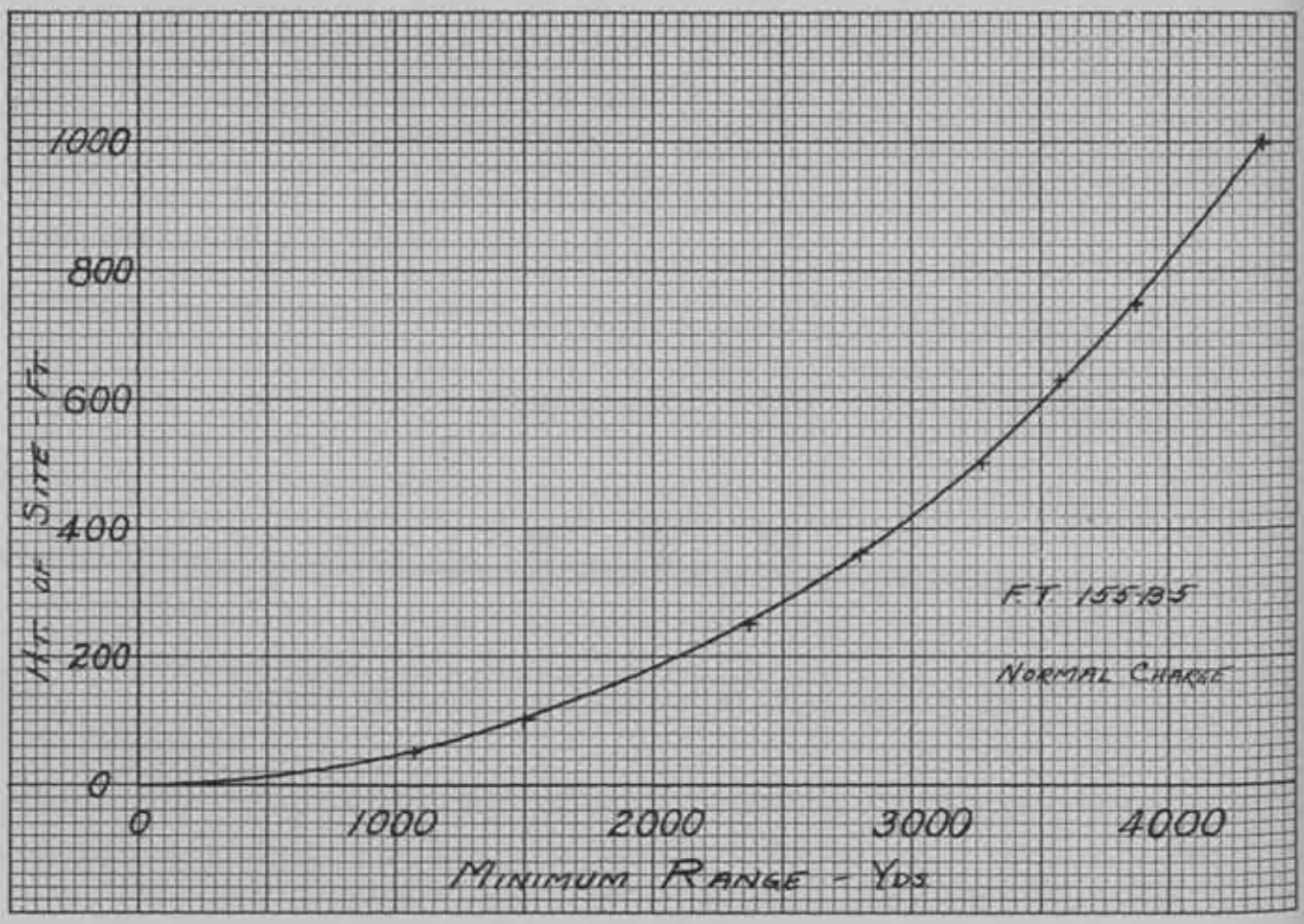
$$-.01 \times 17.45 = -0.17 \text{ mils}$$

$$\text{Corrected } \varepsilon = -17.62 \text{ mils}$$

From Table A

Elevation for 3,500 yds.	=	58.4 mils
Corrected ε	=	− 17.6
Corrected Elevation	=	40.8 mils
Level Point Range for 40.8 mils	=	2,611 yds.

This is over—come down 500 yards.



Try 3,000 yds.

$$\text{Tan } \varepsilon = \frac{60}{3{,}000} = .0200 \qquad \varepsilon = -20.37 \text{ mils}$$

Complementary angle
$-.01 \times 20.37$ $\quad -$ .20 mils

Corrected ε $\quad = -$ 20.57 mils
Elevation — 3,000 yds. $\quad =$ 48.2

Corrected Elevation $\quad =$ 27.6 mils
Level Point Range for 27.6 mils $=$ 1,863 yds.

By proportion:

$$\frac{\Delta R}{3{,}500 - 3{,}000} = \frac{2{,}000 - 1{,}863}{2{,}611 - 1{,}863}$$

$$\Delta R = 90 \text{ yds.}$$

Minimum Range $= 3{,}000 + 90 = \underline{\underline{3090}}$ *yds.*

(2) The problem of minimum range can also be encountered, as mentioned above, when there is no mask. This is due to height of site and minimum elevation of the carriage. When solving this problem the angle of fall method cannot be used to give an approximate value for "cut-and-try." It is necessary to estimate the approximate minimum range and then calculate until the corrected angle of site approximately equals the angle of elevation. This is somewhat simplified by interpolating as shown below.

Assume normal charge and characteristics of 155mm gun, shell and fuze as given in F.T. 155-B-5, part 2*b*-1. Height of site = 250 feet = 83 yds.

Try 2,500 yds.

$$\tan \varepsilon = \frac{83}{2{,}500} = .0332$$

$$\varepsilon = -33.9 \text{ mils}$$

Complementary angle $= -$ .3

Corrected ε $\quad = -$ 34.2 mils
Elevation (2,500) $\quad = +$ 38.8

Difference $\quad +$ 4.6 mils *Too High*

Try 2000 yds.

$$\tan \varepsilon = \frac{83}{2{,}000} = .0415$$

$$\varepsilon = -42.3 \text{ mils}$$

Complementary angle $=$ 0.0

42.3
Elevation (2,000) $\quad = +$ 30.0

Difference $\quad -$ 12.3 mils *Too Low*

By proportion:

$$R = 500 \times \frac{12.3}{12.3 + 4.6}$$

$$= 364 \text{ yds.}$$

Minimum Range $= 2{,}000 + 360 = \underline{2360}$ yds.

Values of minimum range due to height of site and zero elevation of the gun carriage have been calculated for 155mm guns firing the shell and fuze specified above. Normal Charge (F.T. 155-B-5, part 2*b*-1) for height of site from zero to 1,000 feet. These values are shown on the curve above.

The values of minimum range for the same 155mm guns firing other models of shell and fuze, normal charge (F.T. 155-U-1) will be but slightly different than those shown on accompanying curve.

Supercharge, of course, would give considerably higher values but would not be normally fired if minimum range was a consideration.

Any values calculated, by these methods are for standard ballistic conditions. Ballistic conditions other than standard may result in minimum ranges greater or less than calculated.

Knowledge is the treasure, but judgment the treasurer of a wise man.—WILLIAM PENN.

AT THE

↑ Army and Navy officers in a joint observation station identify and control all passing shipping.
—*Signal Corps, U. S. Army*

→ For night identification of vessels and aircraft, Coast Artillery personnel report directly to the joint station.
—*Signal Corps, U. S. Army*

↓ Suspicious vessels are tracked by observation instruments and their courses plotted, "just in case."
—*Signal Corps, U. S. Army*

HARBOR ENTRANCE

Coast Artillery and Navy personnel join in close coöperation to prevent enemy raiding attacks on important shipping centers and on naval bases. Convoys are assembled under protection of Coast Artillery Forts at the harbor's entrance, preparatory to departure with their naval escorts.

→ An alert battery is prepared for instant action—either for a shot across the bows to stop an unresponsive merchantman, or for a more serious blow to the ambitions of a hostile craft.
—*Signal Corps, U. S. Army*

← "Periscope?" A distant beach patrol locates something suspicious.
—*Signal Corps, U. S. Army*

↓ A Coast Artillery rapid-fire gun. A periscope of a venturesome axis sub would be a perfect target for this straight-shooting little fellow.
—*Signal Corps, U. S. Army*

Lateral Adjustment of Fire

By Captain C. H. Holland, Coast Artillery Corps

The adjustment of seacoast artillery fire to place the center of impact laterally is highly important. A bow-on target offers the battery a relatively great chance of obtaining hits in range, but at the same time presents a small hitting area laterally. Therefore, if the center of impact is but slightly off the target laterally, the opportunity of doing great damage to the target is thrown away. If a broadside target is presented, the lateral adjustment is not as critical; however, the accuracy of fire for all target presentations will be improved if the lateral adjustment is conducted with care.

Lateral Danger Spaces

The lateral limits of a bow-on target are listed to show the limits of the bow-on danger spaces.

Bow-on Target		
Type of Ship	Width (yds.)	½ Danger Space (yds.)
Destroyer	10	5
Cruiser	20	10
Battleship	32	16

Destroyer target. If the center of impact is 1 mil right or left of the center of the target at a range of 5,000 yards, it will be on one edge of the danger space. This will result in probably 50% of the shots missing the target completely. If the range is 10,000 yards, the center of impact will be 5 yards outside of the danger space and more than 50% of the shots will miss the target completely. A destroyer is considered a suitable target for the 155mm guns and for the 6-inch guns. A range of 5,000 yards is a short range for these weapons. Therefore, it is evident that a battery cannot deliver effective fire against this type of target if the center of impact is as much as 1 mil off the center of the target laterally.

Cruiser target. If the center of impact is 1 mil right or left of the center of the target at a range of 10,000 yards, it will be on one edge of the danger space. Again, probably 50% of the shots will be misses in direction. A cruiser is considered a suitable target for 8-inch guns, and a range of 10,000 yards is less than mid-range for these weapons. Again it is evident that the effectiveness of fire will be greatly reduced if the center of impact is as much as 1 mil from the center of the target laterally.

Battleship target. If the center of impact is 1 mil right or left of the center of the target at a range of 16,000 yards, it will be on one edge of the danger space. Again, probably 50% of the shots fired will be misses in direction. The 16-inch gun is the only seacoast weapon which may be expected to do any great damage to a modern battleship. For this particular weapon 16,000 yards is a short range. Therefore, as in previous examples, fire will not be effective if the center of impact is as much as 1 mil off the center of the target laterally.

In the preceding examples the mil unit has been used for simplicity in comparing the linear and angular deviations. Most types of seacoast armament are equipped with lateral pointing equipment graduated in degrees and hundredths. Matériel using mils for pointing in direction is being replaced with degree equipment as new equipment becomes available.

Probable errors. The developed lateral probable errors applicable to the examples previously cited are listed below.

Gun	*Range (Yds.)*	*Dev. Lat. P.E. Yds.*	*Dev. Lat. P.E. Degrees*	*Dev. Lat. P.E. Mils*
155mm and 6-inch	5,000	3	0.034	0.6
8-inch	10,000	12	0.068	1.2
16-inch	16,000	7	0.025	0.4

General Rules

The rules for lateral adjustment are general in nature and must be used with good judgment.

a. Adjustment in direction is based on observed lateral deviations. The deviations may be obtained from an azimuth instrument or a spotting board. The desired method is the use of an azimuth instrument located within 5 degrees of the gun-target line.

b. Accidental errors in direction should be small when compared to systematic errors; therefore, full corrections for lateral deviations are generally justified. In other words, dispersion due to the lateral probable error is usually too small to be considered in adjustment.

c. As in range adjustment, trifling corrections are to be avoided. Adjustments of less than half the developed armament probable error are not warranted.

d. Corrections, when made, should be determined and applied to an accuracy of one-hundredth degree or one mil, depending on the sighting and fire control equipment used. (A necessary exception to this is the Panoramic Telescope M8, where individual gun corrections applied on the sight can be applied only to the nearest five-hundredths degree.)

e. For low-angle fire, lateral corrections are best applied as flat angular corrections. The linear effect of such corrections will vary in proportion to the range. For high angle mortar fire, it is suggested that correc-

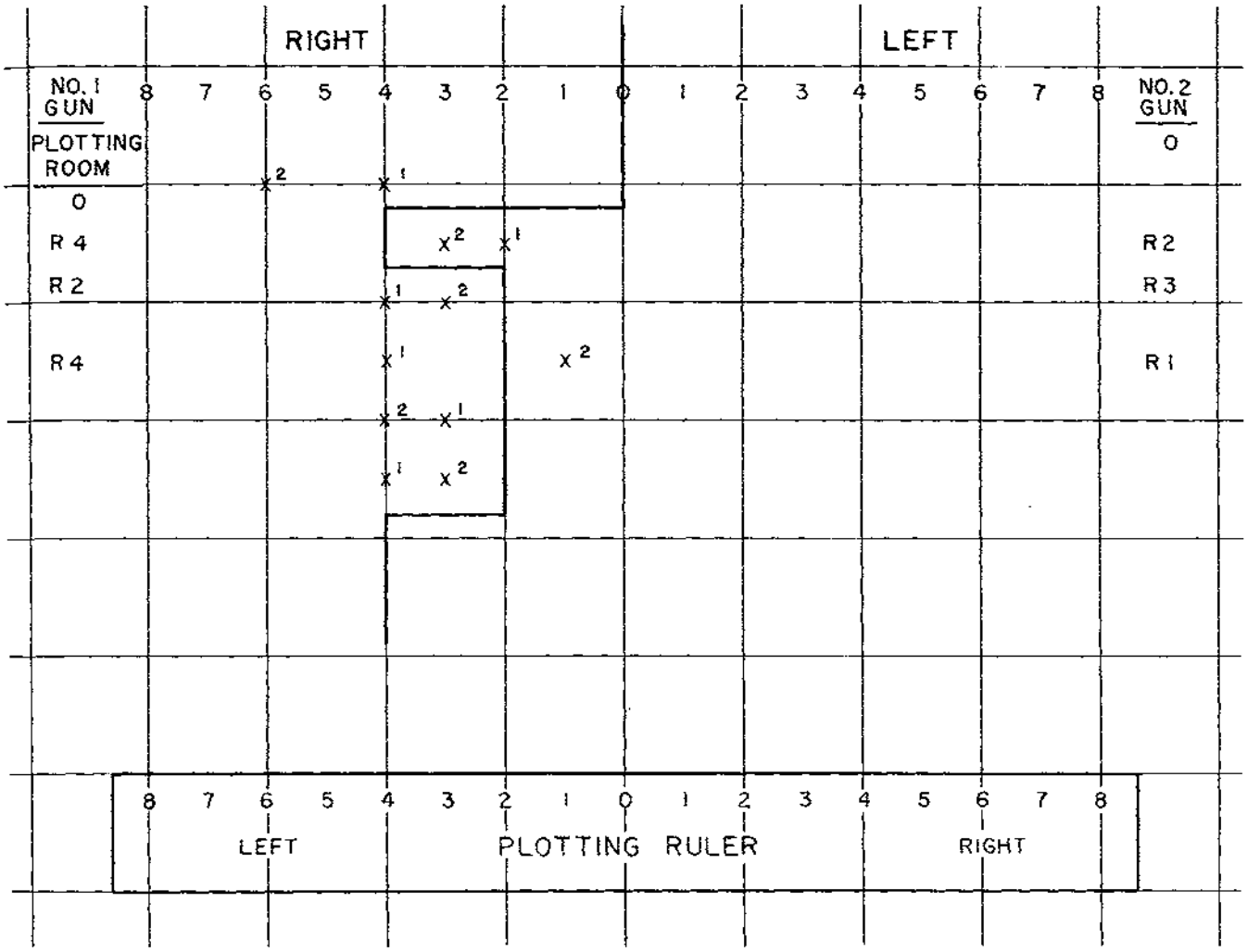


Figure 1

tions be varied within a zone, and from zone to zone, by use of the Azimuth Adjustment Slide Rule. (See FM 4-15, pars. 111 and 97 *d*).

METHOD OF ADJUSTMENT—TWO GUN BATTERIES

Spotting. It is suggested that the salvos be staggered in both trial fire and in fire for effect. The stagger is a three-second delay in the firing of the second gun. The observer near the gun-target line measures the deviation of the splashes. Each splash is measured from the position of the target when that splash occurs. When firing Case III, this adjusts the No. 2 gun for the travel of the target during the stagger interval.

Corrections in direction should be applied on the deflection board for the battery as a whole. Individual corrections to converge the fire of No. 2 gun on No. 1 gun may be made directly on the sight of No. 2 gun, or may be made in the plotting room, depending upon the pointing equipment used.

The suggested procedure is to apply battery corrections on the deflection board to bring the fire of base piece (No. 1 gun) on the target. The fire of the No. 2 gun is made to converge on that of No. 1 by applying an individual gun correcton on No. 2 gun. The fire of both guns is thereby brought to bear on the target.

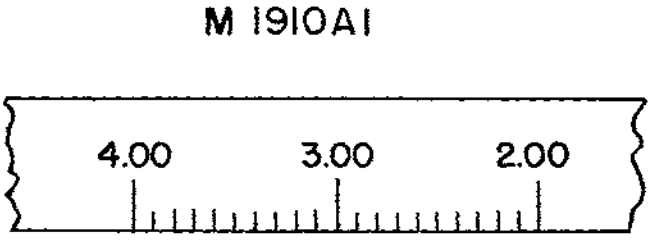
Plotting. It is assumed that the reader is familiar with the corrections method of magnitude adjustment for range. The plotting of impacts in lateral adjustment is done on cross-section paper and is similar to the magnitude method in range. The correction scale on the adjustment board must be graduated in the same manner as the adjustment scale of the deflection boad. The plotting scale or ruler must conform to the units in which lateral deviations are received.

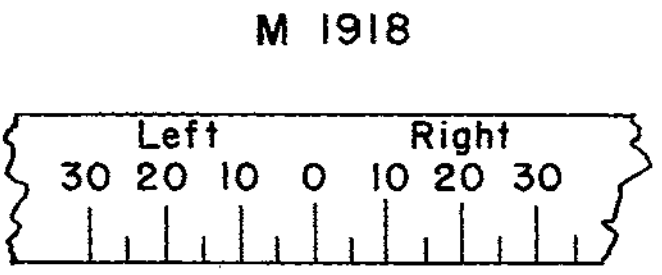
The deviations will usually be received from:

(a) The azimuth instrument M1910 A1. This instrument measures the lateral deviation in degrees, in reference numbers. 3.00 is normal (line) and deviations to the left are above 3.00, while deviations to the right are less. Readings are made to the nearest .01 degree.

(b) The Azimuth Instrument M1918. This is a mil instrument, with a normal of zero (line). Right deviations are plus, left deviations minus. The designation "plus" or "minus" is to be avoided in reading deviations. Use "left" or "right" with this instrument. Readings are made to the nearest mil.

The ruler used to plot impacts should be graduated exactly as the instrument furnishing the deviations:

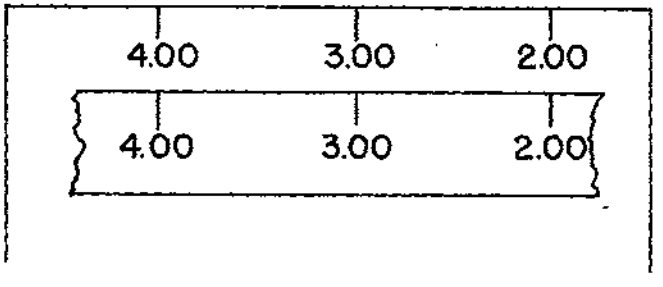




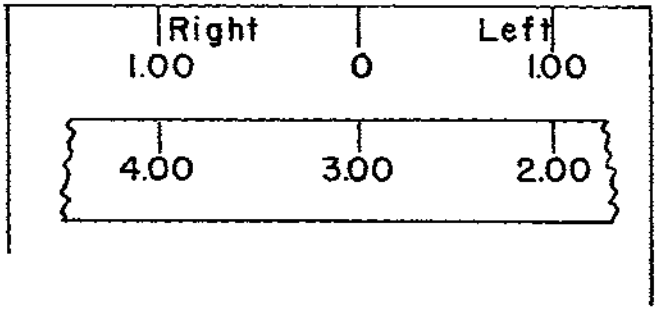
The battery corrections (applying to both guns) resulting from the plotting of these deviations, are read from the top of the adjustment board. This scale at the top of the board must therefore be in the same units as the adjustment correction scale of the deflection board. It must be consistent in magnitude with the scale of the plotting ruler.

Examples:

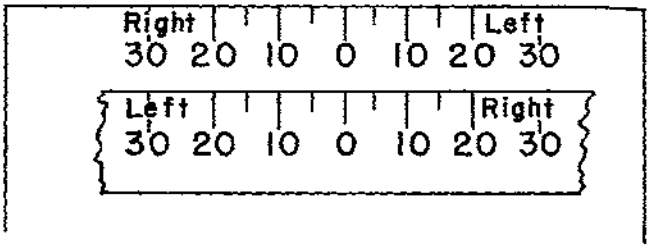
(a) Spotting with the azimuth instrument M1910 A1, with 3.00 normal on deflection board correction scale:



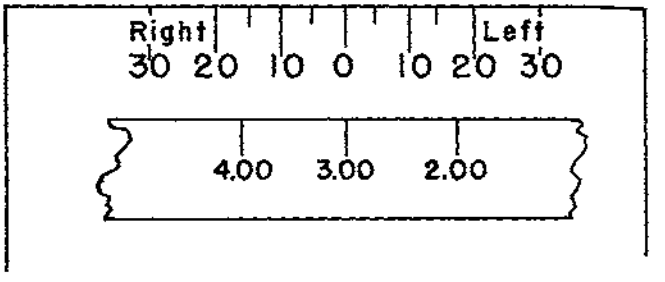
(b) Spotting with the azimuth instrument M1910 A1, with deflection board correction scale with zero normal (degrees):



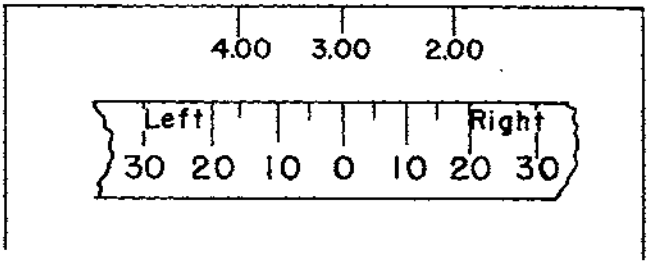
(c) Spotting with Azimuth Instrument M1918 (mils) with deflection board correction in mils (zero normal).



(d) Spotting with Azimuth Instrument M1910 A1 with deflection board correction scale in mils (zero nomal):



(e) Spotting with Azimuth Instrument M1918 with deflection board correction scale in degrees (3.00 normal):



Individual gun corrections. With proper preparation, a battery should open fire with guns shooting very close together. However, when guns do not shoot together, or when they start to "open up," corrections must be applied to converge the fire of the battery. When firing Case III with a stagger between guns, a closing adjustment must be used to correct for the travel of the target during the stagger interval. When angular travel changes, this correction will have to be altered to keep the impacts on the target. When firing Case II a closing adjustment may also be required for Gun No. 2 to correct the battery deflection coming from the plotting room, so that the impacts from both guns would be on the target laterally.

When panoramic telescopes are used, the closing correction can be most easily applied on the sight of No. 2 gun. If guns are pointed by means of an azimuth circle, or with a telescope having no separate adjustment scale, the closing corrections are applied to the data for No. 2 gun, in the plotting room, and it is sent separately to the gun.

It is important to guard against applying a correction to take care of an error made on one shot by a gun

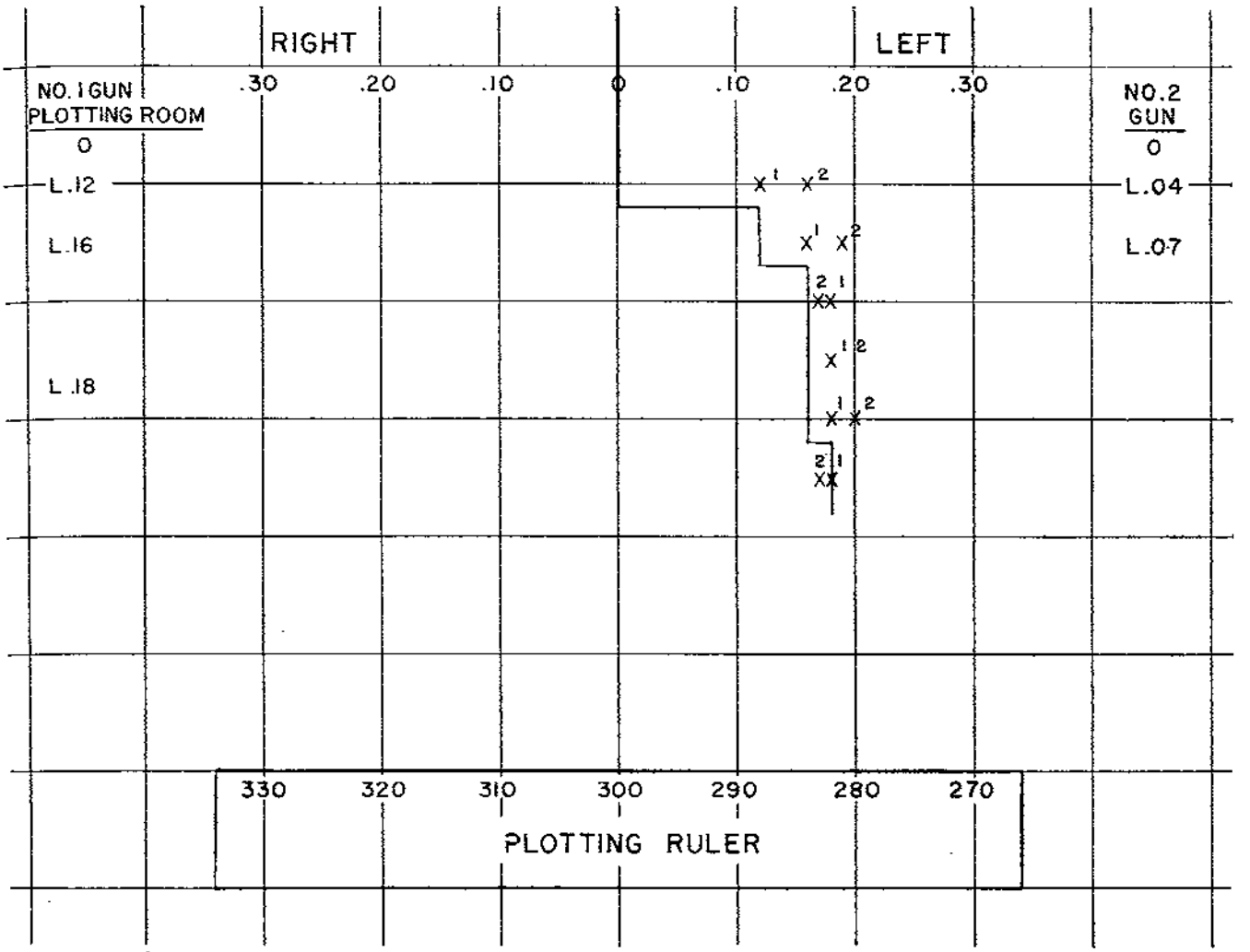


Figure 2

pointer, since it is unlikely that he will make the same error on succeeding shots.

Examples. (1) Spotting with Azimuth Instrument M1910 A1, deflection board correction scale in degrees, with zero normal. See Figure 1.

Deviations	
Gun No. 1	*Gun No. 2*
2.88	2.84
2.96	2.93
2.98	2.99
2.98	2.98
2.98	2.96
Line	3.01

The first two salvos were trial fire. The first salvo indicated a deflection board (No. 1 gun) correction of LEFT .12 since No. 1 splash occurred RIGHT .12. (Note that the battery correction is based on the deviation of the base piece.) No. 2 splash fell .04 right of No. 1, indicating that a correction of LEFT .04 will converge them. This correction is applied directly to the sight of No. 2.

The second salvo is plotted from the new line of targets (LEFT .12) and a full correction applied on the deflection board, based on the plotted impact of No. 1. The new battery correction is read from the scale at the top of the board. In this case it is LEFT .16. The impact of No. 2 indicates that a further change of the closing correction is warranted. A closing adjustment of LEFT .03 is added to the LEFT .04 already on the No. 2 gun to make a correction to be set on the sight of LEFT .07. Never send the amount of change to the gun, but always the total correction obtained by algebraically adding the desired change to the present setting of the correction scale.

During fire for effect it is assumed that the firing interval and time of flight are such, that after a correction is ordered it does not take effect on the next salvo. After two salvos for effect have been reported, a correction is considered. In this case no further change of the closing adjustment is indicated. A battery correction of LEFT .18 is ordered at this time. This will not be effective on the next impacts, however, and the line of targets is not moved until the next salvo is plotted. Plotting is continued throughout fire for effect to correct varying conditions, particularly the travel of the target during the stagger interval when firing Case III.

(2) Spotting with Azimuth Instrument M1918, Deflection Board Adjustment scale, zero normal (mils). See figure 2.

Deviations

Gun No. 1	*Gun No. 2*
L4	L6
R2	R1
L2	L1
L2	R1
L1	L2
L2	L1

Trial fire consists of two salvos. Full corrections to the base piece are applied on the deflection board after each salvo. (After the 1st, RIGHT 4; after the 2d, RIGHT 2).

Successive closing corrections to bring the fire of No. 2 on to No. 1 are applied during fire. Note again that the correction ordered to No. 2 is the accumulated correction, and not the change of adjustment.

In this example, it was assumed that a correction would be effective on the third salvo reported after the adjustment was ordered. This would be determined in firing by the rate of fire and the time of flight for the range at which the battery is firing.

Adjustment of Fire—Four Gun Batteries

The procedure suggested for the lateral adjustment of two-gun batteries can be expanded for application to four-gun batteries. Careful preparation of fire is necessary, however, including calibration in range and determination of displacement between platoons. It is suggested that the two guns of a platoon be emplaced 25 to 50 yards apart.

Spotting. It is suggested that four gun salvos be used in trial fire and that all four shots of a salvo be staggered in both trial fire and fire for effect. The stagger is a two-second interval between the firing of each gun. The lateral observer with one azimuth instrument near the gun target line measures the deviation of the splashes. Each splash is measured from the target when the splash lands. When firing Case III this makes possible adjustment of Guns No. 2, No. 3, and No. 4 for the travel of the target during the stagger interval.

Correction in direction for the battery as a whole should be applied on the deflection board. Individual corrections to converge the fire of guns No. 2, No. 3 and No. 4 can be made directly on the gun sights.

Plotting. The plotting and tabulation of individual

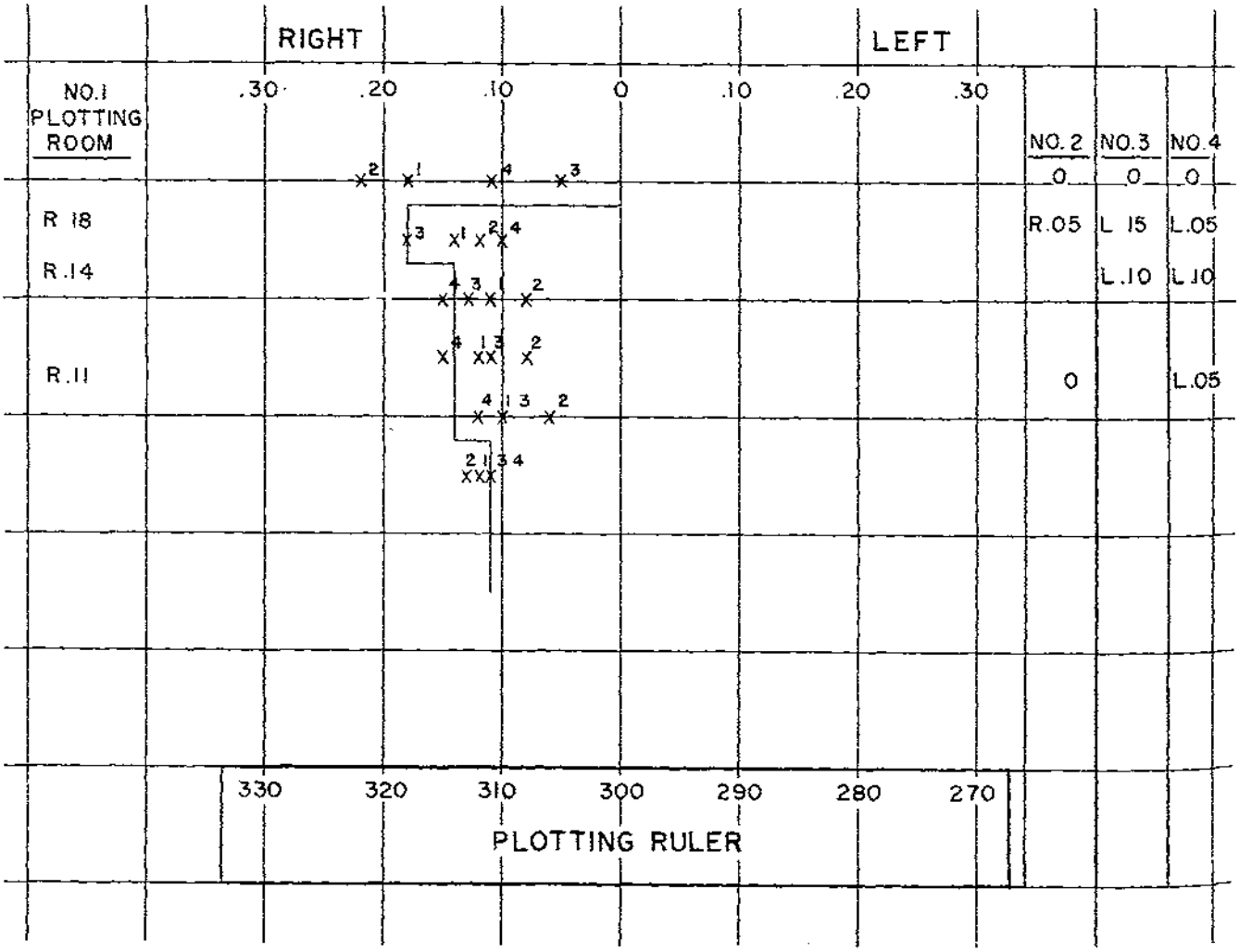


Figure 3

gun corrections are similar to that suggested for two-gun batteries.

Example. Spotting with Azimuth Instrument M1910 A1. Deflection board correction scale in degrees, with zero normal; using M8 panoramic telescope with correction scale zero normal (corrections made on sight correction scale to nearest .05°). See figure 3.

Deviations			
No. 1	*No. 2*	*No. 3*	*No. 4*
3.18	3.22	3.05	3.11
2.96	2.94	3.00	2.92
2.97	2.94	2.99	3.01
2.98	2.94	2.97	3.01
2.96	2.92	2.96	2.98
3.01	3.02	3.00	3.00

The first two salvos were trial fire. The first salvo indicated a deflection board (No. 1 Gun) correction of R.18. The closing corrections for No. 2, No. 3 and No. 4 are determined by the amount of the respective deviations from No. 1. These closing corrections, made to the nearest .05°, are applied directly to the sights of No. 2, No. 3, and No. 4.

The second trial salvo is plotted from the new line of targets and a full correction is applied to the deflection board based on the plotted impact of No. 1. This battery correction is read from the top of the board—RIGHT. 14. Further closing corrections are indicated for No. 3 and No. 4. These additional closing corrections are added algebraically to the corrections already on the sights of these guns.

During fire for effect it is assumed that a correction would be effective on the third salvo reported after the correction was ordered. After two salvos for effect have been reported, corrections are considered based on both salvos. A battery correction of RIGHT. 11 is ordered with further closing corrections of No. 2 and No. 4. The line of targets is not changed until the corrections take effect. Plotting and adjustment are continuous to correct for varying conditions.

It is recognized that the method suggested necessitates a six-second stagger, between gun No. 1 and gun No. 4, which will increase somewhat the dispersion in range. However, in most cases the increase is warranted to keep all four guns firing together in direction.

An alternative method for four-gun batteries is to make closing corrections during trial fire only. Trial fire is conducted by stagged salvo. For Case III, spotting is done from the position of the target at the instant of splash of No. 1 gun thereby converging all fire on a point. For Case II, each splash is measured from the position of the target when that splash occurs. Fire for effect is then conducted by four gun salvo, with all four guns firing together on the firing bell. During fire for effect there is no opportunity to make closing corrections but lateral adjustment of the battery as a whole can still be accomplished by plotting and applying corrections to the deflection board.

American industry, American labor, all America is all-out for this war, and an all-out America cannot be defeated. With our great resources and manpower and with the courageous spirit of free people, we cannot fail. We are pledged to give unstintingly of ourselves to the end that our country, our institutions, and our way of life shall remain forever free.—Hon. Robert P. Patterson.

Improvised Mount For Machine Gun

By Lieutenant Carl M. Allen, Jr.

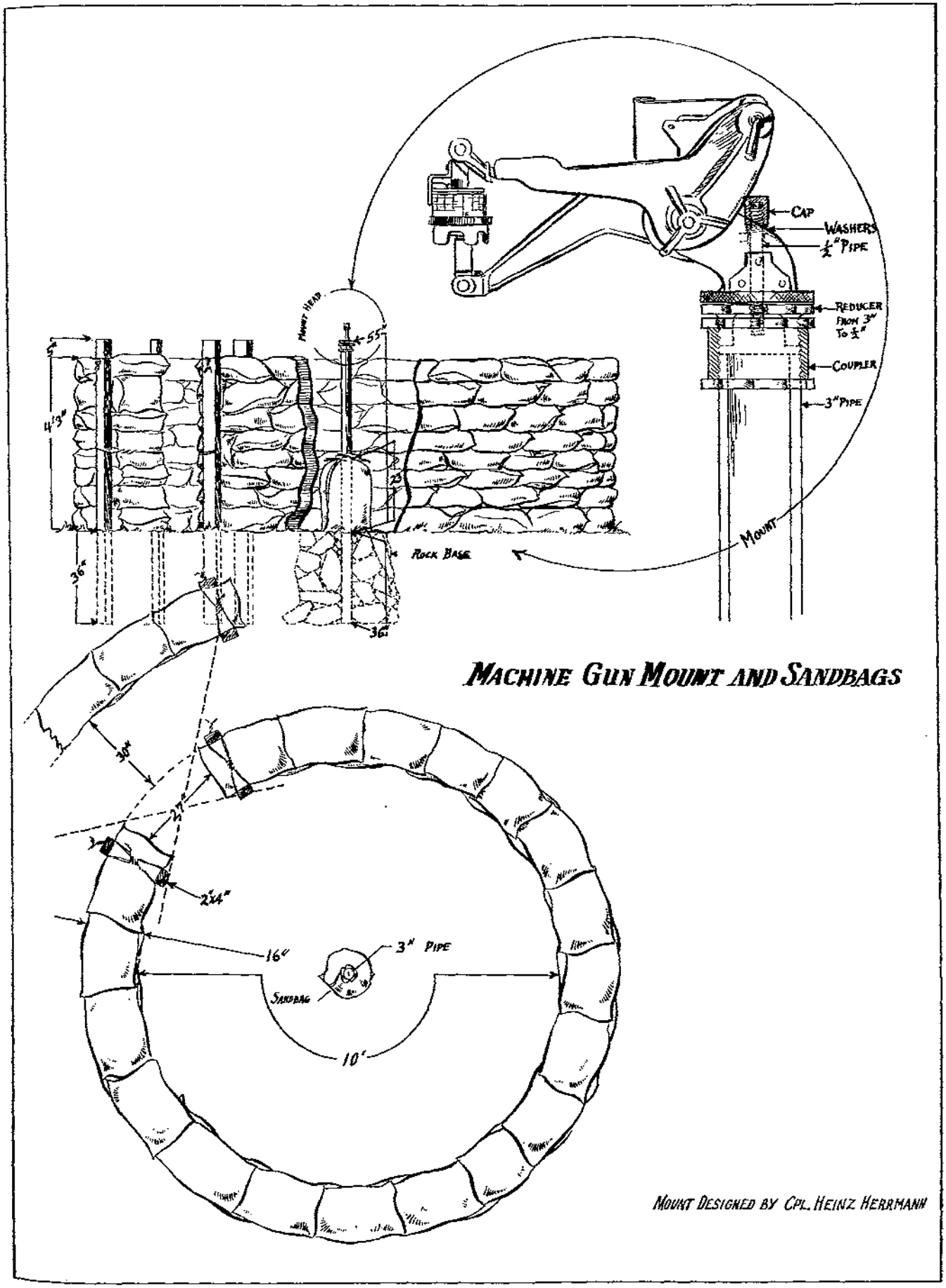
Coast Artillery Corps

Corporal Heinz Herrman, on duty with the Harbor Defenses of Portsmouth, has designed a mount for the Browning M1917 .30 caliber machine gun that requires a minimum of materials and machine work.

The standard or support may be made from any size of pipe available, although three- or four-inch pipe is preferable. Thirty-six inches of the pipe are set in dirt, rock, sand, or concrete for support. The upper end is threaded to receive a standard pipe coupling. A reducing pipe plug, from the pipe size to one-half inch, is inserted in the coupling. A piece of half-inch pipe of suitable length is then threaded through the machine gun yoke and screwed into the reducing bushing. A few washers and a pipe cap are screwed onto the top end of the half-inch pipe.

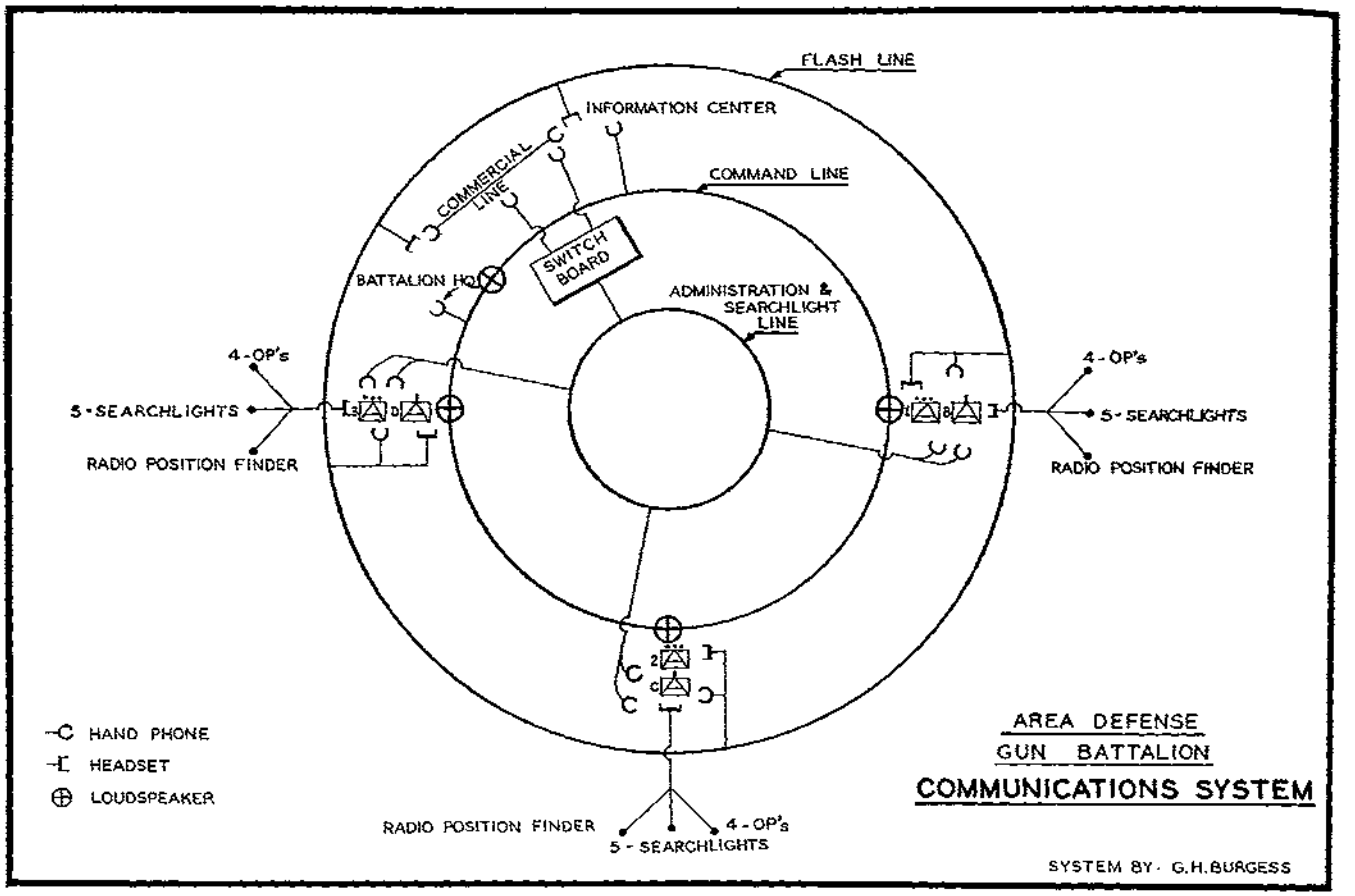
With this rigid and secure mount, the gun may be fired at both air and ground targets.

The design may be modified by the insertion of a smaller diameter pipe into the larger pipe, bolting the smaller pipe to the larger one. The smaller pipe is then fitted with an appropriate reducing bushing to take the half-inch pipe to mount the gun.



MACHINE GUN MOUNT AND SANDBAGS

MOUNT DESIGNED BY CPL. HEINZ HERRMANN



AAAIS Communication Net

By Lieutenant George H. Burgess, Coast Artillery Corps

Information of enemy aircraft must be instantaneous and universally received to be of real value to the antiaircraft area gun defense. Many routine communication nets do not meet these requirements.

A graphic solution to the problem is submitted herewith, assuming that no walkie-talkies are available. As shown by the diagram, there must not be any switchboards anywhere in the intelligence "hot loop," and most operators wear headphones to discourage inattention. Only one verbal relay is pictured and that is included so the searchlight platoon leader can communicate with the Antiaircraft Artillery Intelligence Service observers and searchlight platoon without interfering with the intelligence loop; and so his flashes will be louder and clearer to the gun batteries than those of a distant observation post. The searchlight platoon leader can be made responsible for the operation of the AAAIS in his sector; for which purpose it is advisable to give the searchlight battery an extra officer for each platoon in the field.

Enemy plane flashes are received simultaneously by all gun batteries and higher headquarters on the party line. Observation Posts are numbered starting at North from 1 to 12 as on the face of a clock for absolute fool proofing and simplicity. Aircraft Warning Service flashes are broadcast to the units by the information center by means of loudspeakers. The diagram shows only one of these for both the gun battery and its searchlight platoon on the presumption that the search light platoon command post is located near the gun battery command post.

In general the same system could be multiplied to units larger than a battalion, by adding the command post of each automatic weapons battalion.

The Intelligence Officer and Operations Officer of the highest antiaircraft commander in the area should have lines spliced into the system, as shown; and should also be physically located in a position to see the operations board of the area Information Center of the AWS in order to have more complete information of the enemy. Ordinarily, the location which best satisfies these requirements is the balcony of the operations room of the information center itself.

Flag of the Second Coast Artillery

EDITOR'S NOTE: *Other Coast Artillery units with historic flags are invited to submit stories (with pictures) of their colors.*

Representing the gradual evolution and development of one of the oldest and most colorful regiments in the American Army, the Second Coast Artillery regimental flag has been honored by the War Department with twenty-five battle honors.

Having undergone a gradual modification from the old regimental color, the present flag displays fifteen red and white stripes which were added after the battle of Fort McHenry, since the United States Flag at that time had fifteen stripes. The coiled snake and cactus plant signify the regiment's participation in the Mexican War during the period 1835 to 1857. Above the large eagle on the crest is a smaller eagle sitting at the intersection of the Confederate saltire. This cross of the old Confederate flag represents the part that the Second played in the War between the States. The motto, *Fidus Ultra Finem* (Faithful Beyond The End) was adopted because Fort Pickens, partly garrisoned by the Second, was the only fort south of Fort Monroe that remained with the Federal Government throughout the War between the States.

In honor of the regiment's illustrious history, battle honor streamers have been authorized for the War of 1812 (streamer with inscription); Indian War (Seminoles); Mexican War (Palo Alto, Resaca de la Palma, Monterey, Cerro Gordo, Vera Cruz, Contreras, Cherubusco, Molino del Rey, Chapultepec); Civil War (Bull Run, Florida 1861-1862, Peninsula, Antietam, Fredericksburg, Chancellorsville, Gettysburg, Maryland 1863, Virginia 1863, Wilderness, Spottsylvania, Cold Harbor, Petersburg, Shenandoah).

The original flag of the Second Coast Artillery now hangs in the Library of Congress at Washington, D. C., while others may be seen in the Post Chapel at Fort Monroe.

The "old" Second Coast Artillery flag, now displayed in the Library of Congress.

Twenty-five battle honors decorate the present regimental colors of the Second Coast Artillery.

Ration Computing Device

By Lieutenant Colonel A. L. Bullard, Coast Artillery Corps

Under current systems of rationing, using slide rules and card indexes the breakdown of supplies for the various batteries by the Regimental Supply Office takes from one to two hours. With the use of the Automatic Rationing Device developed by Private Herbert Mittleman, with the encouragement of Captain L. J. Staub, Regimental Supply Officer, 79th Coast Artillery (AA), the same work can be completed in one-quarter of the time and with greater accuracy.

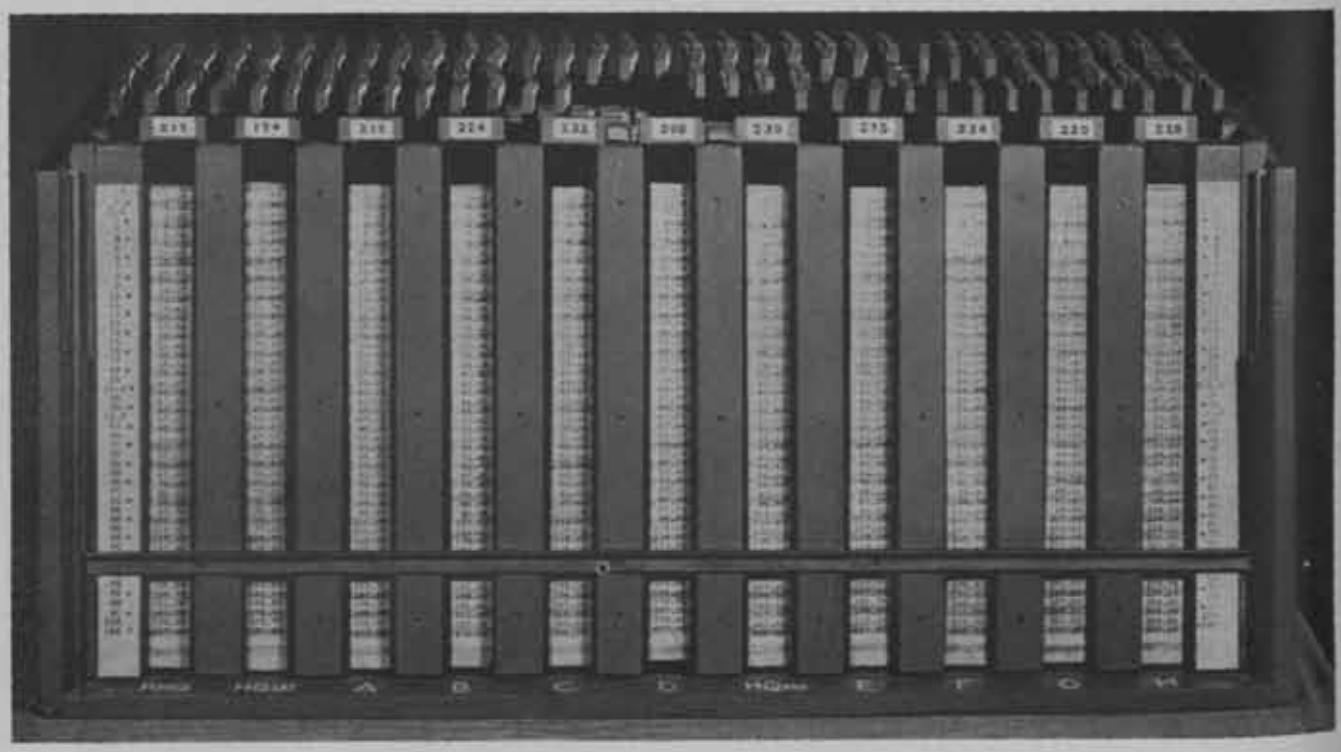
The new device consists of a breakdown board, and a set of slides, each slide containing a complete breakdown for a specific battery strength. There is a slide for every battery strength from 50 to 275. The slides are kept in individual slots in a box behind the breakdown board. Since there is a breakdown on each side of each slide, even numbers are selected from one end of the box, odd from the other. The battery strengths are stated in hundredths so that a strength of 154 would be read as 1.54; this is to remind the user that the scale is for allowance per hundred men.

The breakdown board contains a slot for each battery in the regiment in the order in which they appear on the rationing sheets. On each end of the breakdown board is a scale of allowance per hundred. The scale contains those allowances which are commonly used. They were compiled from the ration allowance sheets received from the Quartermaster Warehouse.

To determine the breakdown, for example, of food allowances for the various batteries, the slides corresponding to the battery strengths for the day are selected from the box and inserted in the slots in the breakdown board for the particular batteries. Then a horizontal slider, which serves as an index line on the face of the breakdown board, is moved vertically to the allowance per hundred men for the commodity to be issued, and the quantity due each battery is read above the slider directly across the board. Thus the breakdown of an article for each of the various units is accomplished by one operation. The advantage of the automatic rationing device over the slide rule is obvious since in a regiment of eleven batteries the slide rule would require eleven individual operations for the same result.

The basic theory of the Automatic Rationer is the pre-computation of the anticipated breakdowns for each unit strength in allowances per hundred men. Therefore by using this device, all computations are eliminated and the job of determining allowances is reduced to a matter of copying the appropriate figures shown on the breakdown board above the slider. Due to the simplicity of operation of the device no technical training is required by the user, as is necessary in slide rule computations.

The data was computed by multiplying the allowances per hundred men by the strength of the battery and dividing the resulting number by one hundred. These computations were made on an adding machine to assure greater accuracy than would have been possible by using a slide rule. The computed data was ar-



ranged on strips and glued on individual slides which were made of white pine 1⅛"x9¾". Each slide contains the breakdown for the battery strength indicated on the top of the slide.

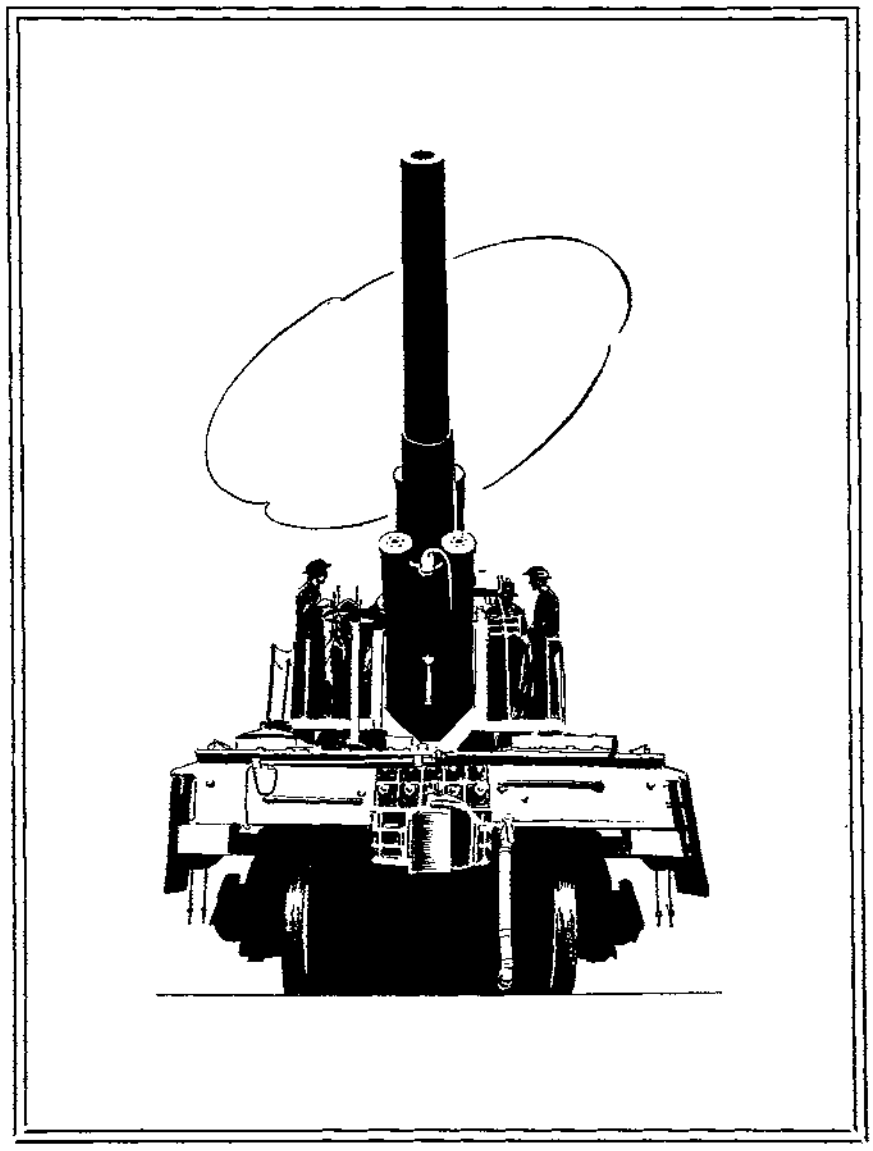
The breakdown board was made of ¾" white pine 9½"x21". The slots formed by T-sections hold the various slides used for the breakdown. The scale of allowances per hundred men was placed on both sides of the breakdown board for easy reference in keeping the slider in the proper position.

The slider used on the face of the breakdown board was made of a T-section metal runner sash and is notched so that the edge is placed directly against the figures to be read.

The saving of the time in rationing is particularly desirable in the cases where the ration allowance sheets are received at the same time as the commodities. In these instances a fast and accurate breakdown must be made at the time of distribution.

The other possible uses of the device include the breaking down of quarterly allowances and other items which are distributed in accordance with battery strength. In cases where the number of batteries may be increased the Automatic Rationing Device would be of further value in computing ration allowances.

Private Mittleman is now working on plans for a smaller adaptation of the device to be made of light metal, suitable for use in the field.

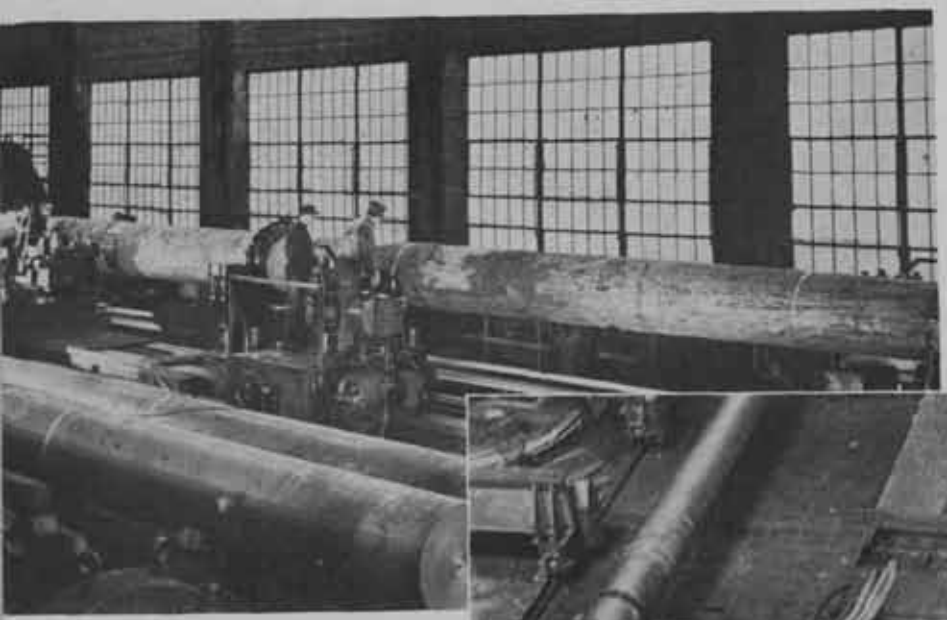


Forging the outer tube.
—*Photo by Bethlehem Steel Co.*

ROLLING OUT THE BARRELS

Big Ones Are On the Way

Lowering a 16-inch tube into a heat-treating furnace.
—*Photo by Bethlehem Steel Co.*

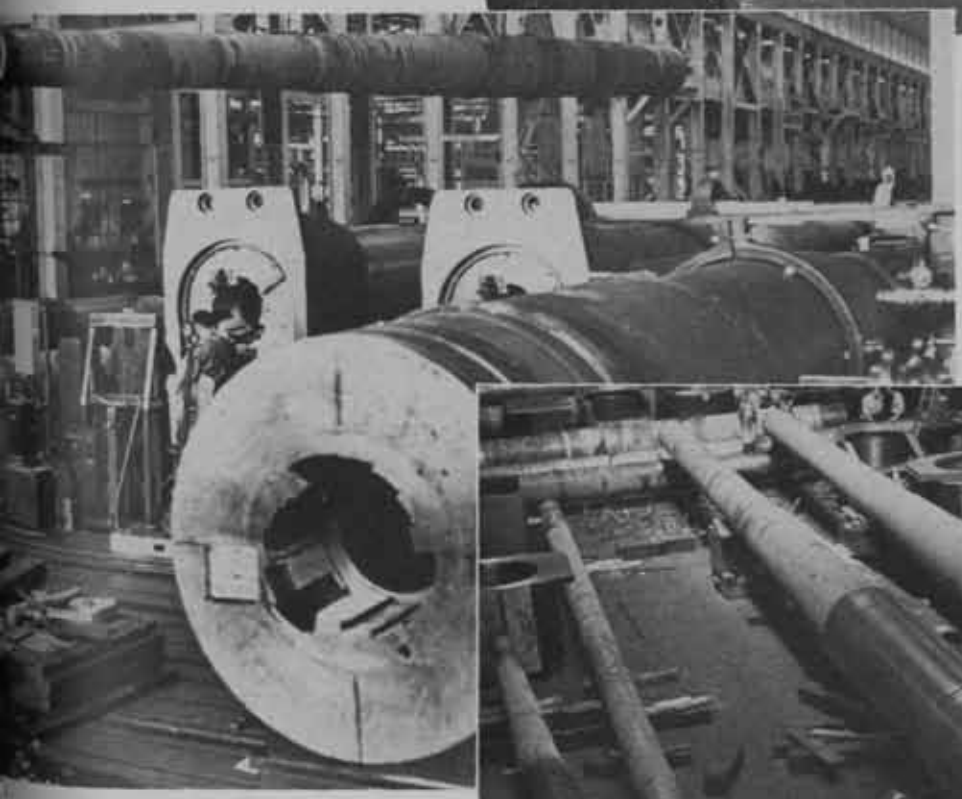


Machining forgings.
—*Photo by Bethlehem Steel Co.*

Another 16-inch tube goes into the shrinkage pit, preparatory to shrinking on the hoops.
—*Signal Corps Photo*

← And still another big one gets ready for the shrinkage pit.
—*Signal Corps Photo*

↑ Polishing the cradle surface of a 16-inch seacoast gun.
—*Signal Corps Photo*



← Fitting breech mechanisms.
—*Signal Corps Photo*

→ Ready or not, Adolf, here they come!
—*Signal Corps Photo*

Japanese Tactics and Materiel

Section I

Infantry in Malaya

1. The Infantry Platoon

(a) Organization

The platoon consists of forty-two men. It has four sections of ten men each, a platoon commander who is a second lieutenant, and a noncommissioned communications officer (Renrakukashi). Number 1 section usually is commanded by a sergeant, and numbers 2, 3, and 4 are commanded by corporals. The platoon commander gives all orders for sections; for instance, such as "Section 1, Advance," "Section 2, Advance." There are three platoons in each company.

(b) Armament

The first three sections of the platoon are armed with rifles, and the fourth, the Grenade Discharger (Tekidanto) Section, is armed with three grenade dischargers. Each rifle section is armed with one light machine gun, and has a machine gunner, two men who carry ammunition, and seven riflemen. There are no organized subsections and the light machine gun group is not intended to be split for action. No tommy gun is included in the section armament. Hand grenades are carried by all. In the grenade discharger section, one man carries and fires each discharger, and two men, armed with rifles, carry ammunition for each weapon. Again, this section is not intended to be split but to be used as a unit reserve of fire power.

(c) Intercommunication

The non-commissioned communications officer of the platoon maintains intercommunication between sections by visual means or by using soldiers as runners. The runners may use bicycles if the sections are not widely separated and if the terrain permits. (In China, bicycles have been used for intercommunication, especially between units up to the size of a company.) Regimental radio communication usually goes down as far as the company headquarters, which has a pool of thirteen runners for communication on down to the platoons.

(d) Antitank Defense

The Japanese platoons in Malaya apparently did not use antitank rifles. Instead, they used a variety of antitank bombs and time bombs. The bombs undoubtedly were effective in close country, but in open country where close approach is impossible they would be useless. Some of these bombs are carried in the Number 1 Section, but how many and by whom is not known.

2. *The Infantry Section*

(a) Tactics in Battle

(1) According to information derived from prisoners, figure 1 shows the most frequently used platoon employment of sections carried out by the Japanese in Malaya:

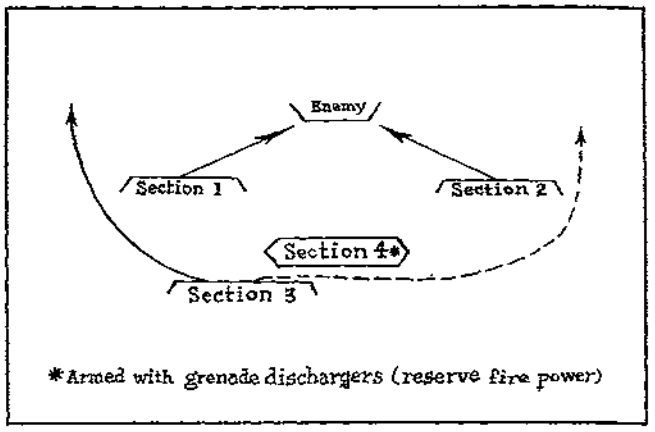


Figure 1.

(2) Sections 1 and 2 make frontal assaults on the enemy. Section 3 attacks the enemy's right or left flank. The section rarely ever divides into subsections to attack both of the enemy's flanks at a given time because (a) of the danger of hitting their own men by cross fire from two flanks, and because (b) of the danger of weakening section strength by splitting into subsections, particularly since there is only one light machine gun to a section. The Japanese have tried splitting a section but with very little success. In this case, for instance, Section 3 may be divided into one big subsection and one small subsection. Thus divided, the smaller subsection is used more as a decoy than for attack.

(3) The Grenade Discharger Section, Number 4, usually operates in a reserve fire-power position. It is usually located in the center of the formation, between and slightly to the rear of Sections 1 and 2.

(4) The light machine guns of the first three sec-

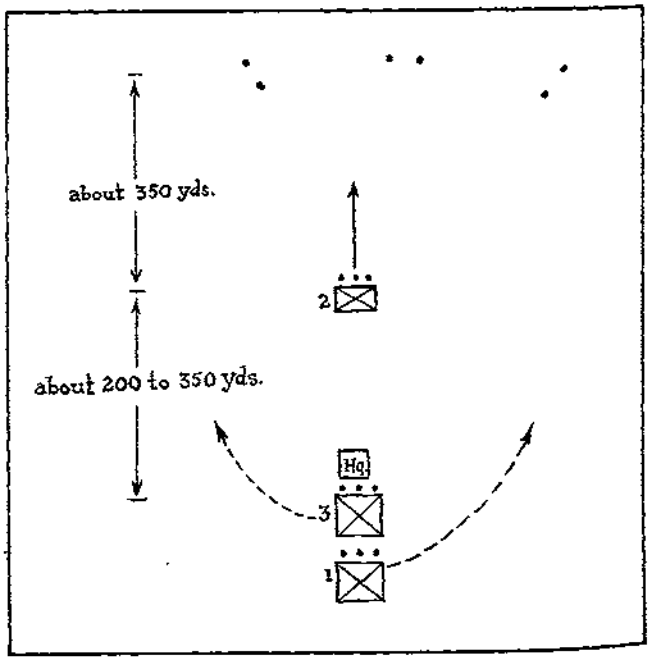


Figure 2: Approach march of Japanese Infantry Company.

tions are used only in front and hardly ever as reserve fire power.

3. *The Approach March*

(a) The Company

The Japanese infantry company uses roads in the approach march (fig. 2) until contact with the enemy is made. The leading element of the company consists of six scouts, who range about 350 yards ahead of Number 2 platoon. Back of this platoon by 200 to 350 yards is company headquarters, which is followed closely by Number 3 platoon and then Number 1 platoon.

(b) The Platoon

The platoon also uses the roads in the approach march, if roads are available, even up to the time when contact is made. Usually one section travels along the edges of the road and the other sections travel under cover as far as possible on each flank. According to one prisoner, scouts are used to locate hostile positions, but upon locating them return to the sections for the attack.

4. *Bivouacking*

The Japanese troops often dig their own trenches for use during the night. The trench is a box-like affair with space for only one person. Sentries are posted within a radius of 60 to 125 yards of the camp.

5. *Transportation*

(a) Motor Transport

Motor transport is used mainly for the transportation of troops and supplies, which include ammunition. One prisoner of war stated that he traveled on motor transport most of the way from the Thai border deep into Malaya adding that a short distance of the way was traversed on a bicycle and that only very little walking was done. There is no platoon truck. The individual soldier carries all of his equipment, which includes digging tools.

(b) Motorcycles

The normal platoon organization does not include motorcycles.

(c) Bicycles

Bicycles are an important means of transportation. Illustrative of this, one Japanese battalion was transported as follows: two companies on bicycles and one company on motor transports. When troops on bicycles became tired, the personnel swapped places with the motor transport riders. (Bicycle troops are organized separately from the infantry.)

6. *Night Operations*

When night operations are in progress, the formation of the sections is much closer than in daytime operations because of the fear of losing contact. The stress in night operations is put on surprise, which is gained by outflanking and by silent movement. Weapons are of minor importance compared to the approach crawl, used until the enemy can be leapt upon.

7. *Messing*

The independent mobility of the Japanese is assisted greatly by simplification of messing arrangements. Each man carries in a sack on his back one day's emergency rations and five day's supply of rice. Since each is responsible for his own cooking, there is no waiting for hot meals to be brought up. Generally, the men of a section cook their food on a coöperative basis. No special cooking stove or other cooking apparatus is carried. Often a fire is made only once a day, in the morning, when enough food is cooked to last for the day. To a considerable extent, the soldiers live off the country. The quality of rations deteriorates as operations develop in intensity and often rice and salt are the only foods. Sugar usually is procured locally and it is a luxury for the Japanese Army.

Section II

The Parachute Attack Upon Palembang

1. *Large-Scale Use of Parachutists*

The Japanese used parachute troops for the first time on a large scale on February 14, when a total of 700 was dropped around Palembang, a large oil-refining center in South Sumatra.

2. *Defeat of the Parachutists*

(a) Landings

The 700 men were dropped from 100 aircraft, several of which were Hudsons with British identifications. Armed with light mortars and sub-machine guns, the parachutists landed in three groups. One hundred men dropped to the earth close to the Standard oil refinery which is located on the Moesi River below and east of Palembang. Three hundred landed close to the Shell oil refineries, immediately west of the Standard oil plants, and another 300 landed near the Palembang airdrome number 1, which is northwest of the city.

(b) Mission

The mission of the Japanese parachutists was to capture the flying field and the oil refineries. They apparently were seeking to prevent the defending Dutch troops from destroying the refineries. The mission failed, for two reasons:

1. The Japanese employed too small a force;

2. Although they used two waves of parachutists, it was not until the following night, February 15-16, that supporting landings from the sea occurred. The lack of attacking strength was probably due to the fact that the Japanese did not know that two days before the attack the Dutch had doubled the garrison in Palembang, bringing it up to two battalions. Between the time the parachutists landed and the arrival of Japanese sea forces, the Dutch destroyed the oil refineries and killed or captured practically all the parachutists. The only useful purpose that the parachute raids may have served was the extent of interference and the delay caused in demolition work at the airdrome. The demolition work had to be halted while the Dutch forces engaged the parachutists, and by the time the parachutists had been conquered Japanese seaborne forces captured the city. The Japanese claim that little damage was done to the airfield.

(c) Sea-borne Invasion

The Japanese sent by sea a huge convoy of troops who took over Palembang on the night of February 12. The troops came up the Moesi River, which is very wide and deep, in small craft and motorboats. The first group passed beyond the city before landing. This group was followed shortly afterwards by reinforcements which overwhelmed and forced the smaller defending forces to retire.

Section III
Japanese Matériel

1. *A New Type of Japanese Light Machine Gun*

(a) A Captured Weapon

During recent operations in Malaya the British captured a new type of Japanese light machine gun. Since this gun may be fired from a position which is generally used in firing a Thompson submachine gun, it is believed that this gun may have been erroneously referred to as a tommy gun in previous reports on Japanese tactics.

(b) Characteristics of the Gun

On the basis of photographs, some of the characteristics of this new gun appear to be:

(1) It is gas-operated and magazine-fed, and is patterned after the British Bren gun and the French Hotchkiss light machine gun. The magazine has a capacity of approximately thirty rounds. The cartridge has a rim.

(2) The gun is provided with a bipod which is attached about six inches from the muzzle of the gas-cylinder bracket. The bipod height is approximately sixteen inches. The barrel weight is approximately five and one-half pounds. A carrying handle is provided in front of the magazine. The barrel most likely detaches from the receiver by means of rotating the carrying handle.

(3) The weight of the gun is between twenty-two and twenty-five pounds. The sights are offset so as to clear the magazine and carrying handle. A sling attached to the butt stock and the gas-cylinder bracket is provided for carrying the weight from the shoulder. The barrel is provided with an angular groove. The barrel length apparently is between twenty-four and twenty-six inches.

(4) The special stock, of the drop type, is attached to the trigger guard and the stock has a crescent shape on the rear for placing it partially over the shoulder.

(5) A bayonet lug is provided at the forward end of the gas-cylinder regulator for mounting the rifle bayonet.

(6) The head of the bipod is provided with two positions: one, a folding position, the other, a position with the bipod perpendicular to the barrel of the gun.

(7) The bipod does not have an adjustment for height.

(8) The charging arrangement is on the left-hand side of the gun.

(9) Available photographs are not sufficient in detail to identify definitely the trigger mechanism. However, the buttons indicate that the gun can be fired either automatically or semiautomatically.

(10) The photographs do not show that any provision has been made for mounting this gun on a tripod or for antiaircraft firing.

(11) The type of bayonet used is very similar to the U. S. M1917.

(12) The overall length is probably between 41 and 43 inches, including butt stock.

2. *Fighter Planes*

(a) New Type

Over the Dutch East Indies the Japanese are using a new fighter plane which is believed to be the New Nakajima 01. Its use has not been reported previously. The plane is said to have a top speed of 395 miles per hour. It is a low wing monoplane of the pursuit type, and it is armed with four machine guns and two 20mm cannon. It has a 14-cylinder aircooled engine. The plane is of light construction with a retractable tail-wheel and landing gear. It is single-seated and can carry a reserve gasoline tank, which may be dropped. The fighter has a high climbing speed.

(b) Type 97.

The Japanese Army type 97 fighter plane has a gasoline capacity of 136 gallons, it was disclosed recently in examination of one which had been shot down in the Rangoon area. The plane, manufactured in November, 1941, carries seventy gallons in a fixed tank and sixty-six gallons in a tank which can be dropped from the plane when desirable.

(c) Detachable Gasoline Tank.

The extra, detachable gasoline tank being used by the Japanese on their pursuit planes is calculated roughly to increase the range of the planes by 560 miles.

(d) Fighter patrols.

Fighter patrols of the Japanese were keep continuously in the air to protect their columns of troops in Malaya.

3. *Bombs*

(a) Varieties

Japanese bombs are of two varieties, army and naval. Army bombs have been manufactured mostly in the Osaka arsenals. Naval bombs have been manufactured mostly in the Kure and Yokosuka arsenals.

(b) Aerial Bombs in the Philippines

White phosphorus was being employed in the Philippines by the Japanese in their aerial bombs as a filler for its incendiary effect.

4. *Observation Balloons*

Shortly before crossing the Johore Straits onto Singapore Island, the Japanese used observation balloons for the first time in the Malayan Campaign. Three were seen in Johore on February 7.

5. *Artillery*

When the Japanese reached the Straits of Johore,

they increased considerably their use of artillery fire and also brought into action guns of a heavier caliber.

6. *Grenades*

(a) Hand Grenade

It is believed that the Japanese are using two types of hand grenades, the "91 Type" and the "97 Type," both of which have cylindrical shape. The '91 Type" has a time fuse of six to seven seconds, and the "97 Type" is fired by the percussion created when the grenade strikes its object.

To ignite the time-fuse of the "91 Type" a safety pin is removed and a sharp tap is given on some hard surface, such as the heal of a boot. This causes a firing pin inside the grenade to hit a percussion cap which ignites the fuse. The "91 Type" is reported to be slightly heavier, but further details are not known.

(b) Stick Grenade

This grenade is made up of a cylindrical cast-iron pot which is two inches long, two inches outside diameter, and one and one-half inches inside diameter. It is open at one end and closed at the other and is of uniform thickness. Inserted in this shell is a charge consisting of two ounces of lyddite in the form of a plug with a hole through the center to receive a detonator. It is covered by a thick paper cylinder to prevent the charge from coming in contact with either the detonator or the cast-iron shell. This charge is two inches long, and the detonator hole five-sixteenths of an inch in diameter. A wooden handle is placed in the top of the iron cylinder to a depth of three-quarters of an inch, and it is secured by three small screws which pass through the iron shell. This handle is 5 inches long and is drilled lengthwise through the cylinder with a three-eighths-inch hole.

The detonator is two and three-quarters of an inch long, five-sixteenths of an inch outside diameter, and is made of brass. It is attached to one end of a four-second fuze and is inserted at the other end of the fuze into an igniter, which is attached by three lugs to the wooden handle. The igniter consists of a thin paper cylinder with a diameter of five-sixteenths of an inch, and the ring is one and three-quarters inches. The grenade is believed to weigh about one pound three and one-half ounces.

7. *Grenade Dischargers*

In Malaya the Japanese used two types of grenade dischargers. One of these types has not been described previously. Known as the "10-Year Type," Model 1921, it has the following characteristics:

Caliber	50mm (1.97-in.)
Length (overall)	1 foot 8 inches.
Barrel	Smooth bore.
Length of barrel	10 inches.
Weight unloaded	5½ pounds.
Range	65-250 yards.
Transport	Carried by the man.

The grenade discharger is muzzle-loaded and is fired by a striker operated by a lever on the outside of the discharger body. The discharger is fired from the ground, where it rests on a small base plate. No bipod attachments were used.

The discharger fires hand grenades which weigh a little less than one pound. Before the grenades are fired in the discharger, a special attachment is screwed into the grenade base. The attachment consists of a percussion cap and propellant (believed to be ballistite). The safety pin in the grenade is removed before insertion into the barrel of the discharger; and the shock of the discharge has the same effect as tapping the grenade when thrown by hand.

8. *Revolvers*

The Japanese used two types of service revolvers in the Malayan Campaign. One, known as the "14 Type," is of 8mm (.312 in.) caliber.

We have a late start, but will be in there with a fighting finish and a victorious peace.—LIEUTENANT GENERAL LESLIE J. MCNAIR.

Motor Sense

By Lieutenant Colonel Russel K. Havighorst, Coast Artillery Corps

Poor motor maintenance may contribute to the loss of a battle or of a campaign in New Guinea or Libya, and it is a serious failing even in Pennsylvania or Texas. The horny hand of Old Man Depreciation can't be warded off forever.

Our Preventive Maintenance Schedules and our inspections and adjustments are very good defenses against the old fellow—as far as they go. Most of these measures assume far too much in the way of facilities and equipment to carry out their elaborate programs. It is in the field that the ingenious maintenance officer or noncom who can use a saw for hammer and a hammer for a saw comes into his own.

Here are a few additions and improvisations that you will not find in the Field Manuals, but whose value has been proved by several million vehicle miles and comparative records on the life of those under test.

Engines

Air cleaners. Until some of the designers realize just what an Army air cleaner must do and provide one able to handle its job over dusty roads, the engine will be fully protected only by thorough inspection and maintenance.

First, wipe the carburetor intake clean, and apply a light coat of chassis lubricant to the inside. This is to provide an indicator for the condition of the cleaner, which a clean rag or piece of paper will confirm at a glance. A daily routine for effective air cleaner maintenance should then be followed:

1. *a.* Check all air connections once.
   b. Check the oil level and condition twice.
   c. Change the oil once, if carburetor intake shows a dust coat, or if oil is noticeably gritty.
   d. Wipe the air cleaner twice.

2. Remove the breather cap, wipe it and the inner surface of the oil filter pipe once daily, just before oil is put into the engine. By all means get an air cleaner type breather cap, if at all possible.

3. Oil the carburetor throttle shaft and all linkage joints, *not set in* rubber, once daily. Did you ever try to adjust a carburetor with a sloppy throttle shaft? But you have seen many hours wasted trying it. A few drops of oil will extend the life of this shaft and carburetor body 50%, and even more important, save critical gallons of gasoline. Some carburetor shafts are packed and all should be. Until they are, use the oil can. The throttle shaft takes far more punishment than is generally realized.

4. Check the oil filter connections at both ends twice daily. Inspect them for leaks and try them by hand. Don't let them touch or be near exhaust manifolds or pipes. Tape them so that they don't vibrate unreasonably.

Set a reasonable schedule for changing cartridges and stick to it. A reasonable schedule for a well-watered territory may be kept at the manufacturers recommended interval. In desert terrain this should be shortened to one-half of this figure, or even less if discolored oil indicates the necessity.

It is foolish not to anticipate a condition in which there are no spare cartridges. In this case, remove the old cartridge after the engine is thoroughly warmed, and let it drain. Then wash it in kerosene, sparingly, and let it drain again. A large part of the cleaning value of the cartridge is gone, but much of its ability to filter, and to cool, blistering hot oil still remains.

While the cartridge is out of the case drain all slime, grit and sludge from the case and wipe it clean. Draining and cleaning the case at 1,000-mile intervals will prolong the life of your filter.

Chassis Lubrication

The life of all grease lubricated bearings can be doubled by one simple precaution. Under no circumstances should a pressure gun be applied to a fitting before it is wiped clean. All lubricating charts tell you to continue to force clean grease into the bearing until the dirty lubricant is forced out. But if you force a small amount of fine grit in with the clean, much of the benefit is lost. Oh, yes, the opening is small and is protected by a ball check. But grit still gets in. This statement is based on an extensive series of service tests.

No matter how well you maintain your filter, drop the oil pan at the end of each ten-thousand-mile period, and clean the pump screen, pump, and oil pan. Organic reactions do a lot down in that oil pan in spite of filters.

Brakes

You will have no brake equalizers in Borneo. Or for that matter very few in the Mojave or Fort Bliss AA centers. Testing your brakes by a quick stop in the gravel is hard on tires and only fairly accurate at best.

The convoy commander with trained operators has at his disposal a brake effectiveness indicator of extreme accuracy. After the convoy has been running for an hour or more, stop it on prearranged signal, in order that this check can be made.

Every driver should leave his cab as soon as his truck has come to a stop and quickly and successively check

the temperature of each brake drum by his sense of touch. A red-hot one is dragging and a cold one loafing on the job. Uniform temperature will be much less frequent than you might believe—at first. After a few weeks of this road check S.O.P. the practical results will be amazing. Here again is procedure tested and proved in the tough school of experience.

Springs

Spring and shock absorber field maintenance are well covered in the manuals. However, what they do not say is that inside of ten thousand miles 90% of your shock absorbers will be inoperative. Of course, you will give them the best maintenance possible, but after they will no longer hold fluid, supervision and driver training must take their place.

For spring lubricant use powdered graphite with the least possible grease to hold it in place and brush the edges of all springs with a wire or bristle brush when the truck is washed or cleaned.

Conscientious adherence to these apparently minor points will give you mileage far greater than by simply following the ordinary preventive maintenance schedules.

Long dependable service for your motor transportation does not depend on a few major policies, but upon faithful adherence to every one of several thousand. And you can't neglect any.

JUNGLE WARFARE

PART TWO (Condensed from Field Manual 31-20)

Poisonous Jungle Plants and Trees

There are two types of jungle trees, vines, and shrubs which may irritate your skin. First are those which have thorns, spines, or hairs that scratch and even penetrate the skin if you come against them or handle them. Second are those which secrete an irritating sap, gum, or tar that irritates and blisters the skin. There are many poisonous jungle plants and trees in the Western Hemisphere, the more common of which are those described just below.

The *Spanish nettle* is a small shrub classed as a "mechanical irritant." The edges of its leaves are scalloped and its stalk is soft and unarmed. The stems supporting the leaves, as well as its clusters of white flowers, are covered with stinging hairs which readily penetrate clothing. The pain is intense—stinging and burning last for days. The Spanish nettle grows in savannas in bright sunshine.

The *cow itch* is a long luxuriant, climbing vine with leaves, flowers, and seeds that resemble the garden bean. The mature seed pod is covered with hairs the color of dark brown velvet. Cow itch grows in savannas and open areas in jungles among the stalks of guinea and other grasses. If you brush against the hairs from the bean pod when they are dry, they will penetrate the skin and itch severely.

The *Panama* is a very large tree with buttressed roots and a smooth trunk with an enormous crown, growing forty to fifty feet in height. Its leaves are a foot broad and shaped like a hand with outspread fingers. The pink flowers are borne in clusters. The fruit holds seeds that resemble chestnuts and are covered with hairs that penetrate the skin causing severe pain.

The *acacia* is a shrub which grows in swamps with a height of from five to ten feet. The bark is dark brown; its thorns grow in pairs and look like the horns of an ox. The acacia has featherlike leaves and yellow flowers with fruit in a pod. An ant—the "fire ant"—burrows in its spines and attacks if the plant is touched. These ants inject a strong acid which is very irritating.

The *black palm* is a slender tree growing thirty or more feet high. The trunk and leaves are covered with long, flat, pointed spines. Its leaves are arched, featherlike, and spiny. Its fruit is in a large cluster, red, one-seeded, and egg-shaped and its flowers are green. If the spines are touched they easily penetrate the skin and break off, causing irritating wounds that fester. The spine must then be removed surgically.

The *beach apple* grows along the seacoast. It has leaves that resemble those of the pear tree and are smooth and green with sawtoothed notches. Its bark is smooth; the flowers are green and in spikes. When the fruit is ripe it looks like a crab apple. The sap or juice of this tree will blister your skin and the sores heal with difficulty. Salt water is a specific treatment and since this tree grows near the seashore, immediate immersion in sea water will counteract the effects of the sap. Death may result if the fruit is eaten.

The *mango* has leathery, green, lance-shaped leaves, a rough, gray-brown bark and a large trunk. The spread of its branches is often over one hundred feet. The flowers are pinkish white and grow in clusters. The fruit is heart-shaped and pink and yellow in color, and is widely eaten. The sap of the tree and the juice of the fruit are irritating to skin of some people. Those who are allergic to the mango develop a rash merely by walking or resting under the tree.

In the Philippines are found a number of shrubs and trees which fall in the category of "mechanical irritants." Here are some of them.

The *kaong* is a palm commonly found in forests and open regions and along valleys and creeks, up to altitudes of 1,500 to 2,000 feet above sea level. The plant reaches a height of thirty to fifty feet and has a trunk diameter of ten to fifteen inches. It has long feather-like leaves, each fifteen to twenty-five feet long, and the base of each leaf is covered with black fibers. Each long leaf is made up of ninety to one hundred pairs of linear leaves, three to five feet long. These smaller leaves are lobed at the tip and notched or ear-shaped at the base. The fruit of the kaong consists of clusters of green nuts which turn yellow when they mature. This fruit causes irritation to those who do not know how to handle it. The covering of the fruit contains numerous microscopic needle-like hairs and when handled with the bare hands, especially when the fruit is decaying, the hairs cause irritation of the skin.

The *dumayaka* palm looks somewhat like the kaong, but is smaller, seldom growing higher than twelve to fourteen feet. Small, needle-like hairs on the fruit cause a skin irritation. The dumayaka is found in southern and southeastern Luzon, in Mindoro, in Davao, Mindanao, and in thickets and secondary forests at low altitudes and is common along the seashore.

The *fishtail palm* is a large palm reaching a height of fifty feet or more. It can be easily recognized by the tip of the small leaves, which look like fishtails. The fruit is covered with needle-like hairs or crystals similar to those of the kaong, and is dull yellow when ripe.

The *lipang-kalabao* plant is a stocky tree (sometimes a coarse shrub) which commonly reaches a height of fifteen to twenty-five feet. It has a whitish trunk, slender

branches, and thick leaves which are crowded near the ends of the twigs. The leaves are short, pointed at the tips, rounded at the base, and darker green above than below. Along the edges and surfaces of the leaves and on the stems are numerous stinging hairs. If you touch the leaves only slightly you will get a skin poison.

The *lipang morado* is an erect shrub or small tree reaching a height of ten to fifteen feet. Its leaves are leather-like and long-stemmed—from a rounded base they narrow gradually to a sharp point and are scattered along the few branches of the tree. The flowers are bluish. Numerous stinging hairs are found along the leaves and on the stems, and contact with these hairs will produce a severe irritation of the skin.

The *lipa* tree grows wild and in abundance among the heavy undergrowth. It ranges in height from six to fifteen feet. It is very similar to the papaya tree in appearance although the leaves are smaller. Both trunk and leaves are covered with fine, white, velvety hairs which are extremely irritating to the skin.

The *nipai* is a twining vine very common in thickets and second-growth forests and along creek banks at low altitudes. It can be easily identified by its trifoliate leaves and dark purple flowers. It produces wrinkled, hanging pods which are covered with sharp-pointed bristle-like hairs, some of which have barb-like protuberances along their sides. Irritation from the nipai is due more to the piercing of the skin by the stiff hairs and barbs than to the injection of irritant juices.

The *dilamo* is a vine which climbs on trees, shrubs, or bushes. The leaves grow far apart and are three to five inches long, one to two and a half inches wide. Both upper and lower surfaces are shiny, and the upper is olive green in color, the lower somewhat paler. The base of the leaf is rounded and deeply notched where it joins the stem. The tip has a rather broad point, but is sometimes rounded, with a sharp point protruding. The stinging hairs on the leaves and tender stems cause skin irritation on contact.

Then there are trees and shrubs in the Philippines that secrete an irritating or blistering sap, oil, or gum. Here are some of them.

The *pungapung* plant, which grows to a height of about five feet, is easily recognized by its wrinkled, greenish, rounded stalk. The pungapung is a perennial herb which grows from a bulb. During November and December the leaves turn yellow and during the following dry season the stalk dies. In April or May the plant is in bloom with large purple flowers which give off a very offensive odor that resembles rotting meat. Its juice causes instant skin irritation.

The *ligas* is a shrub or small tree which grows to a height of fifteen to twenty-five feet. It is easily identified by the dry, black sap along the trunk. The leaves—about one to three inches long and whitish on the under side—are somewhat crowded at the ends of the twigs. It has a small (about one-half inch long) fleshy, pear-shaped, purplish fruit which is edible. The sap of the tree is a violent contact poison to many persons and may have no effect on others. On contact with the skin it causes painful swellings and minute ulcers resembling the effect of poison ivy. The plant is common in the Philippines, being found in semi-open places.

The *buta-buta* is a shrub or tree which may grow as high as twenty-five feet. The leaves are oval and two and one-half to five inches long. The bark produces latex, a milky, white fluid which is a skin irritant. It causes severe pain if it gets into your eyes—it can bring on blindness. If it is swallowed, the latex may cause vomiting. If the stomach retains it, this may cause inflammation of the intestines, followed by bloody diarrhea. Approximately one tablespoonful swallowed, or one-fourth cc injected in the veins will ordinarily prove fatal to a person weighing 100 to 110 pounds. On the skin the fresh juice will usually produce blisters.

In Panay, the *kamanday* tree is known as *hilegoynon* and it is common along the Panay and Tolur rivers and in the mountains. The sap of this tree is so poisonous that its entry into the body of man or animal is fatal.

The *dalit* is a medium-sized tree which reaches a height of about fifty feet. Its leaves, six to eight inches long and two to three inches wide, are pointed at the tip and obliquely notched at the base; the lobes are of unequal size and shape, and shiny on the upper surface.

This tree is generally found in isolated areas in northern Luzon and in the provinces of Cagayan and Apayao. It is also found on the islands of Mindoro and Guimaras. The sap is a virulent poison.

The *abuab* is a fairly large tree which reaches a height of sixty feet or more, with a cylindrical trunk, slightly buttressed at the base. The bark is either white or brown and rough with short vertical cracks. The crown is widespreading with horizontal branches, with leaves that are smooth, pale underneath, and about eight inches long by about three inches wide. The flowers are greenish white. The fruit is leathery, thick, three-winged, and approximately five inches long by one inch wide. The fruit, which is borne at intervals of two to three years, matures during July and August. The bark of this tree yields the poison known as *saponin*, poisonous even in small quantities.

Poisonous Jungle Foods

The *castor bean* is a shrub which in rich soil may grow to a height of ten to twenty feet. The leaves are smooth and resemble a hand with fingers outstretched. The flowers are in tufts and are covered with brown spines. The fruit is the castor bean which may cause diarrhea when eaten. Though treatment is rarely necessary, it is that usually given for diarrhea.

The *sandbox* has a trunk with spines resembling those of a grater. Its leaves are heart-shaped and hang on a long leaf stalk. The fruit is shaped like a small muskmelon and contains in its cells a dozen or more seeds which explode when the fruit is ripe. The juice and seeds are violent purgatives.

The *beach apple* described before has a fruit that, when ripe, is red and looks like a crab apple. When eaten the beach apple causes swelling of mouth, throat, and larynx—it may cause death. In treating wash the mouth with salt water (a tablespoon of salt to a pint of water). Wash out the stomach with salt water. A surgical opening of the windpipe may be required if the swelling of the larynx is marked.

The *mango* brings on swelling of mouth and face to those people sensitive to juice of this fruit. Treat by subcutaneous injection of adrenalin 1-1000. Epinephrine may be given by mouth.

The *cashew* grows along roads and in dry bare places. Its leaves are green, egg-shaped, and eight inches long by four inches wide; bark is grayish brown; flowers are in groups and are purple; fruit is bright red when ripe. Suspended below the fruit is a kidney-shaped nut which is edible when roasted. As this nut contains an irritating oil which will blister skin, care must be taken in roasting not to permit the hot gases to come in contact with the skin. If blistered, treat with a hot solution of magnesium sulphate or calamine lotion.

The *akee* is a tree with smooth, oblong leaves six inches long arranged on each side by stems. The blossoms are greenish white and in cluster; the bark is smooth and greenish brown. The pale red fruit cracks open when ripe, revealing black seeds. The fruit is poisonous if eaten raw, causing abdominal cramps and vomiting. It may be eaten if prepared by an experienced cook. Leave unopened fruit alone. In treating a person who has been poisoned by the raw fruit, give him something to make him vomit and wash out his stomach with alcohol-and-water, or whiskey-and-water. Give him alcohol or whiskey as soon as you are sure he has eaten green or unopened akee fruit.

The *huevo de tigre* is a small shrub with smooth bark and a trunk about five or six feet tall. Its leaves are glossy green and the flowers are yellow. The fruit is blood red and about the size of a cherry. The fruit is poisonous, containing thevetine, which is a narcotic and heart depressant. When taken internally the seeds cause violent vomiting, shortening of the breath, and may cause heart failure. The Indians use the juice of the fruit to relieve toothache. Give the patient castor oil to eliminate seeds from his gastro-intestinal tract. Use artificial respiration if breathing is difficult. Heart stimulants should be given if there are symptoms of cardiac failure.

The *strychnine cajura* is a vine resembling the sweet-potato vine with smooth leaves that are egg-shaped and lance-shaped. The flowers are white. The fruit is like a berry with a smooth skin. The strychnine is found at the root. Give the patient large doses of sodium amytal.

The *curare* is a vine similar to strychnine cajura but is covered with short hairs. The poisonous element is contained in the bark.

The *bitter cassava* is a semi-shrubby perennial with large, fleshy, cylindrical, tapering roots as much as three feet long and six to twelve inches in diameter. The plant grows five to ten feet high with long-stalked leaves with the blade divided nearly to the base into from three to seven long, narrow segments. The sap of the root contains hydrocyanic acid and is highly poisonous until the root is cleaned, dried, and shredded. If the patient stops breathing, or breathing becomes shallow, start artificial respiration. Administer caffeine and heart stimulants. The patient should be kept quiet.

Poisonous Weapons Used In Jungle

Natives in many parts of the world apply poison to the barbs of arrows and spears. And you can depend on our Axis enemies to encourage those natives they have hired to fight for them to use poisoned arrows and spears if they cannot for the time furnish them with modern weapons. The poisons they use vary, but fall into three general groups:

(1) Plant poisons.

(2) Snake venom and poisons from various insects, especially beetles.

(3) Bacteria such as tetanus bacilli and the bacilli of gas gangrene.

South American arrow poisons all come from strychnos, the active principle of which is curare.

The African aborigines use poisons whose Latin names are acocanthera (ovabaio), strophanthus, and adenium. The active principle of acocanthera is the glucoside, ovabain; that of strophanthus is strophanthidin and ovabain. All of these are powerful heart depressants and can cause death within a few moments.

In Malaya, Sumatra, and Borneo the sap of the upas tree—antiaris toxicaria—is used. The active principle, antiarin, is a heart depressant. Aconitum and strychnos are also used: these drugs are both heart and lung depressants.

The venom of poisonous snakes and insects is either used separately or added to poisonous plant poisons.

The bacterias used as arrow poisons are obtained by dipping the arrows into decaying organic matter.

Poison arrow wounds should be treated in the same fashion as snake bites. A tourniquet should be applied immediately; the arrow head withdrawn, or an incision made so as to extract it. The wound should be thoroughly flushed with hypertonic salt solution and washed out with an oxidizing solution. Since the type of poison used is not always known, the treatment will depend on the symptoms. Antitetanic serum and antigas gangrene serum should be given in prophylactic doses as a precautionary measure. Don't give liquor.

Poisonous Jungle Snakes

Snake poisoning is the sequence of symptoms noted after the venom of certain species of snakes is injected into the body. The symptoms vary from trivial effects to death, and can be classified into two main groups:

Colubride snakes. Death comes as a result of the poison affecting the nervous system and the center which

controls breathing. This poison kills by paralyzing these two vital systems. The heart itself is stimulated and is not directly affected until the end, when the breathing becomes too inadequate to sustain life.

Viperine snakes. Local symptoms are marked at the site of the bite—pain, oozing of blood and serum, and thrombosis (clotting of blood in veins), followed by gangrene. Death comes in one of the following ways:

(1) Immediately, from thrombosis if the poison is injected into a vein or a large dose is received.

(2) In a few hours, owing to heart failure from paralysis of the brain centers.

(3) In a few days, from secondary bleeding due to the action of the poison in preventing blood clotting.

(4) From the secondary infection of the gangrenous area at the site of the bite.

The *colubride* group includes snakes found both in the Old and the New World. Each species is described below and also where it will most likely be found in the Western Hemisphere and the Philippines.

The *king cobra* is the largest poisonous snake in the world, ten to eighteen feet long, but rather slender, with the typical expanding neck of the group. Its color is olive or yellowish-brown with ring-like cross bands of black. The king cobra is common on Lubang Island and probably is found in other Philippine islands.

The *Indian cobra* varies greatly in length, thickness and color but is usually colored dark brown or black with no hood markings. This is the commonest poisonous snake in the Philippines.

The *coral snakes* are dangerous tropical varieties. They are usually brightly banded in red, yellow, and black. Some reach a length of four feet (but usually are not over three feet) and while they rarely strike, they bite when stepped on. The coral snake's fangs are short, and unless the hold is firm the poison injected may not be fatal except in the larger species. At least eight species are found in Mexico and Central America, and a few more in Brazil and northern Argentina. There is so much variation in the color, width, and placement of the bright bands that no definite rule in identifying these snakes can be followed. Although there are a number of harmless snakes that look very much like coral snakes, one had best be wary of all red, yellow, and black snakes.

The *sea snakes* are dangerously poisonous. They are found only in water, usually ocean salt water. One species lives in fresh-water streams in the Philippines. They are usually brightly colored; some are brilliantly ringed. The head is smaller than the diameter of the body; the tail is flattened to form a paddle which assists in swimming. All but one species are found in the China Sea, Indian, and Malayan areas. The yellow-bellied sea snake (*pelamydrus platurus*) has an eel-like form, is colored brown on top and yellow underneath, and is seldom over a yard long. It is often seen in the Bay of Panama, off Costa Rica, and at the Pacific end of the Panama Canal.

The *tropical moccasin* resembles the moccasins of the United States but is a far more dangerous reptile. It is generally smaller than United States specimens, but its poison is worse. Its disposition is savage and it strikes with marked agility. It lives in the area extending from southern Mexico to British Honduras.

The *viperine* family contains most of the poisonous snakes of North, South, and Central America, and may be identified by the deep pit between the nostril and the eye on each side of the head. There are two main divisions of this group, those with rattles at the tip of the tail, and those without rattles.

The *tropical rattlesnake* is called *cascabel* in Mexico and *cascavel* in Brazil. It is the most poisonous of rattlesnakes and is also the boldest. The venom is different from that of other vipers and has a toxic action on the nerves. This snake is found from southern Mexico to Argentina. The rattle is not always used in an attack and some mountain varieties rattle and strike almost at the same time. Snakes of this group are often six or seven feet long and have thick, heavy bodies.

The viperine group without rattles is a large one and includes the large number of species in the viper and fer-de-lance group and the bushmaster.

The *palm viper* is also called the *horned-palm viper* and *eyelash viper* because of the scales on the head which are directed upward to form horns. Palm vipers are found in two colors. One is a greenish reptile, speckled with black and red; the other, equally common, is yellow dotted with black. The snakes are small but their large heads and long fangs make them dangerous. These snakes frequent trees and bushes, crawling up to six or seven feet from the ground. They range from Guatemala to northern Brazil.

There are other similar bothrops: the Mexican palm viper, the green palm viper, and the yellow-spotted palm viper (both in Guatemala), the yellow-lined palm viper in Costa Rica, and the black-spotted palm viper in Panama and Costa Rica. There is one species limited to South America which is found in Brazil, Bolivia, Peru, and Ecuador.

The *hog-nosed vipers* are known locally as *pataca* and *lamaga*. The characteristic distinguishing feature of these snakes is the turned-up, pig-like snout. The pataca is found on the Atlantic slopes of Central and South America. The head is dark brown, the snout has three protuberances. There is a black line running to the rear from behind each eye. The general body color is brown with small, black, quadrangular markings alternating with black spots. This snake grows to about two feet in length. The lamaga is a native of the Pacific slopes of Central and South America and it is common in the rain forests and forests of the coasts. The head is dark brown in color and lance-shaped; the snout is turned up slightly. The general body color is brown above, the flanks have black spots or blotches.

The *jumping viper*, also called *manode piedra* or *timba*, is a short, heavy, snake with coloring similar to

that of the bushmaster to be described later. It is usually found in dry, sandy or rocky areas. Its short muscular body enables the snake to strike hard and apparently jumps. It grows to a length of three feet. The body is thick, reddish-tan or red-brown in color, with black "saddles." The tail is short and pointed at the end; there is no horny spine.

The *fer-de-lance* is one of the thirty-six species of lance-head snakes that abound in Central America and northern South America. It is known as *barba amarilla* meaning yellow-beard, because of its yellowish chin and throat. The body is slender, and about three or four feet in length, but may grow up to eight feet. Its color varies from grey to brown or reddish, with dark, light-edged cross bands or triangles. This is a very poisonous snake. Even the young only twelve inches long have enough venom to kill a man.

The *bushmaster* stands in a class by itself and is the world's largest viper. The bushmaster is more nearly like the rattlesnakes than the lance-head snakes. In Central America it is known as *la cascabela muda* (the mute rattler), in Brazil as *surucucu*. Nowhere over its range is it abundant but it is frequently found in Costa Rica and Panama. This snake is relatively slender, usually about eight or nine feet long, but sometimes grows to a length of twelve feet. The body is pale brown, often pinkish, with a series of large and bold dark brown or black blotches extending along the body. The bushmaster is a bold and particularly dangerous snake and is inclined to attack without much warning.

The two *green tree vipers* are called *manda-dalag* and *mudfish* and are vipers of the Philippines. The green tree viper is a leaf-green snake with pale yellow stripes on each side. The tip of the tail is red, and is used for holding to tree branches. This species lives strictly in trees. The mudfish frequents water courses and lives largely on fish. Neither of these is as poisonous as cobras.

Although the *boas* are not poisonous snakes they are discussed because they occur in tropical areas, and some are vicious and have power to crush their victims.

The term "boa constrictor" is the common name given to the constrictor, a docile reptile that may easily be trained as a pet and is the species used by snake charmers. The largest is the anaconda or water boa which may attain a length of twenty-five feet. It is vicious and dangerous and will not hesitate to bite if disturbed.

There are no dangerous reptiles in Cuba, Jamaica, Haiti, Puerto Rico, or Hawaii.

Venomous Jungle Insects

Spiders, scorpions, and centipedes secrete a venom which they use to kill insects and other small animal life and to defend themselves against their enemies. They will attack man, but in only a few species is the venom poisonous enough to really hurt an adult.

Certain spiders secrete a poison (toxin) which may cause severe local and systematic reactions, including hemolysis of the red blood cells, numbness of the area bitten, fever, and a feeling of weakness, together with swelling and inflammation.

The *black-widow spider* lives in tropical and subtropical America. It has a velvety, black body from one-fourth to three-eighths inch long and a globular abdomen with one or more red or orange spots on the upper surface. The female has an hourglass-shaped red or orange mark on the under surface of the abdomen.

The *latrodectus curacaviensis* and *latrodectus geometricus* spiders are found in South America and probably have short local names. They have dark bodies with white, gray, or yellow spots on the upper surface of the abdomen. These spiders are found under stones, in loose masonry, about barns, outhouses, and latrines.

The *glypocranium gastera* is a pale-gray spider which lives in vines, has a globular abdomen with two prominent knobs, and is found in Peru.

The so-called *tarantulas* are members of the mygale family. They are large, hairy spiders, often having a spread of six to eight inches. In spite of their ferocious appearance and their bad reputation, they do not secrete a potent poison—the bite causes local pain only.

There is no antiserum for spider bites. Treatment varies according to the symptoms.

Scorpions are also common in the tropics, living under leaves, logs, and stones, during the dry season, but invading human living quarters in the rainy season where they are frequently found hiding in clothing, boots, shoes, and articles of equipment. The stinging apparatus is attached to the tail, and the poison glands open at the end of this spine. The sting of the scorpion is painful, but only certain species secrete toxin of sufficient strength to produce general symptoms. The sting of the Mexican species, locally called "durango," has been reported to have been fatal to young children. Vomiting, convulsions, fever, profuse sweating, and muscular cramps may be produced in adults.

The venom of the scorpion may be neutralized by ammonia. Bathe the bitten part with ammonia water or a solution of magnesium sulphate.

Only one kind of centipede is poisonous, the *scolopendra*. These are the large, dark brown, many-segmented centipedes which may reach six inches in length. The poison apparatus is located at the base of the first pair of legs. Centipedes live under fallen logs, stones, and leaves, but frequently invade quarters or tents. The bite of the tropical species, *scolopendra morsitans*, may cause local and general symptoms. The hairy milliped (thousand-legged bug) is nonpoisonous.

For scorpion stings, bathe the affected part in strong ammonia water.

Ants are so well known that a description of these insects is unnecessary. There are a few that bite, a few that sting, and a few that both bite and sting. The biting ants are carniverous (flesh eating), and the larger varieties have been known to attack wounded men or those weakened by disease. They rapidly overwhelm the victim by the great numbers which attack simultan-

eously. The stinging ants inflict painful injuries by the injection of formic acid. The sting of some species is so painful that natives roll in agony on the ground.

If you are bitten by ants treat the wound with iodine. To lessen the pain apply strong ammonia water.

The chigger inhabits Central America, Northern South America, and the West Indies. The males and females live in sandy soil and feed on the blood of animals and men. The pregnant female usually burrows into the skin about the toes but may attack the hands, soles of the feet, or other portions of the body. As the eggs develop, the body of the insect swells, and a swelling about the size of a pea develops in the infested part. Intense itching is caused, and scratching may bring infection and ulceration. The ulcers heal with difficulty.

To treat, remove the entire insect by using a sharp needle. Sterilize the cavity by swabbing out with phenol. Neutralize the phenol with alcohol. Do not go about in bare feet or lie about on sandy soil.

Land leeches are found in the jungles of South America. They are about an inch long, have slender bodies, and live in rain forests and the rank jungle vegetation. They attach themselves readily to the human body and can penetrate a single thickness of cotton cloth. Their bites are painless but ulceration frequently follows. Apply heat to the body of the leech—the end of a cigarette, for example—and remove it. Apply iodine and a tight bandage to the wound.

The *screw-worm fly* is a common fly in the Western Hemisphere, ranging from Canada to Patagonia. It is most active in the tropics, flying during the heat of the day. It frequently lays its eggs in the nose and mouth of those sleeping in the open air, especially those who have offensive nose or mouth discharges, or ulcerations about the nose and mouth. It will also lay its eggs in open wounds. The eggs hatch in the tissues of the host. The larvae, known as screwworms, burrow into and eat the tissues. They eat muscle, cartilage, and even bone.

To treat, remove the screwworms by washing out the nose, mouth, or wounds with antiseptic solution containing one per cent procain or novocain, which paralyzes the worms and usually permits removal. Surgical measures may be required for removal. Don't sleep in the open. Use a mosquito net or bar.

Warble worms are natives of Central and South America. The larvae infest the tissues of man. The adult fly catches a female mosquito or a biting fly and attaches its eggs in the stomach of the captive. The incubation period of the eggs is three to five days. If, after this period, the mosquito or biting fly bites an animal or man, the heat of the body stimulates the larvae and they emerge from the eggs and enter the bite wound. They burrow into the tissues just beneath the skin and cause great pain by their movements.

To treat, widen the opening through which the larvae gained entrance to tissues, and squeeze them out. Fly and mosquito repellent salves or lotions will reduce the chances of infection.

Infestation of the gastro-intestinal tract with larvae is common in the tropics. The eggs of various species of flies are eaten with food upon which they have been deposited. The larvae hatch out in the intestines. They may cause diarrhea and may frighten you when you see them in the stools. But a dose of castor oil will result in the expulsion of the fly larvae from the intestines.

Avoid contamination of food by screening from flies.

Creeping eruption of the skin is caused by the infective stage of the larvae of the dog and cat hookworm, *anoylostoma braziliense*. This worm infests wild and domesticated members of the cat and dog families, and passes the larval stage in loam or sand. The larvae invade the human skin and move about just beneath the surface, causing severe irritation.

Apply ethylchloride to skin, lightly freezing surface. This kills the larvae. Don't walk about barefoot.

Wild Jungle Animals

The danger of attack by carnivorous mammals in tropical America is limited. There are no dangerous members of the dog family. Wild hogs, crocodiles, caimans, and boa constrictors may attack man, and may cause severe injury or even death.

Wild hogs are fearless and in droves do not hesitate to attack a man. The boars have needle-sharp teeth which can inflict dangerous wounds. If a man is knocked down by the rush of these animals, he may be gored or trampled to death. If unarmed men are attacked by wild hogs, they had better take to the trees.

The crocodile is abundant along the coastal regions of Mexico, Central America, Colombia, Ecuador, and Venezuela. It may grow as long as twelve to fourteen feet and can deliver a powerful blow with its tail, as well as tear the flesh with its powerful tooth-studded jaws. It will usually avoid man, but when aroused is active, vicious, and dangerous.

Caimans are native to Central America and tropical South America. The spectacled caiman, the common "alligator" of Central and South America, grows to eight feet and is active and vicious, although it will avoid man unless attacked. The black caiman is most common along the upper Amazon where specimans twenty feet long have been reported. This kind is vicious and will attack man.

Crocodiles and caimans can easily be avoided and will usually enter or drop beneath the water at the approach of man. They should be left alone and never fooled with. They move fast and do great injury.

The monkeys in tropical America are tree-dwelling and aside from stealing growing crops and sometimes food, or bright colorful articles in a camp or bivouac, are harmless. Simple traps such as a green coconut with a small hole large enough for a monkey to squeeze its hand and arm in, but too small to permit withdrawal of the closed fist, will enable one to catch a culprit and scare away others. Even small monkeys have sharp teeth and do not hesitate to bite.

(To be concluded)

COAST ARTILLERY BOARD NOTES

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

THE COAST ARTILLERY BOARD

COLONEL WILLIAM S. BOWEN, C.A.C., *President*

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MAJOR ANDREW W. CLEMENT
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MAJOR MICHAEL M. IRVINE
CAPTAIN AUSTIN E. FRIBANCE
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Secret and confidential reports constitute approximately ninety per cent of the work performed by the Board. The following items were selected from the few unclassified reports, as being of interest to JOURNAL readers.

Battery directing point. Reports of target practices show that in a few cases directing points for new batteries have been selected which lie between the guns instead of one gun being selected as the directing gun. Plotting boards thus have been constructed with the directing point other than at one of the guns, resulting in the obvious disadvantage of requiring the data to be corrected for each gun of the battery.

In major caliber batteries, the guns normally will be separated by a considerable distance. It is sound practice always to select one of the gun positions as the directing gun of the battery.

Spotting boards. The M3 spotting board was standardized in 1940. Because of mechanical interference caused by the bracket for mounting the platen on the M3 spotting board, the angle of intersection between the spotting arm and the gun-target line is limited. These limitations were recognized at the time of standardization and it was recommended that they be reduced as much as possible without a major redesign of the board. Late in 1940, it was recommended that a special spotting board having no limitations in the relationship between the gun-target line to spotting baseline be developed. A T7 spotting board was designed and the pilot model shipped to the Coast Artillery Board for test. The T7 board is essentially a modified M3 spotting board, the theory and basic arrangement of the two boards being identical. The principal changes are the elongation of the base casting to provide space for mounting handwheels and scales for setting range and azimuth at both ends of the board and a modification in the method of mounting the bracket which supports the spotting platen. Handwheels and scales are required at both ends of the board because in certain positions a deviation disc may cover the handwheels and scales normally used. Modification in mounting the bracket consists of providing circular guide plates on which the bracket supporting the platen is supported. The bracket is moved and clamped in position in much the same manner as the slide rest on a lathe. This permits the bracket to be moved to avoid interference with either spotting station arm. With the above arrangement, there is no limitation in the directing point-target-spotting station angle.

Tests were conducted to determine the time required to change the position of the bracket, on which the platen is mounted, in the event that interference is encountered between either of the spotting arms and the bracket. Changing the position of the bracket requires that the platen be realigned. The above operation is simple and can be completed in slightly under one and one-half minutes. It does not appear feasible to decrease this time appreciably by any modification. It should be noted that under normal operating conditions for a given baseline, such interference is unlikely to be encountered provided care is exercised in selecting the position of the bracket for the set-up to be used. Other operations of the T7 spotting board are the same as those of the M3 spotting board.

The question as to the basis of issue for the spotting board was given considerable study by the Board. The new board is required only by those batteries having spotting stations so located that the directing point-target-spotting station angle is likely to be excessive under normal conditions. This rule should be applied with some reservation, as a target at close range may cause this angle to be excessive for almost any spotting station. The rule should be applied only to distant spotting stations of long range fixed batteries. Six-inch batteries are authorized spotting boards, but the number of spotting stations usually assigned to 6-inch batteries is comparatively small. If the directing point-target-spotting station angle is excessive, the target will

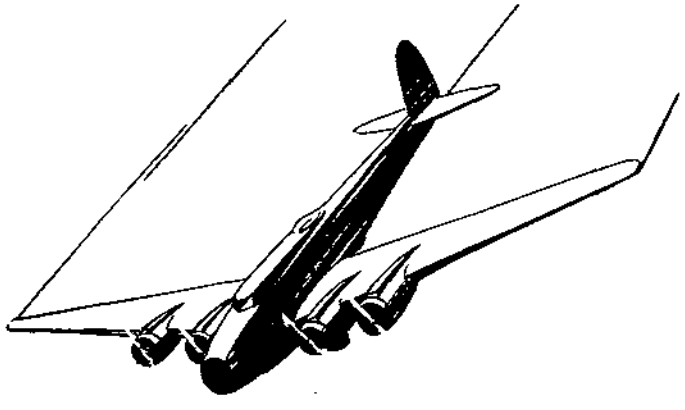
be close to either the directing point or the spotting station, in which case spotting should be accomplished by sensing only. The bracketing method of fire adjustment should be used whenever possible with rapid fire batteries. The Board is of the opinion that the issue of the T7 spotting board to 6-inch batteries is not necessary. The need for the new spotting board, therefore, may be limited to long range fixed batteries above six inches in caliber. It is unlikely that a T7 spotting board will be required unless distant spotting stations are involved. As a result of a considerable amount of study, the Board is of the opinion that the critical distance of directing point to spotting station is 20,000 yards. It was concluded that the new spotting board should be issued only for long range batteries having spotting stations more than 20,000 yards from the directing point.

The Board has recommended that the T7 spotting board be standardized and issued on the basis discussed above.

Winter clothing for personnel of mine batteries. During the month of June, the Board examined and considered the suitability of special items of winter clothing for use by the planting personnel of the mine batteries, the crew of the mine planter and the crews of the boats in the mine flotilla. Among the items which are required are a jacket, trousers, helmet, face mask, arctics and waterproof gloves. A suit of Jungle Cloth consisting of jacket, trousers, helmet and face mask, was secured from the Navy. These items are standard articles of issue to Navy personnel and appear satisfactory for the contemplated Army use. The Board concluded that the items were required, except in the tropics, and military characteristics and a basis of issue were recommended.

Functional firing. The Board has been requested to comment on a number of reports of functional firing. In many cases, batteries are being fired that have been inactive for a number of years. In several instances, it was noted that Ordnance personnel were called on to adjust the setting of throttling valves. This adjustment is a battery responsibility and should not require the services of Ordnance personnel. Battery personnel should adjust the throttling valves if required during firing so as to be able to perform this function in action.

In several instances, an opportunity was lost in not dealing with the range adjustment problem during the functional firing. Batteries have little enough training in fire adjustment problems with service ammunition and could well take full advantage of the opportunities presented when functional firing is authorized.



Coast Artillery Journal

Fifty-first Year of Publication

COLONEL FREDERIC A. PRICE, Editor
MAJOR 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 any 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.

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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.

News and Comment

Letter from Corregidor

On June 16th, we received the letter from the Commanding Officer of the 60th Coast Artillery (AA) at Fort Mills on the island of Corregidor, which appears on page 83.

For six months this letter rested and travelled in unknown places, carrying in it an evidence of efficient leadership that was to be publicly recognized in succeeding days of recorded scoring of shot-down enemy planes.

Eight days before this letter was written, the Japs had swooped down upon the airfields of Luzon. Blasted by bombs and riddled by machine-gun fire, the American air force of the Philippine Islands was practically wiped out before it could take to the air and enter effective combat.

From December 8th (P.I. time) to December 29th, the 60th Coast Artillery stood on its toes waiting the inevitable Japanese air attack. The communique of action on December 29th reported, "at least four Japanese bombers shot down by antiaircraft batteries," in their first raid on the forts of the Harbor Defenses. The 60th needed no trial shots in actual combat. The markers of their aerial range were Jap bombers plummeting in flames.

Even without air support above the seacoast fortifications there was no lack of a lusty offensive spirit. Day and night these batteries had stood on alert, anxious to prove in action what their former target practice scores had indicated. Corregidor had seen this day coming for many past years. Antiaircraft guns and machine guns had long before been placed in permanent war position, sand-bagged in, and ammunition placed in adjacent bomb-proofs. Day and night alert details had stood at these positions for several years before the expected day finally arrived.

In all the stress of final preparation for the inevitable between December 8th and December 29th, the Commanding Officer of the 60th Coast Artillery (AA) took time to canvass his officers and batteries to see that his regiment should belong in the 100% subscription class of the COAST ARTILLERY JOURNAL. For him, his regiment must be as good in all things as he could make it. No thought here of ultimate catastrophe! He was preparing for the future efficiency of his personnel and organizations as if no red-rayed rising sun menaced their future existence.

When one has most to do there is somehow also time to do many things that in days of quiet routine are always filed under *mañana*.

This is a letter to be taken to heart. An example for every organization commander to follow.—F. A. P.

The Twenty-Four Hour Clock System

On July 1 the Army adopted the twenty-four hour clock system which has been used by the Navy and by foreign military establishments. This is now the official time system for the Army in all messages, dispatches, orders, and reports.

Time is now expressed in a group of four digits ranging from 0000 to 2400. The first two digits on the left indicate the hours after midnight, and the remaining two digits indicate the minutes past the hour. Where the hour can be expressed by a single digit, it is preceded by zero, for example, 6:25 a.m. is expressed as 0625.

The date may be expressed in either of two ways. For the current month the day may be indicated by preceding the four digit time group with a two figure date group; for example, 080600 would express 6:00 a.m. on the eighth day of the current month. The other method of expressing the date would appear, for example, as 0625 May 4, or 0625 May 4, 1942, whichever was desirable.

Greenwich Civil time will be used in the heading and text of all messages and orders from the War Department; messages and reports to the War Department; orders, reports, and other communications between headquarters not having a common local time; communications with the Navy; and communications with the armed forces of associated nations.

Time groups expressing Greenwich Civil Time will be designated by the letter Z immediately following the last digit of the group, as 190225Z, indicating 2:25 a.m., on the 19th of the current month, Greenwich Civil Time.

Of Snakes and Things

One of our correspondents with an authoritative knowledge of snakes has advised us of an error in omission in the previous chapter on *Jungle Warfare*.

So many Coast Artillery organizations are now stationed in the tropic and sub-tropic areas throughout the West Indies, Panama, islands of the southwest Pacific, and our own Gulf coast areas that the subject of poisonous snakes is one to which every such organization commander should give serious study and instruct his men accordingly.

Our correspondent writes: "Venomous snakes may not be determined by the lance-shaped head, as that head is carried only by the crotalid family of which the rattlesnake, copperhead, and water moccasin are our most prominent representatives. On the other hand, the cobra family is characterized by having the head almost the same diameter as the body at the neck. In other words, its head is not lanced or arrow shaped. The coral snake, which is the only Western Hemisphere cobra, can probably be seen in most public zoos.

"It would be impossible to describe all the many types of cobras that infest the islands of the Pacific and the Asiatic mainland, as there are many varieties. Only one variety carries the hood which it puffs up when attacking or aroused: that is the famous king cobra of India and Luzon."

Passing of the GIP's

The War Department is gradually replacing the Gunners' Instruction Pamphlets formerly published by the JOURNAL with Technical Manuals covering the same subjects in revised form. These manuals are being given an initial free distribution of some thirty-five to forty-five copies to appropriate organizations.

Any quantity needed in excess of the free distribution may be obtained on order through the COAST ARTILLERY JOURNAL. Many organization commanders desire more than the distribution quantity. On any such order of 100 or more, the JOURNAL can obtain a discount to be allowed the purchaser. See inside front cover for list and prices.

The Efficient Mr. Moto

The Japanese soldier moves through the jungle in sneakers and shorts. He has simple equipment. There is just one size of hat for the entire Army; it has a draw string in the back so that it can be made to fit any head. His bag of rice, water filter, and tropical medicine pills are about the only other field equipment he carries besides his rifle and ammunition. He needs no soup kitchens to give him hot food as our troops have been used to, and with his light weight ammunition he can act as a self-sustained fighting unit for days. The Japanese soldier is an aggressive, strong, wiry, ruthless fighter. He travels through forests and over any obstacle in the terrain at a pace which some would consider good over the flat. He thinks little of marching 35 miles for several days on end and then fighting at the end of it. When their troops come to a swamp or deep water they blow up their belts, which can be readily inflated, and they have a support in the water. They fold back specially built things that look like leggins, but can be made into water paddles, and the swamp or river becomes a highway rather than an obstacle. Another feature of their attack is the tree-men. They filter their way through the lines and then shoot men up the trees to fire into the backs of the opposing troops. They lash themselves into the trees so that even if killed they will still draw fire. The individual soldier is well trained, fanatical in his conviction that death in battle puts him among the highly select. He combines this conviction with a hatred of the white man, but he does not waste himself in fanaticism or blind hate. His organization is simple and his transport is excellent. The planes he flies are fine, and he knows

how to fly them. The tactics thus far employed by him have been vigorous, well thought out, and disclose little if any weakness. Their communication system is excellent. They have some of the best communicating sets between ground and ground, and ground and air, that our observers have ever seen. We are ridding ourselves quite rapidly of all the popular fetishes, such as the inability of the Japanese to fly, or to do anything but imitate. Let no one err in this respect. The Japanese are good, well equipped, aggressive fighters in their own right.—HON. JOHN J. MCCLOY.

Possible Targets for CA Guns

The new 1941 edition of Jane's *Fighting Ships* lists the names of the last three of a group of five Japanese fighting monsters of "more than 40,000 tons." Two of these, the *Nissin* and the *Takamatu,* are either completed or just about completed. The other three, the *Kii,* the *Owari* and the *Tosa* must be nearing completion as the keel of the last was laid two and one-half years ago.

This edition lists a class of 12,000 or 15,000 ton Japanese warships somewhat similar to the German pocket battleship. These are known as the *Chichibu* class.

The volume notes a slight increase in Japanese cruisers and destroyers over those shown in the previous edition. The submarine strength is given as over eighty.

Credit Restriction Test at Fort Bragg

The experiment to determine whether enlisted men can be put on a pay-as-you-go basis in their personal purchases at military stations is receiving a three months' trial at Fort Bragg.

Under the present easy-going "charge it" system many soldiers find on every payday that they have drifted into a cumulative debt that consumes a large share of their monthly pay, leaving them with the prospect of worrying through another month on credit and borrowings.

Besides relieving the individual of recurrent financial worries which impair his efficiency, the new system is calculated to inculcate habits of thrift and prudence which will enhance his dignity as a soldier and serve him well throughout his life.

But beyond the benefit it confers on the individual soldier, the new plan makes for a substantial contribution to Army efficiency by eliminating a large volume of administrative paper work and thereby freeing the time of military commanders for strictly military duties. The War Department is confident that soldiers will accept the new system in the same coöperative spirit in which civilians have accepted the national policy of reducing credit buying.

The test at Fort Bragg begins on August 1, thus permitting each soldier to receive at least one full month's pay under The Pay Readjustment Act before the test is put into effect.

In order to make the transition from the credit system without undue hardship, a partial payment will be made to the Fort Bragg personnel in the middle of the first month of the test.

During the experimental period at Fort Bragg, all purchases from the Post Exchange, theatre, company-owned activities such as barber shops, pool tables, tailor shops, etc., and concessions of a similar nature, will be for cash or coupons bought and paid for in advance. The only enlisted men exempt from this rule are non-commissioned officers of the first three grades.

For the duration of the test, the sale of Post Exchange coupon books at a discount of five per cent has been authorized. Army Motion Picture Coupon books will continue to be sold at a discount of approximately 30 per cent as has been the practice for a number of years. The sale of these will be handled by post theatres and exchanges, but not by organization commanders as heretofore.

Simultaneously with the experiment at Fort Bragg, an intensive campaign will be launched to reduce the amount of credit extended on company collection sheets at all other military posts, camps, stations and organizations, including overseas commands. The objective is a reduction of at least fifty per cent by the last of the test.

If the tryout at Fort Bragg proves successful, company collection sheets will be discontinued throughout the Army, and charge accounts for enlisted men will be confined to men of the first three grades. This would mean that unit commanders would be relieved of a heavy non-military burden of record-keeping and correspondence. Collection sheets involve a great accumulation of administrative detail, particularly when men are transferred from one unit to another.

ROTC Training at Camp Davis

ROTC men from twenty colleges are at Camp Davis to pursue a ten-week course in the Antiaircraft School as officer candidates. Upon successful completion of the course they will be commissioned with other members of their class as second lieutenants.

The ROTC students have finished the regulation four years of part-time training, but did not attend the summer camp required at the end of their junior year. To finish their training they are now required to take virtually the same course given officer candidates.

Upon arrival at Camp Davis they were assigned to Battery I of the OCS and quartered with the other candidates. The same things will be required of them that are required of ordinary student officers, and they will be judged by the same standards before receiving commissions.

Change in TM 4-235

The following change to the 1942 Supplement to TM 4-235, November 25, 1941, Coast Artillery Target Practice, has been announced:

11. SCORE.

a. Firing Phase.—(1) The score for each course is:

* * * *

H′ G′ M′ is taken to one decimal place from *Figure 1* for 3-inch antiaircraft guns, or *Figure 1½* for 90mm antiaircraft guns, using as arguments the normal rate of fire (as prescribed in par. *51 i*, TM 4-235) and the average slant range in yards of the course taken to the nearest hundred yards.

* * *

Armor Plate Development

Production of bullet-proof armor and other steel products of paramount interest at the present time may be greatly aided by new technical developments revealed recently.

Scientists of the United Nations, especially in this country, Britain and India, have found new secrets of the behavior of steel and other metallic alloys under great variations of temperature and stress.

A scientific report from India states that the laboratories of the famous Tata Iron and Steel Works in that country have been developing many varieties of bullet-proof armor plate, some of which might be used for making armor for individual fighters.

Among the armor plates made by the Tata Laboratories are types which withstand bullets flying at 1,400 and 2,400 feet per second, fired from 35 to 40 yards range. These plates are less than one-third of an inch in thickness.

Steel was alloyed with nickel, chromium, and molybdenum and other metals found in India for the making of these armor plates.

In America systematic researches are going on, and while those pertaining to war activities are not revealed, many of them are of scientific interest for all times.

According to the transactions of the American Society of Metals, the fundamental behavior of the hardness, resistance to impact, to deformation and rust, under very high and low temperatures of steel alloys is being investigated by new methods.

Prof. W. H. Hatfield, British scientist of Sheffield, has been carrying on some most dramatic researches on steel, with a view to producing special alloys of required properties.

One of his experimental studies was to measure whether a certain extremely strong steel could be deformed when subject to heavy loads for long periods. A ten-foot long bar of this material has been subjected to a load of 25 tons per square inch.

So far this stress has been applied for more than 100,000 hours. The bar has resisted "creep" or deformation, which can be measured down to 1/25,000,000,000ths of an inch shifting.

Prof. Hatfield has now evolved very rapid tests for steel's hardness and plasticity.

The key to the rust resistance power of steel is that a minute film of chromium oxide, only about 1/500,000th of an inch thick, is formed on the steel surface and protects it.—*Washington Post.*

* * *

Barrage Balloons on West Coast

Vital installations of military importance on the West Coast from Canada to Mexico have been provided with Barrage Balloon defenses, according to public news services. It is said that in some localities the density of the balloons exceeds that of defenses in Britain.

* * *

Identification Chart

The War Department has sent an official letter of commendation to Second Lieutenant Donald E. Simon, Coast Artillery Corps and Second Lieutenant R. H. Hinckley, Jr., Field Artillery, for their invention of a novel Identification of War Planes Chart. This circular chart with a movable overlay was constructed by the two officers while cadets at West Point. They placed their idea and the result of their labor at the disposal of the War Department and as a result the War Department has printed and widely distributed to the service, restricted copies of their chart with some slight modifications.

The original model as shown in the accompanying illustration has been rearranged so as to issue separate charts for friendly and enemy aircraft. These charts will be issued for the use of pilots in the AAF and for observers in the Aircraft Warning Service, as well as for ground troops.

The inventors and their chart.

General Officers from the CAC

The War Department announced on May 20 that three Coast Artillery colonels had been promoted to the rank of brigadier general (temporary). Colonels Randolph T. Pendleton, Edward A. Evans, and Albert E. Coburn were the Coast Artillerymen whose nominations went to the Senate on that date.

On June 25 it was announced that Colonels Samuel L. McCroskey and Lyman L. Lemnitzer had been promoted to the rank of brigadier general (temporary).

AA Board

AR 90-10, dated June 6, 1942, provides for the establishment of the Antiaircraft Artillery Board, with station at Camp Davis, North Carolina. The purpose of the Board is to consider subjects pertaining to antiaircraft artillery and other subjects as may be referred to it by the Commanding General, Antiaircraft Command, and to originate and submit recommendations looking to the improvement of antiaircraft artillery.

The Antiaircraft Artillery Board will operate under the control and direction of the Commanding General, Antiaircraft Command.

.45 Caliber Ammunition

War Department Circular Number 145 states that "after consumption of the existing stocks of caliber .45 tracer ammunition, caliber .45 ball will be substituted therefor on a round for round basis."

The JOURNAL Curve Climbs

With the publication of the last issue, the circulation curve broke through the last line on the chart, but there is still room for 200 or more subscriptions before it will be necessary to draw a new graph.

Lieutenant Colonel Merle W. Thompson sent in twenty-two subscriptions to bring the 436th Separate Coast Artillery Battalion into the ranks of the 100 percenters. Colonel Chase's letter on page 83 tells a story of loyalty to the JOURNAL that makes the editor feel that his work is well worth while. Major Paul Reed, commanding the 1st Battalion of the 504th Coast Artillery, sent in seven subscriptions with a note stating that this was just a start.

Production of AA Guns

On June 26 the President released some figures on armament production which he stated would "bring the Axis the opposite of aid and comfort." Although he mentioned no specific figures on the production of antiaircraft guns, he did say that the goal for 1942 was 20,000 AA guns, presumably of all calibers, and that the goal for 1943 was 35,000 sky-splitters. The rest of this statement bore out his assertion that "we are well on our way toward achieving the rate of production which will bring us to our goal.

Change in Aircraft Markings

To remove the possibility of confusion of U. S. military aircraft with enemy planes, a new identifying insignia has been adopted for all combat aircraft, the War Department announces.

The red circle in the center of the wing insignia, which has been used since 1919, has been eliminated and replaced by a five-pointed white star within a blue circle .Red and white tail markings also have been eliminated.

During the World War, U. S. aircraft wing insignia was three concentric circles, the center being red, the middle circle white and the outer circle blue. In May, 1919, the white star was added, making the insignia a white star with a superimposed red circle within the white and blue circles.

V-Mail in Operation

The new V-Mail service is now in operation between U. S. Army units in England and Northern Ireland and the United States.

Under this new service, V-Mail from U. S. forces in those areas is dispatched to a central station where, under control of the War Department, it is first censored and then photographed on small rolls of microfilm.

The microfilm rolls are then dispatched, under the control of the War Department, to this country, where they are developed and photostatic copies are made on special forms which are placed in window envelopes and are presented by the War Dpartment to the Postal Service and sent through the regular mails to the addressee.

Through the use of the microfilm valuable cargo space is saved by eliminating bulk mail shipments and faster and safer transportation will be provided by air.

The inauguration of V-Mail Service follows many months of study and preparation on the part of the War, Navy and Post Office Departments.

Special stationery has been provided U. S. troops in England and Northern Ireland containing space for the name and address of the addressee and also the sender, together with the date and place for the censor's stamp.

At the present time, V-Mail is being handled on a one-way basis only, between England, Northern Ireland and the United States, but details are now being worked out for transmission of this type mail to and from U. S. armed forces in other parts of the world. The service will be extended to other overseas forces as rapidly as

equipment can be installed and the special stationery furnished them.

Study is now being given to the possibility of extending V-Mail Service to a large number of post offices within the United States in order that postal patrons in this country may avail themselves of the V-Mail Service in their correspondence with members of the armed forces stationed outside the continental limits of the United States, although it cannot be emphasized too strongly that this is not in any way a domestic mail service. The results of this study will be announced when completed.

Radio instruction at Camp Hulen.

Specifications for Blackout Equipment

The War Department has announced that the Engineer Board has prepared standard specifications for essential blackout equipment and requirements, copies of which have been distributed to all Defense Commanders and Corps Area Commanders. These separate bulletins are being distributed, entitled as follows:

Blackout Requirements for Highway Movement.
Blackout of Buildings.
Street Lighting During Blackouts.

The bulletins are not intended for general distribution at this time, but for the use of Army and governmental officials and equipment manufacturers, where necessary, for the establishment of effective measures for adequate blackouts through the use of approved technical devices and materials. It is expected that the Office of Civilian Defense will publish and distribute the specifications later in areas to which they will be applied.

Blackout equipment described in the specification on requirements for highway movement is designed to provide maximum safety of ground movement with reasonable freedom from detection by enemy aircraft. Inasmuch as a period of at least five minutes is required for the human eye to become fairly well adapted for vision during a blackout, it is recommended that no user of the road, except in an emergency, should move in a blackout until his eyes are properly "dark-adapted." Detailed instructions are given with respect to the equipment for all types of vehicles using the highways, including public, private, military and emergency vehicles.

The specification prescribes that "one, and only one, approved blackout driving lamp shall be employed on all motor vehicles" and that it shall be mounted on the front of the vehicle between the left side and the center, far enough forward to eliminate appreciable reflection of light from any portion of the vehicle. Precise descriptions are given of the types of driving lights, combination blackout tail and stop lamps, blackout front clearance lamps and other equipment recommended and how they are to be installed, on all classifications of conveyances from street cars and buses to motorcycles, horse-drawn conveyances and push-carts. Drab brown paint is recommended for all shiny surfaces.

Attention is also given to the needs of pedestrians and traffic control personnel required to stand or move in highways during blackouts. Under such conditions, states the specification, pedestrians are not generally visible from moving vehicles and for that reason, they must learn to keep out of the path of vehicles in motion and not depend on the operators to see them. Pedestrians detailed to blackout duty should wear white or reflectorized leggings, or anklets equipped with clear reflectors, and should carry blackout flashlights or lanterns.

Luminous materials, according to the specification, are not generally recommended for outdoor use for vehicles or individuals because of their relatively low sustained brightness, in comparison with starlight or moonlight, the high rate of deterioration of most of these materials when exposed to sunlight or moisture, and their high cost.

COAST ARTILLERY IN ACTION

Last Days on Corregidor*

By LIEUTENANT COLONEL WARREN J. CLEAR

Three times every day—shortly after dawn, at noon and at sunset—Photographer Joe, the Japanese reconnaissance pilot, would appear over Corregidor. We could always tell when he or his camera found anything unusual, say a new gun position, for the next morning the bombers would be over to smash it. Joe knew he operated with impunity. There were no planes on The Rock to menace him, and the two P-40's that were left over in Bataan were too decrepit to catch him. He always kept a couple of hundred feet outside our AA fire, but once he almost cut it too fine. We nipped off a piece of his tail, whereupon we heard him radio—in English—"I am evacuating."

The Rock was a target the Japanese bombers couldn't miss, and it mattered little where they hit it. Every square yard of it was packed with personnel, food, ammunition or communications.

The common conception of Corregidor as a huge impregnable rock, labyrinthed with tunnels, is entirely erroneous. There was only one tunnel, and of the 10,000 people on the island, only 600 could be sheltered in it. Most of these were the sick and wounded.

All the great 12-inch rifles and mortars, and all but one of the three-inch guns, were out in the open, and there was no protection for the gun crews. Hiding the guns in galleries blasted out of Corregidor's rocky cliffs had often been recommended, but the provisions of our treaty with Japan, honorably observed, prevented this modernization of the island's defenses. From captured Mt. Mariveles, at the southern end of Bataan, the Japanese were able to command all of Corregidor with their big guns. And our men, without observation planes, had to fight blindfolded against an enemy who had constant and complete observation.

After the Japanese, in December, destroyed all of the great barracks on Topside, as the upper part of the island was called, the troops had to live, sleep and eat in the open. During bombings they ran from one foxhole to another, naked in their defenselessness. General George F. Moore, commander of Corregidor, and I were standing fifty yards away when a 500-pound bomb scored a direct hit on a 12-inch battery, killing a young Coast Artillery captain and thirty-five of his gun crew. They were crushed to death in an improvised dugout.

But we were able once to give the Nips a taste of their own medicine. They mounted six 9.4-inch guns on the Southern Peninsula, in an area plotted and calibrated years before by our farsighted Coast Artillery officers. Natives slipping in at night by canoe gave us their positions. We had them as surely as if they had been ten feet from our guns. General Moore waited patiently day after day until the enemy batteries had been completely establishd and personnel moved in to man them. Then, at three o'clock one fine morning, eight of our big howitzers began hurling 762-pound demolition and shrapnel shells into the enemy emplacements. We learned later that 600 Japanese were killed, and hundreds of others wounded. The batteries were completely destroyed.

Fifty bombers made a special effort to destroy General MacArthur and his staff. The dive bombers first strafed a hundred cars parked about the administration building, and set them afire. Then the heavy bombers began dropping 500-pounders. Four hit the corners of the big concrete building, making craters you could drop a house in. Two bombs tore through the three concrete floors above the lower room in which General Sutherland and two aides were crouching. The whole building heaved and shuddered like a ship in a storm. Chunks of ceiling and fifty-pound chunks of shrapnel showered the lower floor. One end of the building was sucked out by the tremendous vacuum created by the bursting of a huge bomb a few yards away.

"I guess this is it," was General Sutherland's only comment. Many others died in that building that day.

*From *The Heroic Defense of the Philippines, Reader's Digest* for July, 1942, by permission of the editors.

but the Chief of Staff and his aides escaped unhurt.

The great hospital on Topside was blasted off the face of the earth by 67 Jap bombers. Fortunately, the medical officers had removed all the patients a couple of days before and carried them down to the tunnel. Even there the patients were only relatively safe. In one of the laterals next to them were 250,000 pounds of black powder. In other laterals were 220,000 gallons of gasoline, thousands of rounds of three-inch antiaircraft ammunition, giving off explosive picric acid fumes, and thousands of 8-, 10- and 12-inch shells. Nobody needed a No Smoking sign—to strike a match there would have meant death for everybody on the island. Every man there knew that he was living on top of a volcano.

The island's only defenses against the endless and merciless fleets of silver-colored bombers were a few three-inch antiaircraft guns. The total amount of AA ammunition on hand at the start of the siege was 30,000 rounds; at an average daily expenditure of 1,000 rounds, this would have lasted only a month. The air raids were so frequent, and it was so necessary to conserve ammunition, that many a flight of bombers dumped its loads without being fired on. With the type of ammunition on hand, the gun crews had to wait until the planes were directly overhead, the shortest range.

During the first days of February a submarine got through the Japanese blockade with a small quantity of modern three-inch ammunition with mechanical fuses. The battery commanders doled it out as if each shell were made of solid gold. They bided their time until large bomber formations came over and presented extremely favorable targets. With the new stuff, our gunners then reached up 25,000 feet and knocked many an overconfident Nip out of the sky. They proved what American soldiers can do when they have decent tools to work with.

All these AA batteries were in the open with only a circle of sandbags around them. Often the burst of a 300- or 500-pound bomb near the gun-emplacement blasted the sandbags, the gun and the crew. But the men never flinched; they were always ready for more.

And so it went on to the inevitable end. I wasn't there for the final days, but I can see the big bombers searching out the few remaining guns, the dive-bombers swooping down for the kill at exhausted gun crews. Day after day the enemy batteries on Bataan poured their screaming projectiles into the tunnel mouth, tearing away the face of cliffs, smothering the beach defenders in bloody debris. And then the steel barges, loaded with savage foes, loomed out of the darkness of the channel, and spewed their murderous crews ashore.

The island was on fire. Ammunition dumps were blowing up. Relentlessly the fresh hordes of attackers moved forward toward the tunnel. In the hospital laterals a hundred white-faced women huddled, shuddering, against the walls. All was darkness and confusion, destruction and death.

Into the black tunnel itself smashed the invaders. There was bloody work there with bayonet, knife and hand grenade. But it had to come at last—the very end. May the agonies of those last awful hours appeal to the conscience of all who proudly bear the name *American*.

Citations

Soldier's Medal

Solomon Crystal, private first class, Coast Artillery Corps. For heroism displayed in rescuing a man from drowning in the Atlantic Ocean near Virginia Beach, Virginia, on July 2, 1941. Upon hearing a cry for help from a comrade who became exhausted while swimming and was rapidly being carried out to sea by the rough winds and heavy undertow and was in grave danger of drowning, Private First Class *Crystal,* with utter disregard of his own safety, although himself a poor swimmer, went to the assistance of the drowning man. With great difficulty and exceptional bravery Private First Class *Crystall* succeeded in bringing the man in distress safely to shore, thereby saving his life. The heroism displayed by Private First Class *Crystal* on this occasion reflects great credit upon himself and the military service. Residence at enlistment: New York City, New York.

(G.O. 8, W.D. January 31, 1942)

Adolph Karlonas, corporal, Coast Artillery Corps. For heroism displayed in rescuing an officer from drowning at Camp Nanakuli, Territory of Hawaii, on the night of August 3, 1941. Hearing cries for help from the sea, Corporal *Karlonas,* with utter disregard of his personal safety, plunged into the water and swam to the assistance of the struggling man. Despite the darkness of the night and the swift current, Corporal *Karlonas* swam approximately twenty-five yards from shore, relieved an exhausted life saver, and succeeded in bringing the drowning man safely to shore where he assisted in administering artificial respiration thereby saving his life. The heroism displayed by Corporal *Karlonas* on this occasion reflects great credit upon himself and the military service. Residence at enlistment: Nashua, New Hampshire.

(G.O. 27, W.D. May 25, 1942)

* * * *

John J. McKeage, private first class, Coast Artillery Corps. For heroism displayed in rescuing an officer from drowning at Camp Nanakuli, Territory of Hawaii, on the night of August 3, 1941. Hearing cries for help from the sea, Private First Class *McKeage,* with utter disregard of his personal safety, plunged into the water and swam to the assistance of the struggling man.

Despite the darkness of the night and the swift current, Private First Class *McKeage,* with the assistance of another soldier, succeeded in bringing the man in distress safely to the shore. The heroism displayed by Private First Class *McKeage* on this occasion reflects great credit upon himself and the military service. Residence at enlistment: Philadelphia, Pennsylvania.

(G.O. 27, W.D. May 25, 1942)

* * * *

Walter K. Wilbraham, private, Coast Artillery Corps. For heroism displayed in assisting in rescuing a woman from a burning cabin cruiser in Narragansett Bay, near Fort Adams, Rhode Island, on July 14, 1941. On hearing cries for help coming from a burning cabin cruiser occupied by a man and a woman, approximately one-half mile from shore, Private *Wilbraham,* with utter disregard of personal safety, voluntarily swam through treacherous waters to the burning boat. Upon being told that there was grave danger of a more serious explosion aboard, he assisted in lowering into the water the woman occupant, unable to swim, into the hands of two other enlisted men who had also swum out to the boat. Seeing that the woman was in good hands, he then remained on board and with extreme risk to his own life due to the imminent danger of the main gas tank exploding, assisted in trying to extinguish the fire raging in both cabins, until the boat was finally towed to dock by mine yawls and the remaining fires extinguished. The heroism displayed by Private *Wilbraham* on this occasion reflects great credit upon himself and the military service. Residence at enlistment: West Collingswood, New Jersey. Next of Kin: Mrs. Mary Wilbraham, 304 Maple Avenue, Collingswood, New Jersey, widow.

(G.O. 28, W.D. June 5, 1942)

* * * *

Wilson P. O'Brien, private, Coast Artillery Corps, United States Army. For heroism displayed in rescuing a man from drowning in the East River, New York City, on February 10, 1942. Seeing a man struggling in the swift current of the East River, Private *O'Brien,* with utter disregard of his own personal safety, jumped into the river, filled with floating cakes of ice, and with the aid of ropes thrown him by a civilian, succeeded in bringing the drowning man to the shore, thereby saving his life. Residence at enlistment: Steubenville, Ohio.

(G.O. 29, W.D. June 9, 1942)

* * * *

Henry R. Acker (Army serial No. 32111164), private, Coast Artillery Corps. For heroism displayed in assisting in rescuing a woman from a burning cabin cruiser in Narragansett Bay, near Fort Adams, Rhode Island, on July 14, 1941. On hearing cries for help coming from a burning cabin cruiser occupied by a man and a woman approximately one-half mile from shore, Private *Acker,* with utter disregard of personal safety, voluntarily swam through treacherous waters to the burning boat. Upon being told that there was grave danger of a more serious explosion aboard, Private *Acker,* and another enlisted man who had also swum out to the cruiser, convinced the woman occupant who could not swim, to enter the water, and after adjusting her life preserver safely towed her through the one-half mile of treacherous waters to shore, thereby saving her life. The heroism displayed by Private *Acker* on this occasion reflects great credit upon himself and the military service. Residence at enlistment: New Rochelle, New York.

(G.O. 30, W.D. June 14, 1942)

* * * *

Robert I. Fitzhenry, private, Coast Artillery Corps. For heroism displayed in assisting in rescuing a woman from a burning cabin cruiser in Narragansett Bay, near Fort Adams, Rhode Island, on July 14, 1941. On hearing cries for help coming from a burning cabin cruiser occupied by a man and a woman approximately one-half mile from shore, Private *Fitzhenry,* with utter disregard of personal safety, voluntarily swam through treacherous waters to the burning boat. Upon being told that there was grave danger of a more serious explosion aboard, he assisted in lowering into the water the woman occupant, unable to swim, into the hands of two other enlisted men who had also swum out to the boat. Seeing that the woman was in good hands, he then remained on board and with extreme risk to his own life, due to the imminent danger of the main gas tank exploding, assisted in trying to extinguish the fire raging in both cabins, until the boat was finally towed to dock by mine yawls and the remaining fires extinguished. The heroism displayed by Private *Fitzhenry* on this occasion reflects great credit upon himself and the military service. Residence at enlistment: New Rochelle, New York.

(G.O. 30, W.D. June 14, 1942)

* * * *

William H. Sharp (Army Serial No. 32070742), private, Coast Artillery Corps. For heroism displayed in assisting in rescuing a woman from a burning cabin cruiser in Narragansett Bay, near Fort Adams, Rhode Island, on July 14, 1941. On hearing cries for help coming from a burning cabin cruiser occupied by a man and a woman approximately one-half mile from shore, Private *Sharp,* with utter disregard of personal safety, voluntarily swam through treacherous waters to the burning boat. Upon being told that there was grave danger of a more serious explosion aboard, Private *Sharp,* and another enlisted man who had also swum out to the cruiser, convinced the woman occupant who could not swim, to enter the water, and after adjusting her life preserver safely towed her through the one-half mile of treacherous waters to shore, thereby saving her life. The heroism displayed by Private *Sharp* on this oc-

casion reflects great credit upon himself and the military service. Residence at enlistment: Camden, New Jersey.

(G.O. 30, W.D. June 14, 1942)

* * * *

Thomas J. Sheridan, Jr., private, Coast Artillery Corps. For heroism displayed in assisting in rescuing a woman from a burning cabin cruiser in Narragansett Bay, near Fort Adams, Rhode Island, on July 14, 1941. On hearing cries for help coming from a burning cabin cruiser occupied by a man and a woman approximately one-half mile from shore, Private *Sheridan*, with utter disregard of personal safety, voluntarily swam through treacherous waters to the burning boat. Upon being told that there was grave danger of a more serious explosion, he assisted in lowering into the water the woman occupant, unable to swim, into the hands of two other enlisted men who had also swum out to the boat. Seeing that the woman was in good hands, he then remained on board and with extreme risk to his own life, due to the imminent danger of the main gas tank exploding, assisted in trying to extinguish the fire raging in both cabins, until the boat was finally towed to the dock by mine yawls and the remaining fires extinguished. The heroism displayed by Private *Sheridan* on this occasion reflects great credit upon himself and the military service. Residence at enlistment: Bronx, New York.

(G.O. 30, W.D. June 14, 1942)

Fast Company

Your predecessors have usually endured long years of slow promotion. They have suffered professionally from our national habit of indifference to military foresight. You will enter the service under quite different circumstances. Your opportunities will be great and they will come soon, but your responsibilities will be far greater and more immediate.

In a few days you will find yourselves among thousands of officers who have recently won their commissions in a rigorous competition unique in the annals of our Army. These officers are splendid types. They understand from personal experience the tasks, the duties and the daily problems of the private soldier. They have received intensive training in the technique of weapons and in minor tactics. They won their commissions because they proved conclusively in a grueling test that they were leaders, and that they had the necessary intelligence and initiative. Already they are familiar with the concentrations and movements of large masses of men. Many of them have participated in maneuvers which extended over a period of months and involved hundreds of thousands of troops operating over tremendous areas, covering in one instance an entire state. In other words, you will be in fast company; you are to join virile, highly developed forces. You will meet the citizen-soldiers of America at their best and, by the same token, you will have to work very hard to justify your heritage.—General George C. Marshall, May 29, 1942, to Graduating Class, U. S. Military Academy.

Coast Artillery Activities

Bermuda Base Command

By Captain George B. Myers

When the first American forces and base workers arrived in Bermuda over a year ago our men found an island where the motor vehicle was taboo, where the horse still held sway in the transportation field.

It was inevitable that the easy-going Bermudian way of life would be hard on American soldiers, imbued with our American impatience to get things done; and that those same traits in us would irritate the people here, such as the army motor vehicles "speeding" on the narrow, dusty coral roads at a maximum crawl of fifteen miles per hour! But it is a point of pride with both the Bermudians and the command that coöperation and goodwill prevailed and differences were ironed out by mutual concessions.

Those pioneer forces were faced with plain hard toil—difficulties galore—discouraging problems that somehow were solved. Out of them, through the sheer determination and ingenuity that is the characteristic of the American soldier, grew the Bermuda Base Command—and the defenses of the island.

The Bermuda that we found here was not the Bermuda of the deluxe cruise advertisements; war had stopped the gay tourist life; the climate, the beaches, the golf courses, the great hotels were still here, but depressingly idle and empty. These were the facilities that the men turned to for their recreation as our activities gradually became settled and organized. Here was a great vacation playground affording sports from deep sea fishing to golf and tennis. As Americans we missed baseball fields, but gradually found locations where space was available for laying out a diamond. Most serious of all to the average soldier was the lack of social life, but the United Service Clubs and the USO were not long in stepping into the breach to help solve this need.

Somewhere in Bermuda.

Basketball.

Today Bermuda is a strong, vital link in the U. S. Chain of bases on our Atlantic front. It has taken plenty of hard work and sweat by both service men and civilian workers to build it to the command that it is today. Problems still exist for the war and the presence of our armed forces here are changing life in Bermuda from the simple, easy-going eighteenth century ways that were the delight of the traveler in days gone by to a more modern tempo.

Camp Stewart

BRIGADIER GENERAL EARL H. METZGER, *Commanding*

By Lieutenant Walter H. Dustmann, Jr.

Camp Stewart has in the past few weeks been living up to its motto of "Shoot 'Em Down"—with a vengeance.

From early morning to late at night AA weapons are in action on the Camp Stewart ranges. Regiments and battalions practically live out there, eating and sleeping under field conditions. And splendid results are being obtained.

Here's the way one Camp Stewart officer significantly put it:

"The sleeves are being shot down with a frequency that is annoying as it delays firing activity until another sleeve can be put out."

Among the regiments now engaged in this stepped-up firing program is the first colored regiment trained at Stewart. It is holding its own in firing practice and its degree of training and soldierliness has caused much favorable comment.

Indicative of the speeded-up program of this antiaircraft training center is the fact that as much general training as possible is being conducted right alongside the firing lines of the AA ranges. While gunners blaze away at the sleeve targets other soldiers only a few yards away are engaged in other drills appropriate to their training program while awaiting their turn for firing.

The visit last month of British antiaircraft officers served as an especially valuable adjunct to the training program at Stewart. Four British majors who had been through the hell of the Battle of Britain spent several days at the camp conducting lectures and observing the range firing.

Said the Commanding General of their tour:

"We are very much pleased with their visit and they have been most helpful and have given valuable hints on firing based on their own experience."

The visiting AA coaching mission consisted of Major R. Greville Steele, Major D. Logan, Major W. Maddiston and Major G. F. Emanuel, all of the British Royal Artillery.

In things recreational, Stewart troops have been equally busy. The post baseball team, the first postwide athletic machine to take the field for Camp Stewart, won three of its first four starts with little trouble. Topping Fort Screven twice and the Brunswick All Stars handily, the Antiaircraftsmen were set back by the Parris Island Marines in the only loss to date.

Officers and men now have the use of a fine, regulation Skeet range under the capable supervision of Sergeant John Morrisey, himself one of the finest shots in the nation. Sergeant Morrisey could weight his chest with 129 medals he has received as marksmanship prizes. First team play on the range occurred when Lieutenant Colonel William V. Ochs' team topped one led by Colonel Paul French.

First sporting event in the new sports arena was an all colored boxing show, featuring some of the best amateur and professional talent in camp. Well attended, the show proved the popularity of the sport.

Figures released by the Stewart Librarian showed that a total of 10,000 books have been received here as the result of the Victory Book Campaign. Added to these were 300 new titles.

A new recreational activity in the form of a newspaper was added to the post in the last two months. The paper, appropriately titled *Shoot 'Em Down* is a six column, four page journal appearing every other Friday. Edited by Corporal Don Marr, it carries news of interest to the officers and men.

The War Bond drive at Stewart gains momentum every pay day with added pledges by soldiers and civilians. Already pushing the $150,000 figure the drive is expected by officers in charge to go even higher. One of the best individual buyers is Sergeant John H. Pace, who has $1,400 in bonds now and adds to his pile at the rate of $100 a month.

The post had two celebrities of sorts. Private First Class Alvin C. York is a cousin as well as a namesake of the World War I hero and Sergeant Andrew C. McBride is the son of Brigadier General Allen McBride, a departmental chief of staff under MacArthur on Bataan and now a prisoner of Japan. Sergeant McBride has been accepted by the local board for Officer Candidate training at the Field Artillery School.

I SHALL RETURN!
MACARTHUR

100%—The 60th Coast Artillery (AA)

HEADQUARTERS
SIXTIETH COAST ARTILLERY (AA)
Fort Mills, PI

December 16, 1941.

Lieutenant Colonel W. S. Phillips, CAC,
Editor of the COAST ARTILLERY JOURNAL,
1115 Seventeenth Street, N. W.,
Washington, D. C.

Dear Colonel Phillips:

In reply to your letter of October 9, 1941 to the Commanding Officer, 60th Coast Artillery (AA), Fort Mills, P. I., I have followed up your suggestion and made "personal contact" with all my officers regarding subscriptions to the COAST ARTILLERY JOURNAL.

I feel that every Coast Artillery Officer and each battery fund should subscribe to and support our "Trade Journal".

The list you enclosed was checked and the present 60th Coast Artillery subscribers are listed on inclosure number 1. If any of the officers on this list are not members of the U. S. Coast Artillery Association, request that you enter their names therein for membership and renew and bill their subscriptions to the Journal.

Inclosure number 2 lists all officers who are not now subscribers, but wish to join the U. S. Coast Artillery Association. Enter their subscription to the Journal for 1942, and renew and bill thereafter.

A United States Treasury Check, Fort Mills, P. I., No. 17428 is inclosed to cover the 33 officer subscriptions listed at $3.00 each.

Inclosure number 3 lists all officers and battery funds who are not now subscribers. Enter the officers membership in the U. S. Coast Artillery Association and their subscription to the Journal. Bill the officers and battery fund direct for their 1942 subscription. Renew and bill thereafter, for the officers' Subscriptions.

These subscriptions place the 60th Coast Artillery (AA) in the 100% class.

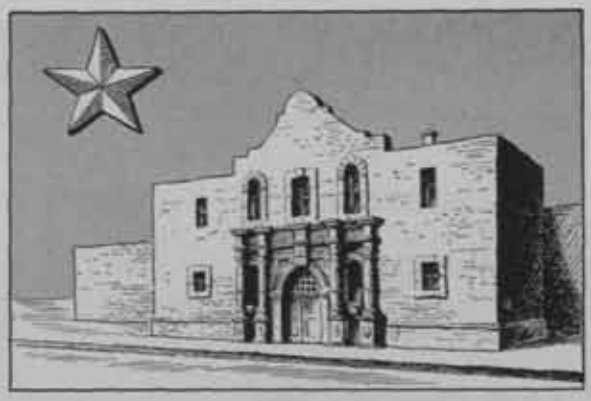
Wishing you continued success in your highly important position and with warmest regards to your staff, I am

Sincerely yours,

RECEIVED
JUN 13 1942
C A JOURNAL

T. M. CHASE,
Colonel, 60th C.A. (AA),
Commanding.

3 Incls-Incl 1-Present 60th CA(AA) subscribers
Incl 2-List of officers who wish to join the U. S. Coast Artillery Association.
Incl 3-List of officers and battery funds.



Fort Bliss

BRIGADIER GENERAL JAMES B. CRAWFORD, *Commanding AATC*

By Lieutenant Colonel Allison F. H. Scott

On December 8, the 200th C.A. (AA) went into action defending Clark Field, Pampango, Philippines, against attack by overwhelming members of hostile medium and dive bombers. When Clark Field was uncovered by the withdrawal of the North Luzon force, this regiment successfully covered the retirement into Bataan Peninsula and contributed to the prolonged defense of Bataan, covering air fields, artillery and rear installations. So reads the citation from W.D.G.O. 14, March 9, 1942 (See Page 73, C.A.J. Vol. LXXXV—No. 3).

This Antiaircraft Training Center is justly proud of the outstanding performance of this famous regiment which trained here from early January, 1941 until the end of August when it left for overseas duty. During their training period as Dry Land Coast Artillerymen, the men of the 200th took advantage of the exceptional opportunities afforded by our ideal location on the desert. Here they enjoyed the rugged type of living, little knowing that they were preparing themselves for the colossal task ahead—gallantly fighting and dying as loyal descendants of Kit Carson's Pioneer New Mexico Cavalry.

On May 16, 1942, Governor John E. Miles of New Mexico came to the AATC to see his son, a corporal in an AA battery, and visited with General James B. Crawford. During a tour of the Training Center, General Crawford told the Governor that, though we highly prized the hand-made insignia of the 200th C.A.(AA) Regiment, then located in front of its former headquarters, he felt the marker properly belonged to the people of New Mexico.

Accordingly, the marker was delivered to Santa Fé. On Flag Day, June 14th, the insignia, appropriately located on the mound of the State Capital lawn, was officially turned over to the State of New Mexico by Lieutenant Colonel Allison F. H. Scott, C.A.C., representing General Crawford, and the citations were read. Governor Miles dedicated the historical marker as a permanent memorial of the State of New Mexico. The Adjutant General of the State of New Mexico, Brigadier General Russell C. Charlton, in his address stated "that the marker was the most intimate thing we could find to maintain a link with the Regiment"—a proper tribute to those brave men who fought and died "defending the most human and democratic way of life the world has ever known."

The AA Command Inspection Team arrived Sunday, June 21, by air from Richmond for a three-day thorough inspection of the training of the units and separate organizations at AATC. These inspections included firing of the big guns and automatic weapons, tactical and field exercises, and administrative matters. The Inspection Team was headed by Brigadier General Dale D. Hinman, of the Training Division, assisted by Colonel Charles E. Atkinson, CAC; Lieutenant Colonel Carl F. Tischbein, CAC; Major Stanley W. Luther, CAC; and Major L. W. Eddy, CAC.

The program of intensive training of the units activated in the Spring is progressing at high speed, with continuing emphasis on developing the offensive spirit of the individual and team-work of the organizations in their tactical problems and field exercises.

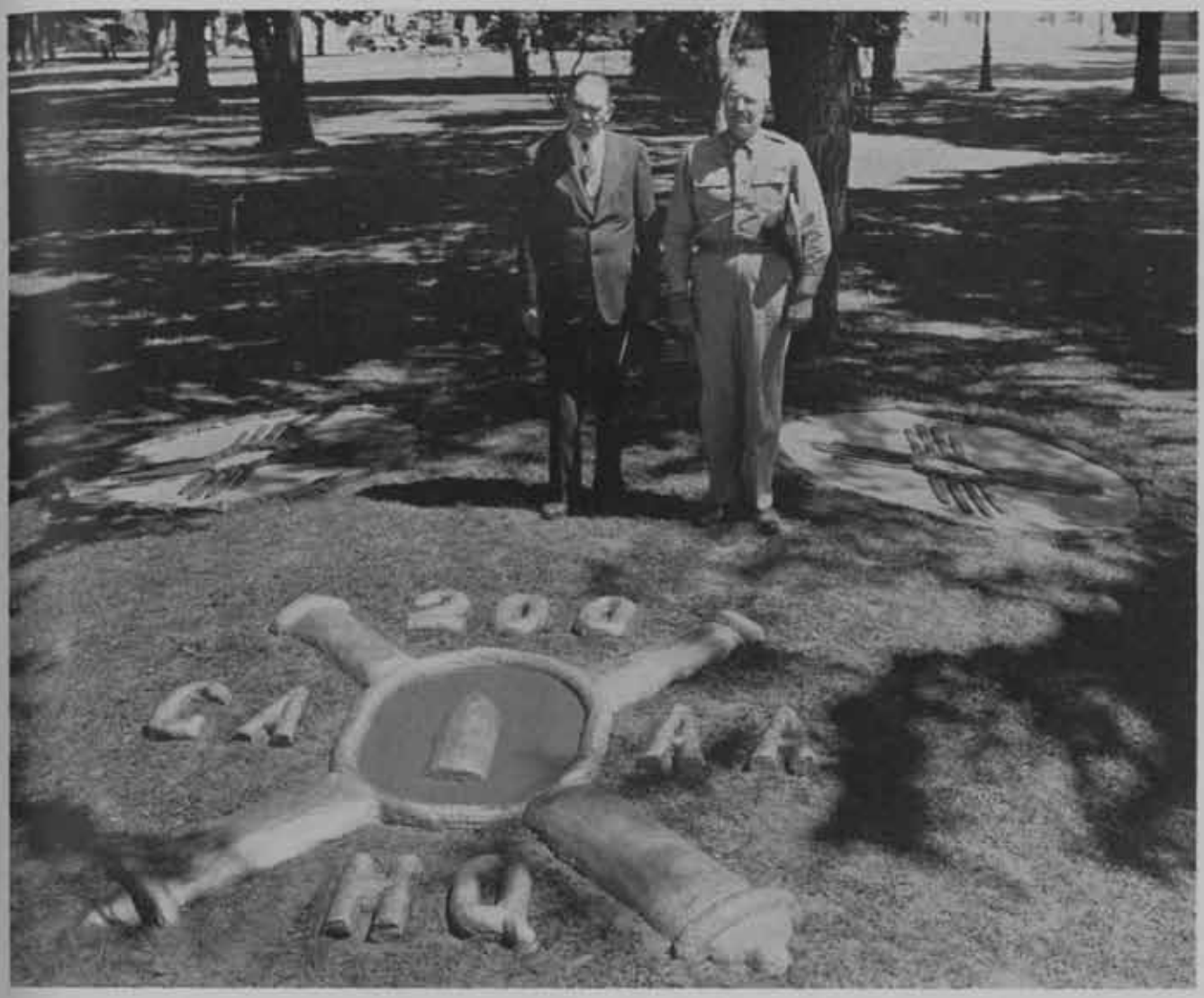
The units recently activated are already taxing the existing housing and training facilities, and a much needed broad expansion of all facilities is getting under way.

An entirely new 90mm AA gun firing point has been approved, which will provide 180 degrees field of fire. After a thorough study of the problem of adequate water supply in this portion of the Tularosa Basin with exploratory wells by Dr. Charles V. Theis of the U. S. Geological Survey, the location was carefully selected and construction of necessary facilities for housing ten gun batteries will be completed by September 1st.

Closer in to AATC is located the new automatic weapons firing range, to be ready early in September.

The rifle range facilities of Fort Bliss have been continuously used by the various organizations of the Cavalry, Post, and AATC on a tight schedule. However, approval has recently been secured to build, by September 1st, an additional small arms range for AATC adjacent to the Camp area, with sixty targets for .30 cal. rifle, twenty for .45 cal. pistol, and forty for the 1000-inch range.

A new permanent headquarters building for the



Governor John E. Miles, of New Mexico, and Brigadier General Russell C. Charlton, State Adjutant General, at dedication ceremonies.

Commanding General and Staff will be completed, across from the present temporary location, by October 1st, with modern facilities including a large assembly room for officers. Behind the headquarters building will be five sets of barracks and quarters for the headquarters battery, including a large recreation hall.

In order to accommodate the increasing number of battalions of automatic weapons to be activated by October 1st, new areas have been set aside and construction of hutments and field houses rushed to be ready as the cadres and troops arrive. Incidentally, all tent housing is being rapidly converted to hutments. Engineers' tests show that the temperature inside of converted hutments is about 11 degrees F. lower than the former tents.

New magazines are being constructed in the Post Ordnance Magazine Area to be available October 1st when the whole expanded program will be in full swing.

On May 30th, the AATC again took over San Jacinto Plaza in El Paso in observance of Memorial Day at Fort Bliss. Various types of antiaircraft matériel and equipment were demonstrated to the public who showed much interest in the exhibits. The AATC band provided concerts during intermissions.

Fathers Day was observed at Fort Bliss and AATC by a competition between the seven separate commands on the Post to find what father qualified for prizes donated through the Chamber of Commerce. AATC had the youngest father—20 years old—and the most soldierly, but the Cavalry Division took honors with a 1st Sergeant who was the oldest father, the oldest grandfather and the father with the most years in army service. The "jeering" sections added to the fun such an occasion afforded.

Beginning July 3rd, the annual Border Fiesta will be celebrated in Las Cruces, New Mexico.

Selected antiaircraft troops from the Training Center will participate in a military demonstration and program in celebration of Independence Day, Saturday, July 4th. General Crawford is making it possible for the people of New Mexico to visit an exhibition of the latest antiaircraft artillery matériel and equipment.

Camp Hulen

BRIGADIER GENERAL HARVEY C. ALLEN, *Commanding*

The middle of summer finds a large group in this camp who not so long ago replaced their civilian clothes with Uncle Sam's. Instead of planning the usual summer vacation for a part of this period they now find themselves busily engaged with a new profession which demands many hours of training. This, however, does not mean that some recreation is no longer a part of their routine. During off hours the garrison has full opportunity to enjoy all of the recreational facilities available to the camp. Location on the shore of Tres Palacios Bay affords swimming and fishing to all who enjoy those sports. The field house and athletic fields are used for supervised group games and the theaters and hostess house are available for entertaining members of the family and guests from home.

With large numbers of personnel requiring instruction in many subjects vital to their new profession, schools have played an important rôle at Camp Hulen during the last few months. In addition to the schools conducted by each organization, centralized schools are operated by the Training Center. These latter schools range all the way from mathematics through radio communication to gunnery and at the present time classes are conducted for both officers and enlisted men. The schools have proved invaluable to all units as a source of instructors for specialized subjects.

Well over a year ago when the first troops arrived at Camp Hulen, a building program was initiated which has progressed at various rates but never ceased. The local airfield adjacent to the camp is being improved to furnish all-weather runways. Drill fields, parking areas and roads within the camp have likewise been improved with the result that the major hazard of this area, namely mud, has been considerably reduced. Locations are such that firing may be conducted on all ranges simultaneously. A rifle range and two firing points for automatic weapons and guns are available with the result that units are enabled to train and become familiar with the weapons they expect to use in the field. The latest training adjuncts to be constructed are the bayonet and obstacle courses. Both of these facilities are being used to advantage and with full benefit to the troops engaged in this training. The physical conditioning accomplished by this training has been augmented by regularly scheduled road marches with the net result that all troops are preparing themselves to meet the rigors of field service.

Retreat.

Thus the middle of the summer finds all personnel at Camp Hulen busily engaged with either preliminary or final training of the various units stationed here. Older organizations entrain and depart for unknown destinations, but within a very short time their places are reoccupied by enthusiastic, new units which soon mold into experienced organizations anxious to be on their way. The speed with which these new units grasp the vital points of technical and tactical training is most gratifying and this, combined with their enthusiasm and "will to do" presages anything but happy days for the enemy.

Camp Wallace

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

Since the last news letter, the commanding general and staff of the AARTC, Camp Wallace, have been installed in a brand-new headquarters building, which combines the headquarters of the station complement and the replacement training center. Its full title is now the Headquarters of the Antiaircraft Replacement Training Center and Camp Wallace.

The combining of the two headquarters into a cohesive whole has created an increased smoothness in the conduct of the business of administration.

Camp Wallace has now headed into the warmer weather of Texas. Like the effect on a pitcher's arm, it has intensified accomplishment on all fronts. Most noteworthy of these has been the rise in the AARTC average of small-arms qualification.

The Camp Wallace softball team, which won the first round in the Texas City Oil League, boasts one of the nation's star hurlers in Corporal Willie Choc. The diminutive southpaw, who pitched the Hollywood Candy Company to two straight national titles, has continued his winning ways in the Army. So far this season Choc has turned in four no-hit, no-run games, and has an average of fifteen strikeouts per contest or nearly two an inning. Choc is, also, one of the club's leading hitters with a .374 average. The team is batting .318, Brannon, Barbolla and Hoffman showing the way. Among the opponents, which Wallace has downed are the former Houston City Champs, the Wyatt Boilermakers, and the Dow Chemical Ten from Freeport. A finishing spurt of five consecutive wins enabled the camp hardball team to gain a tie for second place in the Texas City Baseball League. Mike Barbolla, former Texas League hurler, sparked the soldiers in their drive for the pennant. His latest pitching feat was a three-hit shut-out over the Ellington Field Cadets. He is, also, a mainstay on the post softball team. Another standout on the Wallace nine is Bill Divers, hard-hitting thirdbaseman, who has, also, won two games on the mound. Harold McCloud, former Marshall College star, has shared most of the pitching burdens with Barbolla. The team has a record in league play of ten wins and five defeats.

In line with present training policies, a program of conditioning of the new trainee is being formulated. A series of graduated practice marches have been prescribed for each trainee. The hours and conditions of each practice march are varied to include many toughening features. A final test hike of approximately twenty miles is prescribed for the organization, the only notification prior to the actual order for the march being instructions alerting the unit for the ensuing twenty-four hours prepared to undertake a practice march of unknown duration. Numerous benefits to the physical condition of the individual soldier have been

Training Batteries indulge in a tug-of-war as a part of Camp Wallace's Physical Training Program.

One of the weekly practice marches required of each organization.

encountered since the inception of the training program.

The camp was inspected by Colonel W. A. Pickering, IGD, and Major Jack K. Tingle, IGD, on May 17th. A full week was spent in the inspection which concluded with a brigade review on May 21st. The inspectors' report rated the AARTC as superior.

On June 19th Camp Wallace played host to the corps area commander, Major General Richard Donovan. General Donovan expressed himself as very well pleased with all that he saw.

On June 27th and 28th Lieutenant Colonel C. E. Atkinson, CAC (AA command) and party consisting of Lieutenant Colonel Carl A. Tischbein, CAC (Headquarters, Ground Forces); Majors Stanley W. Luther, CAC, and Lawrence W. Eddy, CAC, both of the Antiaircraft Command visited the AARTC, Camp Wallace. The party made an inspection of training activities, beginning with a review at 4:30 P.M., a visit to an overnight bivouac and a searchlight drill on June 27th. The inspection was continued on the following day, covering all training activities and an inspection of the camp firing points at Fort Crockett.

Plans are afoot for the observance of Independence Day at Camp Wallace. In the morning a provisional regiment together with a motorized antiaircraft automatic weapons battery will take part in the parade in Houston. Open house will be held at the camp and all training features will be displayed during the morning. In the afternoon a brigade review will be held and the day will close with a baseball contest between the Camp Wallace hardball team and a civilian team.

New York-Philadelphia Sector

Brigadier General Ralph E. Haines, *Commanding*

By Captain W. F. Madison

Operations and training within the New York-Philadelphia Sector continue at an increased pace as the summer progresses. Former holidays such as Army Day, Memorial Day, Flag Day and the Fourth of July, except for short memorial services, are just work days for personnel within this sector. Parades and exhibitions for the general public are also a thing of the past on Coast Artillery posts here, since civilians are usually admitted only on official business.

Target practices scheduled last month which were temporarily held up are being fired as this goes to press. Reports from both the New York and Philadelphia Subsectors indicate that the extra training picked up in the meantime has proven of value—even to well trained units—in making the last minute corrections that invariably crop up just before firing time.

In stressing preparation for fire, and training in basic gunnery, General Haines has emphasized training practices designed to cut down personnel errors which often show up in men firing their first service practice. Reports on practices already completed indicate that when properly pursued such training has given the desired results.

A sample notation from one firing reads something like this: "Prior to the service practice all personnel, including officials, were thoroughly acquainted with their duties by firing three full-dress, subcaliber practices under all the requirements of a service practice shoot. As all phases of a practice were covered, all officers and men from Group Commander to gun crew were thoroughly schooled in their duties and accustomed to dealing with the varying conditions that might arise."

After each practice a thorough review and analysis was held. Errors were accounted for and provision made for their correction. The result of following this procedure for three subcaliber shoots was that when the service practice started even the newest recruits appeared at ease and ready for anything. Recorded results showed a substantial improvement over last year.

The efficiency not only of Coast Artillery personnel but of the entire sector forces is indicated by recent intensive maneuvers staged in the New York Subsector along the New Jersey coast. Civilian defense officials in the sixty-two municipalities of Monmouth County, New Jersey, took advantage of the opportunity to coordinate their activities with those of General Gage's command.

For the purposes of the alert, caused by the theoretical approach of enemy troops with auxiliary support, an alarm was flashed at 1:30 PM on a quiet Sunday afternoon in May. Within eight minutes motorized units stationed along the Coast were under way. The main defending forces were directed by observers to a point near Asbury Park, New Jersey, where "enemy" landing boats were heading. Despite repeated "dive bombing" by "enemy" aircraft, which the judges ruled caused widespread damage, the enemy boats were forced to turn back due to superior artillery and automatic weapons fire.

More surprised than the enemy, however, were the Sunday strollers on the boardwalks and the beach. The beach area was declared a dead zone and the bathers were not forced off, so they were able to enjoy the excitement—while the soldiers worked.

The "invaders" made three other landing attempts, including one with paratroops at the county seat, and all were successfully repulsed. All civilian traffic was halted in the entire area until the alert was over at 4 PM. Splendid coöperation was received from all civilian agencies.

With the end in view of having every serviceable coast defense gun mechanically perfect and ready to fire should the need arise, a number of what were formerly "caretaker status" batteries have been functionally fired this year. Many such guns, forming additional protection to busy harbors, have not been fired for many years because of the fact that they are adjacent to heavily congested areas. All firings were completed successfully and these tests showed clearly that lack of firing had no deleterious effect upon the operation of such guns.

Among units within the sector, the War Bond Pay Reservation Plan has been reported as very successful. Many of the units on each post have reported 100 per cent subscription and with the new pay increase many others are expected to increase the amounts subscribed under this plan.

In addition to the regular U.S.O. shows which are on tour throughout the country, the posts near New York have had several radio and screen stars pay them "pop calls." Among the celebrities who have brought entertainment to the men stationed at various posts near this area are Eddie Cantor, Dinah Shore, Eddie Duchin (now in the Navy), Staff Sergeant Ezra Stone (Henry Aldrich), and Corporal Joe Louis. The entire casts of two current Broadway plays, *Best Foot Forward* and *Angel Street*, have given shows at Fort Hamilton and Fort Hancock, and in addition many entertainers from night clubs in the city have given performances during their time off for the entertainment of the troops.

Through arrangement with the U.S.O., mobile motion picture units are furnishing movie entertainment to out-of-the-way units in the field situated where no shows are available. U.S.O. and Red Cross units serving coffee and doughnuts have also visited several of the out-of-the-way stations of patrols operating along the Coast, bringing not only enjoyable snacks to the men but entertainment as well.

Fort Eustis

BRIGADIER GENERAL FORREST E. WILLIFORD, *Commanding*

By Lieutenant John O. Looney

This Antiaircraft Replacement Training Center has been a beehive of activity during the past two months, with the basic training schedule moving along at a fast clip and the recreation and athletic programs going at full blast.

Highlight of the period were the ceremonies held here in observance of Flag Day. A speakers' stand was erected in front of Post Headquarters, and across the street benches were placed to accommodate several thousand guests who came from all parts of the Peninsula to attend the program. Troops of the Post stood in mass formation in the park directly behind the spectators.

As a salute to the United Nations flags of the then twenty-seven United Nations, in addition to ours, were raised during the ceremonies, with Old Glory flying above all. Dr. William Warner Moss, Jr., professor of government at the College of William and Mary in Virginia, was the main speaker. Music for the occasion was furnished by the white and colored bands, and a sixteen-voice male chorus. The entire program was broadcast through the facilities of radio station WGH of Newport News.

Tactical training convoys to colonial Williamsburg as part of citizenship educational training for the enlisted personnel of this Post are being conducted six days a week.

This program of convoys began on May 18th and has continued uninterrupted since that time. The personnel of one battery are taken on this tour each day. All batteries in each of the battalions will be taken in order until all have made the trip. Due to the fast turnover of men here, by the time all batteries have been taken care of, new trainees will be here and the tour will be repeated in each of these batteries.

These tactical training convoys were begun at the suggestion of Kenneth Chorley, president of Colonial Williamsburg, Inc. He suggested to General Williford that an opportunity be given the soldiers of his command to get a clearer conception of just why we are in this war and what we are fighting to preserve. This, he thought, could be accomplished by an educational tour of the nation's historical background as offered by the restoration of colonial Williamsburg.

The men are given a lecture of approximately a half hour in length on the historical background of the surrounding area. The lecture is supplemented by motion pictures and colored slides. Afterwards, the men are taken on a tour of nine of the historic spots in Williamsburg.

In recognition of thirty-one years' service in the United States Army, First Sergeant Russell T. Morton, of one of the colored battalions at Fort Eustis, was honored by a review of the troops of his battalion on May 7th. Attending the review were General Williford and Lieutenant Colonel Kenneth W. Foster, commanding Sergeant Morton's battalion.

Sergeant Morton was placed on the retired list effective April 30th, and was ordered back to active duty May 1st, thereby serving as his own replacement. He was cited "For meritorious and unselfish service to his country as a soldier in the United States Army for a period of thirty-one years."

Another Chemical Warfare School was started recently and will run for eight weeks.

This is the seventh such school held here since June, 1941, and is for commissioned and noncommissioned officers. On completion of the course, these men will return to their units as gas officers to train the enlisted men on defense against gas attacks.

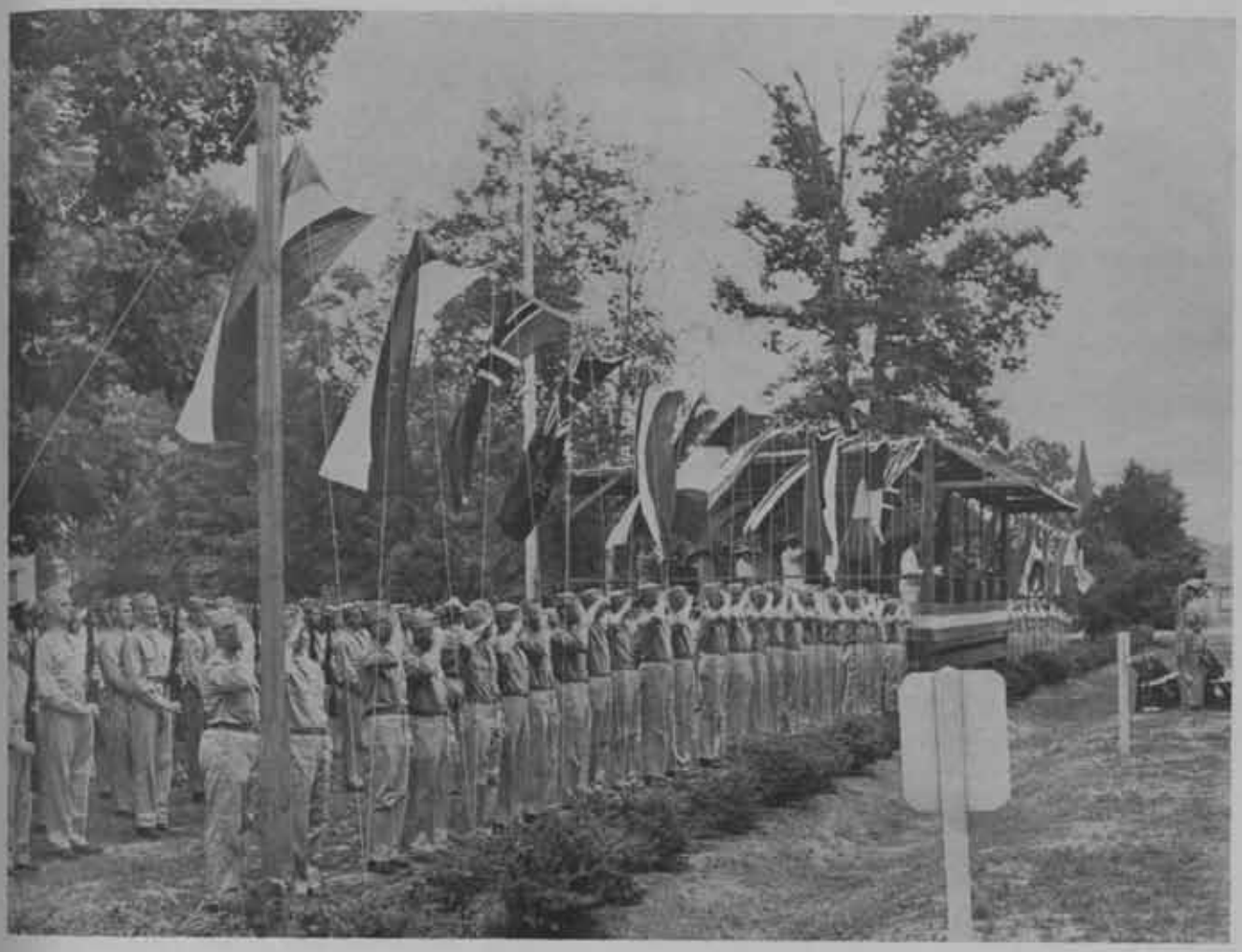
The Fort Eustis Chapter of the V.P.I. Alumni Association recently gained the honor of having more members to contribute to the 1942 alumni fund than any other chapter of equal size.

The Fort Eustis Chapter was organized last summer, and since that time has met at irregular intervals whenever the men were able to get together. A good number of the officers on this Post are graduates of Virginia Tech.

Private First Class John C. Redmond, Jr., was the first man at this Post to become a life member of the Army Emergency Relief Association by turning in his check for $100 recently.

Life membership in the association is given those who contribute as much as $100 or more, while those subscribing a smaller amount are members at large. The Army Emergency Relief Association was organized early this year at the direction of the Secretary of War, and is designed for the benefit of the entire Army personnel and their dependents.

Major William Maisch, War Bond Officer at Fort Eustis, described the sale of war saving bonds to offi-



Flags of the United Nations at Fort Eustis on Flag Day. *Photo by Sergeant Charles W. Hart*

cers and enlisted men of the Army in a special broadcast over radio station WGH, of Newport News, on June 3d.

Also on this program were Chaplain Lawrence D. Graves, who was the first man at this Post to subscribe to a war bond under the new pay reservation plan, and Lieutenant H. C. Owens, Commanding the Colored Quartermaster Detachment, the first large unit here to subscribe 100 per cent in the war bond drive.

Six hundred twenty enlisted men from Fort Eustis were entertained at a May Day dance sponsored by the College of William and Mary on May 1st. The dance was held on the campus.

Two hundred of the enlisted men were given partner bids, and upon arriving at the gymnasium were taken to the boxes where they were introduced to the girls, all of whom were students of the college.

Thousands of mothers of Fort Eustis soldiers received Mothers' Day cards with a military air this year. Cards and envelopes were given with the compliments of Fort Eustis, to the personnel of this Post for use in observance of this occasion.

From the sports angle, softball and ping pong have been taking the limelight. The ping-pong outfit trounced the Coast Artillery club in Newport News May 6th by a 6 to 1 margin. Then on May 21st it paid a visit to Langley Field for a return match with the airmen, and again was victorious by a score of 4 to 3. This was the second straight match they had taken over their opponents by a similar count.

Two softball leagues, the "National" and the "American," were formed in the middle of May and have been rocking merrily along. The National consists of eight teams, while there are but five in the American loop. Clubs in both leagues have been waging a hot battle for top honors in the first half of the split season which ends early in July.

The Coast Artillery School

BRIGADIER GENERAL LAWRENCE B. WEEKS, *Commandant*

Officers and students of the Coast Artillery School at Fort Monroe had as guest speakers during the past month three distinguished visitors. Their lectures covered the entire world-wide theater of operations.

Colonel Francis G. Brink of the General Staff Corps, USA, was the first speaker on the lecture schedule, and brought to the audience up-to-the-minute news and first-hand information on the various campaigns throughout the Southwest Pacific War Zone. His talk covered the defense in the Malayan Peninsula and of India, with side lights on the activity carried on at the Australian, Javanese, and Burmese fronts.

Colonel Leslie K. Lockhart of the British Army and at present a member of the British Purchasing Commission at Washington, D. C., was the second to appear on the program. His narration of the alternating Italian and German attacks on historic Valetta on the Island of Malta was well received.

Lieutenant Colonel Warren J. Clear of the General Staff Corps, USA, a member of General MacArthur's staff, was the latest speaker to appear at the school auditorium. His topic of discussion centered around the warfare activities on the Bataan Peninsula and the air raids on Honolulu, and Port Darwin. He cited many instances illustrating the morale and fighting spirit of the Coast Artillerymen that engaged the Japanese.

The normal activities of the Coast Artillery School continued on uninterrupted schedule with graduation exercises being held on May 29th for a group of students of the Battery Officers' Course. After the certificates of proficiency had been presented by Brigadier General Lawrence B. Weeks, the School Commandant, many of the officers were assigned for duty to the staff and faculty of the Coast Artillery School. Other officers returned to their home stations and the remainder of the previously unassigned graduates were placed in the Replacement Pool.

Another group started the following week in the same type of Battery Officers' Course. Included in this group is a Cuban Officer, First Lieutenant Eulogio Cantillo, who came to Fort Monroe from his home station at La Cubana Fortress in Havana.

A group of officers taking the course in Submarine Mining graduated on June 27 and were given their diplomas by Colonel Delmar Lenzner. Another group is

It happened in Hollywood: Training film on the way.

scheduled to start their course on July 20. Meanwhile, the Warrant Officers continued their studies of the Army Mine Planter Service.

The Department of Enlisted Specialists continues to turn out highly trained enlisted men eligible for appointments as staff sergeants in their many duties in the Coast Artillery.

The number of students in the Electrical Course is being increased. After the first six weeks of instruction in Electricity, this class is divided into two groups; one group will specialize as Harbor Defense Electricians for the remaining six weeks and the other group will specialize in the study of Maintenance and Operation of the Data Computor. A short course on Diesel Engines has been included in the instruction of the Harbor Defense Electricians; this additional subject is necessary due to the increasing use of diesel engines in harbor defenses. Ten of the best qualified, unassigned graduates of the Harbor Defense Electricians Course have been selected to attend a ten weeks course in Submarine Mine Maintenance.

The Master Gunners Course graduates students every three months.

The Radio Communication Course also graduates students every three months. This course stresses practical laboratory tests and the maintenance of radio communication sets.

The Automotive Course graduates a group of students every three months. The operation and maintenance of tractors and the study of diesel engines has recently been made a part of this course. Stress is laid on practical work and the location and correction of faults in all types of internal combustion engines and automotive vehicles.

In the Coast Artillery Officer Candidate School increased emphasis has been placed on mathematics and seacoast artillery. In the physical training period the candidates have been introduced to an obstacle course as a regular part of their curriculum.

The first class to graduate at Fort Monroe this year in Coast Artillery received their commissions from the Commandant of the Coast Artillery School, Brigadier General L. B. Weeks, on July 10.

One of the candidates taking the course is First Sergeant Eugene Cox, wearer of the Order of Purple Heart, received for being wounded at Pearl Harbor on last December 7. His home is Montgomery, Alabama, and he originally enlisted in the Infantry Arm of the Regular Army in June, 1939, transferring to the Air Corps and then to the Coast Artillery Officer Candidate School.

The school auditorium in Murray Hall has had a welcome addition with the installation of two new Simplex 35mm motion picture projectors and the latest type of projection screen. The projection booth had to be entirely rebuilt and enlarged. This now enables the students of both the Battery Officers' Course and the Officer Candidate School to view the latest in training films and bulletins without disturbing the normal operation of the post theatre.

Newfoundland

By Major Robert J. Wood

Since the last issue of the JOURNAL, things have progressed in this rock-bound but friendly island.

For one thing, a mild spring has enabled construction to go on apace, so that the District Engineer has been able to turn over many structures for the use of the troops. While the natives maintain that summer will come, and military personnel agree that summer *will* come—about the 4th of July—and be gone about the 5th of the same month, the weather has been favorable. Manning gun positions has been much more enjoyable than it was in January and February.

Coast Artillery units in Newfoundland continue to be on the alert twenty-four hours a day. At the same time, some of the men each day find time for athletics and other amusements. At the isolated stations, the War Department has approved the showing of 16mm films —not just training films, but Grade A current movies—as one means of entertainment. That they are well-received goes without saying. USO Camp Shows continue to visit Newfoundland and always make a point of insuring that each soldier has the opportunity of seeing each presentation at least once.

The completion of gymnasiums at the various stations afforded Coast Artillery basketballers an opportunity to get in their stride before the winter was over. In a final tournament at St. John's, in May (it was still pretty cold in May!) the Coast Artillery and Infantry teams were the finalists with the Coast Artillery coming out on top for the championship—not only of the military units but of all civilian teams in Newfoundland as well. A suitable trophy, presented by the St. John's *Daily News* was awarded the winning team.

As has probably been noticed elsewhere, war has brought a more serious interest in target practice and in general, better results than were known in peacetime years. Preparations are carefully made, drills and subcaliber or prelminary practices carefully analyzed and results made to speak for themselves. All firing, of

A cozy corner at the USO.

course, is done as though the target were an actual enemy hurling his own explosives, and not even the gunners on Corregidor took more careful aim or computed more accurate data.

Coast Artillerymen remember Corregidor, and those officers and men in Newfoundland who have served in the Philippines are the most eager to get a chance to avenge its loss.

The USO club in St. John's remains a popular gathering spot for men off duty. The people of the Newfoundland capital city have done their best to take the place of an American community and present a "home" atmosphere at the Club Building.

Recently there was staged a ceremony of "commissioning" local girls as "officers" in the "Hostess Army." Thirty girls, from among the many who volunteered, were selected to be "Captains," and "Lieutenants" At a formal ceremony the Commanding General, Newfoundland Base Command, made a speech, the Base Adjutant awarded certificates and read the "oaths," and the Aide-de-Camp presented each girl with an insignia of office—not forgetting an appropriate kiss!

Thereafter, the enlisted men and their girl friends danced to the music of the Fort Pepperrell orchestra.

Dances are popular at the USO, but the restaurant, the bowling alley, the library and the pool table continue to draw crowds. One of the new director's importations was a machine for making personal phonograph records which can be sent back to the States as living letters for Pop and Mom. It is always busy.

June 14th marked a big day in St. John's. Flag Day of the United States, it became by adoption Flag Day of the United Nations. The natives of Newfoundland are given to outdoor walking and to watching parades. On this day they turned out, to the last child, to witness the largest military contingent St. John's has ever seen at one time.

The formation consisted of, in this order:

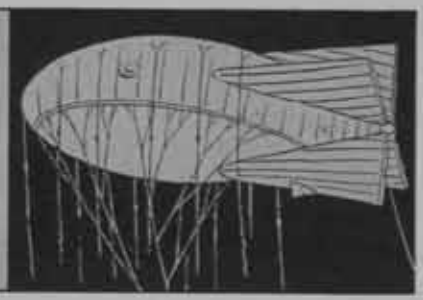
United States Troops; Newfoundland Militia; British Royal Navy; Royal Canadian Navy; Royal Merchant Navy; Royal Canadian Army Troops; Royal Canadian Air Force; Civil Defense Organization; Salvation Army Units.

In addition to the marching soldiers, sailors and air force troops, the air raid wardens of the Civil Defense Organization and the Salvation Army, there were bands from United States forces, Canadian army and navy forces, and civilian sources, including one Scotch Bagpipe outfit and the junior military band of the Church Lads' Brigade.

Troops received cheers all along the line of march. Their appearance could not but affirm the faith of all who watched in the strength of the United Nations. Coast Artillery troops marched as infantry with their comrades in other branches. They presented the creditable appearance for which they are justly famed.

Flag Day Parade at St. Johns.

Camp Tyson



BRIGADIER GENERAL JOHN B. MAYNARD, *Commanding*
Barrage Balloon Training Center

In the Barrage Balloon Training Center at Camp Tyson, every phase of balloon operation and flying has its own particular training course and a corps of instructors in the Barrage Balloon School. When new students arrive, their classification cards are checked for any previous experiences that would be of any benefit to them in a particular course at the School. For instance, men with crane and winch experience would be assigned to the winch course. Others are assigned to such courses as the gas, weather, maneuver, etc.

Another class of officers and of enlisted technicians have just recently been graduated from the school. General Maynard made the graduation address to this class on June 13th, and a new class was started on June 15th.

When a new Barrage Balloon Battalion is activated, a few key officers and men are transferred to it from other battalions for administrative purposes. Then the officers and men just graduated from the schools are assigned to such new battalions forming a smooth-working training cadre. In this way, no time is lost in organization after the new men are assigned.

Flight Lieutenant F. L. Bradshaw of the RAF has been attached to the Barrage Balloon School for the past few weeks as an instructor and lecturer. Lieutenant Bradshaw has had a great amount of experience with barrage balloons under battle conditions. The practical demonstration of this experience has proven invaluable in the barrage balloon instruction here.

Major General Richard C. Moore of the Army Ground Forces, Washington, D. C., accompanied by Lieutenant Colonel Richardson, made an inspection of Camp Tyson on June 23d and 24th for the purpose of determining the adequacy of matériel and to check on the shipment of supplies. While here they were the guests of General Maynard, and on both days, balloon barrage demonstrations were conducted. It was an inspiring sight to see the balloons dotting the sky in every direction and at all elevations, high, medium and low.

Camp Tyson is off the beaten path and no cities of any size are near, resulting in more difficulties in obtaining amusement and entertainment for the command than in many other posts over the country. However, the Service Club by dint of tireless effort has managed to hold at least one dance each week, inviting the young ladies from the near-by towns. In this endeavor, they have had the heartiest support of the citizens.

Now, however, Camp Tyson is getting some of the better USO outdoor shows. Such shows as the Camel Caravan, Noble Sissle's *Keep Shuffling* and the Hollywood Follies have shown at Camp Tyson. Also Lanny Ross and Miss Edisde Phillippe made an appearance at the Post Theater on June 26th.

The USO Soldier's Center in Paris, Tennessee, has been under construction for some time and will be dedicated on July 4th. Paris is only seven miles from Camp Tyson and this USO Center is expected to contribute greatly to the entertainment of the soldiers.

The Barrage Balloon Training Center was featured in a spot on the June 21st program of the Army Hour. This program was broadcast from one of the balloon sites and the announcer interviewed the balloon chief while the crew maneuvered the balloon. Camp Tyson also has regularly-scheduled musical programs broadcast from the Service Club over WSM at Memphis, Tennessee, and WPAD at Paducah, Kentucky.

Chesapeake Bay Sector

BRIGADIER GENERAL ROLLIN L. TILTON, *Commanding*

By Lieutenant Colonel James B. Anderson, Jr.

A continuous change of personnel can rightly be considered a normal incident to the Army during wartime, and the Chesapeake Bay Sector is no exception. Brigadier General David G. Hardy has been transferred from command of the Harbor Defenses of Chesapeake Bay to another post and is succeeded by Colonel Wilmer S. Phillips. A reception, held at the Officers' Club at Fort Story in honor of General and Mrs. Hardy, marked the conclusion of his tour of duty.

High training and combat efficiency is the goal of all troops of the Chesapeake Bay Sector. From the most recent recruit to the highest commanding officer, every thought and action is aimed toward the development of the "military value" of the individual and the perfection of the united efforts of the teams. To help achieve this end, obstacle courses have been constructed at all the forts. Daily on these proving grounds, the physical stamina of the individual is challenged. This method of promoting hardihood and courage is already paying high dividends.

Training in guerrilla warfare tactics and preparation for target practice firing have highlighted the activities of this command, and the men entered into it with zest and enthusiasm unsurpassed. One battery completed a highly successful calibration firing during the month of June, and two others are now preparing for functional firing.

Early in June, some of the enlisted personnel of Fort Story had its courage and physical fitness put to a real test as the post thrilled at the intelligent rescue of Private Samuel B. Morris, III, from the waters of the Atlantic by Staff Sergeant Edward A. Arnold, Private First Class Edward P. Kiernan, Jr., Private Samuel Roberts, and Private Irving T. Ronis. These four soldiers, each in turn towing Morris who had become exhausted from swimming against a swift current, relayed him to the shore and safety.

At Fort Macon, old bayonet courses have been revived and are now in daily use. Batteries have constructed rifle ranges locally; the constant use of which has produced a steady improvement in marksmanship. Hikes over the sand dunes put forth a real challenge to endurance under adverse conditions. Alarms of landing from submarines alert the beach patrols at night with the real possibility of an encounter with the enemy from the depths.

A new and previously untried method of unloading 30,000-pound 155mm guns from railroad freight cars was carried out at Camp Pendleton by a coast artillery unit which used the Army's new heavy M-1 tractor to do the job with more safety to personnel. Previously the guns were allowed to run down the railroad siding

Fire at Fort Monroe.

plank, creating a safety hazard because of the possibility of their sliding off and endangering the men who help to unload them from the freight car. By this new method, developed under the direction of Major Bernard E. Conway, the unit's plans and training officer, the tractor runs through the side door of the freight car and lets the gun down the plank by a winch and cable, thus keeping it under control. The tractor then comes out of the car, around to the gun, and takes it in tow to its destination.

The post-office personnel at Camp Pendleton were rather startled one day when a $21.00-a-month-private walked into the post office, plunked $750.00 in cash down at the window and said, "Gimme a $1,000 War Bond." According to the bond officer of the post, more than $12,000 worth of bonds were subscribed under the pay-reservation plan during the first week of the drive at Camp Pendleton. The private who bought the thousand-dollar bond paid for it with insurance money that he received when his brother was killed on a torpedoed ship.

Since the arrival of the two railway machine shop cars at Fort Monroe during the month of April, the men of the local Ordnance Company have been receiving training as machinists and welders within the cars. In addition, much valuable experience is now being gained by working on the large guns of the harbor defenses, and by doing modification work on the 155mm. These men, besides being given the best possible training technically, are being trained tactically also. Instructions in the firing of the cal. .30 rifle and cal. .45 automatic pistol are being given them on the rifle range.

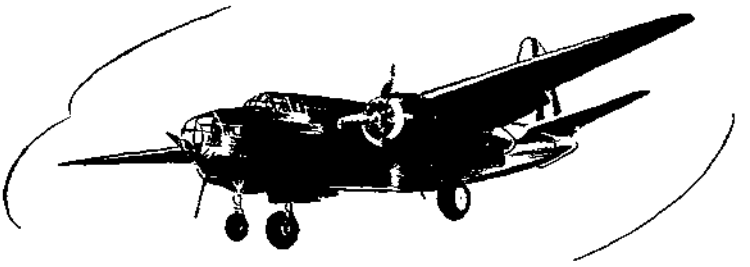
The activities of Fort Story have recently been extended by the acquisition of about 900 additional acres, affording much-needed space for expansion of facilities and simplifying many of the post problems.

The boxing team of Camp Pendleton proved its skill at the Third Corps Area boxing tournament at Fort George G. Meade, Maryland, as it took first place in the tournament.

Fort Monroe had its first fire of any consequence in many years, as the military police barracks caught fire last month and resulted in considerable damage. The cause of the fire is undetermined, and an investigation is now in progress.

Major Alvin Caldwell, Chesapeake Bay Sector Chemical Warfare Officer, has invented a model air-raid shelter which is completely gas-proof. The model is now being used to instruct both military and civilian classes. It contains a scale model collective protector, a device for supplying a constant flow of purified air to the interior. The air-intake may be located at some distance, if necessary. A full-size shelter of this type would be designed for twenty persons.

The most interesting training of the sector command as a whole lies in the field of tactical dispositions and use of communications. Due to the necessary safeguarding of military information, publicity thereon is not advisable, but it is a mild tribute to the sector command to say that whoever attempts to try the issue with it in any medium or dimension will know he has been in a ball game before the proceeding is finished.



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The Armed Forces

Grrrrr!

GET TOUGH. By Captain W. E. Fairbairn. New York: D. Appleton-Century Company, 1942. 121 Pages; Illustrated. $1.00.

The news releases on the British commandos have emphasized that these men are trained to meet a tough, nasty, dirty foe and beat him at his own game in individual fighting. They do not accomplish their missions with superior fire power or superior man power, but with superior man-to-man power. They are men who delight in hand-to-hand fighting because they know their training has assured them a better-than-even chance. The author of this little handbook of mayhem helped to train these commandos.

Captain Fairbairn learned his man-to-man fighting as a police officer in Shanghai, where policemen were either tough or dead. Fairbairn was tough. He knows his subject—how to fight man-to-man with no weapons, or with a knife.

We are fighting enemies who are not noted for the qualities of mercy or sportsmanship. To cope with them we must fight according to the rules they have set up, and fight better. Any man who reads the text of this book, studies the illustrations, and then practices what they teach, should hold his own with either Hitler's or Hirohito's boys when the question is not which is the best army, but who is the best man. There is not a word wasted in the text; there is not a line wasted in the illustrations. How to break holds, how to take holds, how to disarm the enemy, effective blows, the use of knives and smatchets; it's all here in cold, merciless print. The soldier who reads this book and practices the things it describes should be able to hold his own with any of the Axis bully-boys.

This is not a nice book. But then, war is not nice. The thinking soldier would rather be a live infighter than a dead sportsman. For the man who believes that war is a matter of killing, and that it is better to kill than to be killed, this is it. Which veins or arteries to sever with a knife, how to break the back of an opponent (or his arms or his legs or his neck, take your choice), how to tie him up for further reference, how to make him wish he never stuck a pistol in your back—it's all here, and it's easy to understand.

Enemy Aircraft

WAR PLANES OF THE AXIS. By David C. Cooke. New York: Robert M. McBride and Company, 1942. 256 Pages; Illustrated. $2.75.

More than 200 photographs accompany the descriptions of Axis planes in this book. In addition to the pictures and the description of individual planes, the author has included general discussions of the planes of each of the Axis nations and of each classification of planes.

On the whole Mr. Cooke has done a very workmanlike job. Although this book is not to be confused with a book on identification of aircraft, it is still of much interest to the antiaircrafter. It tells of the capabilities and the tactics of our enemies' planes, and tells it in a manner that is clear and concise, as well as complete.

Stalking Nazis in England

THE HOME GUARD FIELDCRAFT MANUAL. By Captain John Langdon-Davies. Brooklyn: Chemical Publishing Company, Inc., 1942. 167 Pages; Index; Illustrated. $2.50.

Fieldcraft is an art which combines the knowledge of many of the features of stalking, hunting, camouflage and the building of field fortifications. We might call it Boy Scouting with a purpose far from philanthropical. The British, for two years under the threat of an invasion from the Continent, take their Home Guards seriously, and the portion of the Home Guard training that comes under the heading of Fieldcraft is every bit as important as training in weapons and tactics.

Captain Davies has done very well with a difficult subject.

Rattlesnakes of the Sea

THE SUBMARINE AT WAR. By A. M. Low. New York: Sheridan House, 1942. 305 Pages; Illustrated. $3.00.

Professor Low, author of the popular *Mine and Country mine*, has written a particularly timely study of the submarine in history and in the present. The author seems to take particular delight in puncturing the dearly-held

conceptions of the capabilities and uses of the submarine, both in commerce and war.

The book treats of defense against submarines, relates many an anecdote of submarine warfare from official files and elsewhere, and on the whole, gives the reader a fine understanding of this form of warfare. Most of us do not realize the limitations and difficulties that lower the effectiveness of the submarine, neither do we realize how effective it may be in many situations. Particularly interesting is the discussion of the different types of underwater vessels, and why they were developed and how they work. The British subs that mounted 12-inch guns, the German mine-layers, and the French plane-carrying submarines are discussed at length.

Professor Low uses several pages in discussion of the humanity or lack of it in submarine warfare—his conclusion is that a torpedo from beneath the surface is no worse than a shell from a battleship; both cause destruction and death, and that is the purpose of war.

Pistols for Action

SHOOTING TO LIVE. By W. E. Fairbairn and E. A. Sykes. Edinburgh (Scotland): Oliver Boyd Limited, 1942. 96 Pages; Illustrated. 2/6.

The authors of this pocket-size work are both former officers of the Shanghai Municipal Police, and have learned their subject in a hard and dangerous school. The statistics for twelve and one-half years concerning encounters in which pistols were used by policemen indicate that over that period forty-two police were killed as against 260 criminals, and that 100 policemen were wounded as against 193 criminals. The authors quote these figures as bearing out the efficacy of the Shanghai Police training methods.

The nub of the book is that shooting of this type will be done at such close ranges that it will be hard for a man with any training to miss, and that therefore *speed* in getting off the first *two* shots is the important factor. Elaborate sighting and aiming procedures are out—there will be no time for that sort of thing.

Conventional target practices, with slow fire and bull's-eyes, is more harmful than helpful for the police type of shooting, the authors insist. They believe in specially designed ranges that offer the shooter surprise and motion, to get him in the habit of thinking fast, shooting quickly, and hitting first.

Juice for Beginners

GETTING ACQUAINTED WITH ELECTRICITY. By Alfred Morgan. New York: D. Appleton-Century Company, 1942. 337 Pages; Index; Illustrated. $3.00.

The beginner in electricity, whether he be a homeowner wondering why the electric iron won't heat, or a soldier who can splice a broken wire but doesn't quite get the idea behind a condenser, will find this a valuable text for learning more about the subject. Written in simple language, illustrated with drawings that tell the story in a few lines, and following a logical outline of development, the book explains the theory of electricity without mathematics and without pain. A patient tutor could do no better.

Gold Bars and Budgets

PERSONAL FINANCE AND MANAGEMENT FOR THE ARMY OFFICER. By Charles R. Hutchinson. New York: D. Appleton-Century Company, 1942. 179 Pages; Index; Illustrated. $1.50.

Slanted particularly at the young officer, and more particularly at the young officer of the Regular establishment, this book carries valuable information on the subjects of budgeting, saving, buying, investing, taxes, and many other subjects that affect the financial well-being of an army officer. Colonel Hutchinson has done a fine job of keeping abreast of late developments as they affect the problem, although the new pay bill was passed after this book was written.

Military Math

SPHERICAL TRIGONOMETRY WITH NAVAL AND MILITARY APPLICATIONS. By Kells, Kern, and Bland. New York: McGraw-Hill Book Company, 1942. 163 Pages; Illustrated. $1.50.

Although this text is of much more value to the naval officer than to the soldier, there are instances in Coast Artillery when a knowledge of spherical trig is useful.

The book starts out with a fairly complete discussion of logarithms, followed by a short review of plane trigonometry.

There is little deadwood in the book. It is clearly written, well-illustrated, and sticks rather closely to the practical applications, emphasizing navigation both at sea and in the air. The problems, aside from the purely theoretical ones, are based on situations which might actually arise, giving an air of reality to the instruction.

Biography

Versatile Revolutionary

PAUL REVERE AND THE WORLD HE LIVED IN. By Esther Forbes. Boston: Houghton Mifflin Company, 1942. 490 Pages; Index; Illustrated. $3.75.

Esther Forbes' earlier books were novels with a historical background—this present book is straight history, with just enough reconstruction of minor events and conversation to give the work the flavor of authentic participation.

The Forbes' Paul Revere is truly a versatile man. A first-rank metal-worker who explored every angle of his craft, from mug-making to engraving plates for currency, he was also a patriot and a soldier. He made powder and commanded an artillery regiment—on the whole his work for the revolution was as many-sided as it was effective. And he made many more rides than the one which romantic history has garbled so in the telling—all of them for the cause of liberty. Revere risked not only his life time after time, but the well-being of his family, to which he was devoted. As a budding industrialist, the safer course would have been to soft-pedal his political leanings until he saw which way the wind was blowing, but that was not the way of Paul Revere.

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Revere died May 10, 1818, having lived to see the healthy beginnings of the nation he helped to found by his work for liberty, his ready acceptance of the less spectacular forms of danger, and his contributions to its industrial growth.

The book is valuable, not only as a biography of a little-understood (if well-known) patriot, but as a detailed picture of the New England of the late eighteenth and early nineteenth centuries.

MacArthur at Bataan

MEN ON BATAAN. By John Hersey. New York: Alfred A. Knopf, 1942. 313 Pages; $2.50.

After wading through hundreds of pages of drivel and emotional outpourings about General MacArthur, the reviewer has found *the* book on MacArthur and Bataan. Here is a biography written by a writer who is a master craftsman in writing as well as a historian of rare judgment.

Hersey's MacArthur is not a haloed legend, but a human being, a superb soldier, and a brilliant man. The author wastes no words in building a story-book hero; he writes of a man who makes mistakes, who receives criticism and a certain amount of ridicule, but who wins battles on the battlefield and in the halls of government, and who has won the devotion of the men who have served with him. It is no service to General MacArthur to set him up as a god who can do no wrong; mistakes will be made, conditions will change, and even MacArthur cannot pull a miracle out of the hat every time a miracle is needed.

Hersey's literary style makes effective use of flashbacks; each event on Bataan is tied to an event in MacArthur's long military career in a manner that makes for interesting, almost exciting, reading. The easy conversational tone of the book is, at Hersey's hands, a device for making the reader believe for a moment that he is seeing the event, or talking to the man who is relating it.

On page after page, the author mentions a name of a man on Bataan, and then almost as an afterthought, says, "I think you ought to meet the captain in charge of this battery," or "The lieutenant on the range-finding apparatus was Lester Roy Peterie, from Kinsley, Kansas," and goes on to tell some intimate item from the earlier life of the man, and the kind of soldier he is.

Men on Bataan is a superior biography of General MacArthur and one of the best non-technical accounts of the fighting on Bataan.

A Soldier Writes

MacARTHUR ON WAR. Edited by Frank C. Waldrop. New York: Duell, Sloan and Pierce, Inc., 1942. 417 Pages; Illustrated. $3.00.

Mr. Waldrop has taken speeches, annual reports of the Chief of Staff, and other works by General MacArthur and combined them into a book that might well be read by every officer. The editor's comments to the general's writings, while well-done and apt, are too heavily flavored with dogmatism to be entirely convincing to any but the most superficial reader; a more restrained tone would have been more in keeping with General MacArthur's own style which loses no effectiveness by restraint.

As we read the general's reports to Congress and the nation, we are impressed with his foresight as to the type of war we are now fighting, as well as his courageous struggle against the very complacency and misguided economy that hamstrung the army during the depression years. Particularly noteworthy is MacArthur's self-control and ability to think on his feet while being heckled during hearings on appropriation bills. A lesser man might have lost his temper and been tricked into statements damaging to the cause for which he fought, but General MacArthur knew what the Army needed and sublimated every personal consideration to his heart-breaking efforts to keep an effective army in being regardless of politicians and military faddists.

Many of the arguments of self-appointed military experts, arguments that even today are taking up space in the public prints and lessening public confidence in the efficacy of our war effort, were answered logically and fully by General MacArthur in his annual reports. The questions of army pay, a separate air force, the interceptor commands and the GHQ air force, mechanization and motorization, training of the civilian components, and Army participation in the CCC, among others, are considered in these reports in language that permits of no doubt as to how the then Chief of Staff felt about the subjects, and why he felt that way.

In addition to the restrained logic of the annual reports, in much of General MacArthur's writing there is beauty of language and trenchant phraseology that marks him as a master of words, as well as of things military. Perhaps his literary changes of pace go along with his military accomplishments; both require the ability to estimate the situation and then take the proper action.

The General

GENERAL DOUGLAS MacARTHUR: FIGHTER FOR FREEDOM. By Francis Trevelyan Miller. Philadelphia: The John C. Winston Company, 1942. 278 Pages; Illustrated. $1.35.

Mr. Miller has reached the market with one of the first of a threatened flood of biographies of General MacArthur. This particular life story of the general is the result of a lot of painstaking research and reporting. Although the reviewer cannot personally vouch for the authenticity of the incidents portrayed, the type of research Mr. Miller pursued should be an indication that his facts must be correct. The style of writing, however, seems directed at an audience that is, if not immature, ungrounded in military matters.

Sea Dog—Old School

THE TRAGIC CAREER OF COMMODORE JAMES BARRON. By Paul Barron Watson. New York: Coward-McCann, Inc., 1942. 84 Pages; $1.50.

The feud between Commodore Barron and Stephen Decatur has been one of the favorite subjects of American history for many years. In most of the versions, the sympathy has been with Decatur, who was killed by Barron in a duel at Bladensburg, Maryland, 1820.

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As Mr. Watson points out, however, Barron was absolved of all the charges against him by a Navy court in 1821. The charges began with Commodore Barron's defeat in the *Chesapeake* in 1807, and were added to in the years following as Barron's course of action displeased high officers of the Navy while he, on the inactive list, made a living as best he could in foreign waters and on foreign shores.

✓ ✓ ✓

Russian Front

RUSSIANS DON'T SURRENDER. By Alexander Poliakov. New York: E. P. Dutton and Company, 1942. 191 Pages; Illustrated. $2.50.

It is always difficult to be sure of a book written in a foreign language, whether the things that seem peculiar to an American are so vastly different, or merely translated too literally. For instance, let's take these few lines:

"'Good work! Who knocked out so many?' I asked Popov.

"The senior lieutenant kept his eyes fixed on the distant edge of the woods from which the next group of Fascist tanks could be expected to emerge. His dark face was glowing with the excitement of battle.

"'We count collectively,' he replied without turning."

Putting it into American, we have:

"'Nice going, boys! Who laid them out like that?' I asked Popov.

"The senior lieutenant kept his eyes fixed on the distant edge of the woods from which the next group of Jerry tanks could be expected to emerge. His dark face was glowing with the excitement of battle.

"'*We* did; no prima donnas on *this* team,' he replied without turning."

Americans would have much less trouble undertsanding our Russian allies if the translators of the Russian writers would attempt to show that the Russian, as a man, is not so vastly different from the American and as a soldier, is almost the same. It seems to be a matter of language, rather than of thought. Digging deeper than the translator's surface, in this book we find that except for the language difference, and a slight Russian flare for the dramatic, John Soldier would fit right into a Russian formation.

Poliakov, a Russian war correspondent (in the Russian army the correspondents are also soldiers) was with a self-contained unit of combined arms, amounting to probably about a regiment, that was surrounded by the Germans early in the war. The unit then began guerrilla warfare behind the German lines. Hiding by day, fighting by night, and harassing the Germans at all times, the Soviets made a sweep paralleling the German lines and finally broke through to their own lines.

The high point of the account is the story of the unit getting between two German units on parallel roads, and opening fire on each German column in turn. The Germans, reading their maps, figured the Reds were on the other road and opened fire. While both German columns plastered each other with everything in the book, the Russians moved between them and crossed the route of one of the German columns.

On the whole, the book is interesting from a military standpoint, both as a study of tactics and leadership, as well as being a gripping story.

Camera and Typewriter in Russia

SHOOTING THE RUSSIAN WAR. By Margaret Bourke-White. New York: Simon and Schuster, 1942. 287 Pages; Glossary; Appendix; Illustrated. $2.75.

Margaret Bourke-White's reputation in photography needs no mention in this review—she is one of the best in the United States, and probably the best in the field of industrial photography. This book indicates that she is a reporter, too, with a good sense of discrimination in her subjects. With no attempt at sensationalism she has given us her impressions of Russia and the Russians in wartime. She finds Russia interesting and the Russians likeable, realistically patriotic, and determined to preserve their way of life.

The pictures that illustrate the book vary between breath-taking shots of night antiaircraft action to the usual portraits of Russian officials.

Magnitogorsk

BEHIND THE URALS. By John Scott. Boston: Houghton Mifflin Company, 1942. 279 Pages; $2.75.

Magnitogorsk has been more and more in the news, as one of the main seats of Russian industry behind the Urals—insurance that Russia will still have the tools of war even if the Germans reach these elusive mountains. John Scott helped build Magnitogorsk, and then helped operate the city's industries, living with the Russians and marrying a Russian girl.

Scott graduated from the University of Wisconsin in 1931, at a time when college graduates were lucky if they could find work even in filling stations. Feeling that since work was so slow here it was a good time to give in to his wanderlust, he went to Russia as a laborer, rather than as a specially imported engineer expert. He lived in Magnitogorsk and helped build it, went to the Soviet schools for adults, and in general lived as a Russian.

The tale Scott tells is probably as close to objective reporting as anything that has come out of Russia. He had no axes to grind when he went in, and he attempted to live as a Russian while he was there. He learned to admire the Russian's spirit of achievement, he pulls no punches in his analysis of their ineffectual attempts at industrial organization, and he attempts to give a fair appraisal of the drawbacks as well as the advantages of the Russian version of communism.

The theme that recurs throughout the book is the Russian's determination to span several centuries of progress in a very few years, regardless of the cost in lives, living conditions, or individual rights. The Russians lived their work—nothing mattered so much as construction and production. Poor administration and poor organization, the result of inexperience and political considerations, hampered progress in a heartbreaking manner, but the work pushed on.

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The outstanding feature of the book, aside from its presumably true picture of life in Russia and the country's drive toward the machine age, is Scott's obvious attempt to report fairly and truly, without bias in either direction.

Soldiers of the Soviet

RUSSIA'S FIGHTING FORCES. By Captain Sergei Kournakoff. New York: Duell, Sloan and Pierce, 1942. 259 Pages. $2.50.

Captain Kournakoff, a former Czarist officer who fought the Communists for three years before coming to the United States, goes all out in his praise of his former enemies. Surprisingly, he indicates that the political and economic system in Russia since 1917 is largely responsible for the effectiveness of the Red armies in the war with Germany. The leveling of the social barriers between officers and men and the introduction of political commissars have had a beneficial effect on the fighting qualities of the army, according to Captain Kournakoff.

The author makes the point, regarding the Finnish campaign, that the attacker should have a preponderance of two to one at the very least; he states that the Russians never used more than 600,000 troops in their conquest of Finland, and that the Finns had that many troops also. In view of these figures, he concludes that the Russo-Finnish war was a clean-cut victory for the Russians, since they did invade Finland and win the war, with an equal number of men.

In his brief treatment of the history of the Russians as fighters, the author indicates that the individual Russian has always been an intelligent, loyal and brave soldier, but that his leadership has been faulty and the economic organization of the country practically impossible, in past wars. The industrialization of the country and the development of leaders from the people has made the difference.

The Russians have stopped the Germans far longer than the dreams of most of us warranted—this book gives one man's opinion of how and why.

Other Fronts

An American Sees the War

ONLY THE STARS ARE NEUTRAL. By Quentin Reynolds. New York: Random House, 1942. 299 Pages. $2.50.

Quentin Reynolds, *Collier's* correspondent, has written of the things he saw in this war in England, Russia and Cairo, with emphasis on Russia. Reynolds is the antithesis of the coldly analytical foreign correspondent who confines his beat to the American embassy in the country he is stationed. *Collier's* burly reporter is a human sort of creature, who defines the fate of nations in the little things that happen to the little man.

Reynolds likes and respects the Russians, both for what they are and what they can do. Although he protests from time to time that he is not emotional in his reporting, and that he reports what he sees devoid of interpolations of what he would like to see, he is much too human to omit

the conclusions that follow from his admiration of his fellow man. However, the reporter is too honest to color his reports consciously; the result is that it would be an extremely hard-boiled or opinionated reader who would not begin to share Reynold's views on most subjects. It is hard to believe, after reading this book, that the Russian is either the ogre the reactionaries have described, or the simple big-hearted child that inept propagandists have pictured.

The author goes "all-out" in his admiration for Mr. Churchill. Stalin, Averell Harriman, Litvinoff, and General Faymonville are also among Reynolds' favorite people.

Reynolds is at his best in describing the war in the African desert. His story of the attack by Nazi dive-bombers is a master-piece of vivid writing.

✦ ✦ ✦

They Don't Like Hitler

EUROPE IN REVOLT. By René Kraus. New York: The MacMillan Company, 1942. 563 Pages; $3.50.

Mr. Kraus quotes an unnamed American observer who said, "The Germans will be those who call in an A.E.F. to Europe—to protect them from the wrath of their victims." This entire book, and a long one it is, is a recital of the men, the methods, and the results of Germany's campaign to keep the conquered nations in the credit column of Germany's ledger.

The German *gauleiters* and their puppet underlings, the Gestapo, and the collaborationists in the conquered countries are described. The book was published before Heidrich was killed in Czecho-Slovakia, but Kraus made a point of describing the ruthless, arrogant character of the man.

Quisling is painted as a man who was promised great things by the Nazis, who had no intention of fulfilling their promises; now that it has been evident that Quisling cannot deliver the Norwegian people to the Nazi cause, Quisling is a broken, fearful man. Laval, King Boris, Antonescu, Degrelle, Darlan, Kraus says, are all living in fear of assassination because the people of the conquered countries have no intention of living under the Nazi rule one day longer than necessary, and the people will remember who sold them out. Poland, he points out, has never had a Quisling.

This book is recommended reading for the few die-hards in every country who believe you can do business with Hitler. Hitler himself might profit by reading the book; he might learn that the people can take all he and his minions can put out, and still fight for freedom with the means at hand.

✦ ✦ ✦

ASSIGNMENT TO BERLIN. By Harry W. Flannery. New York: Alfred A. Knopf, 1942. 439 Pages; $3.00.

Harry Flannery followed William L. Shirer as Columbia Broadcasting System's Berlin reporter, and Flannery's book follows Shirer's *Berlin Diary* as a text on life in Berlin during the years of the war.

Flannery evidently didn't like the Nazis when he went to Berlin, and liked them less when he returned. His comments on the Germans and their life under Hitler are anything but complimentary.

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He characterizes the German-Russian treaty of 1939 as "a marriage of convenience in which there was no 'obey' clause for the Russians," and indicates that the whole treaty was unpopular with the German people. The German attack on Russia, he reports, was popular with the Germans; it at last was a return to the things they understood, the war against communism. His estimate of German propaganda is interesting—he rates it as poorly conceived to influence the Germans, and worse than that in its effect on non-Germans, this especially with reference to their handling of war news.

Flannery insists the Germans were fooled completely about the effects of Pearl Harbor; they thought that the United States was completely disorganized and split by the isolationists; there was no idea that free men could disagree and express their disagreement, and then unite against a common enemy.

The author describes antiaircraft technique, as practiced by the Germans, that is interesting if true. According to Flannery, when a plane is caught in two searchlight beams, the antiaircraft men "have one side of a triangle and the angles of the other two sides. It is then a mere matter of mathematics, instantly computed mechanically."

In Germany the military began to be restive about the number of young men of military age sitting behind desks in the different ministries while the army fought, and began to agitate for a greater voice in the government, according to Flannery. Without saying so, Flannery hints that one of the secret radio stations in the country was operated by the army, and that it was noteworthy that the station criticized all the Nazi leaders except Hitler and Goering.

On the whole, the book is interesting as it tells of life in Germany and the German mentality, official and civilian.

Booklist

SEA POWER IN THE PACIFIC, 1936-1941: A Bibliography. By Werner B. Ellinger and Herbert Rosinski. Princeton: The Princeton University Press, 1942. 77 Pages; Index; $1.00.

This bibliography is laid out logically, is well indexed, and seems to cover thoroughly the field indicated by the title.

Knight of the Air

ARISE TO CONQUER. By Wing Commander Ian Gleed. New York: Random House, 1942. 223 Pages. $2.00.

In many ways this is just another of the seemingly interminable series of books by the fine young men of the R.A.F. They all seem to follow much the same pattern—the clean-cut youth trains in the fast fighter planes, skylarks with his fellow pilots, takes time off to see his girl, gets frightened to death in aerial combat but manages to come out of his fights ready to fight again another day, etc., etc. Wing Commander Gleed has varied the pattern a bit; he was already in the R.A.F. when war was declared and had fought in France.

The author has been more successful than most in imparting the spirit and feeling of the pilot locked in combat

with a resourceful enemy. The book might have been helped more than a little bit with some intelligent editing; the absence of several hundred quotation marks would have made for smoother reading.

With all its minor faults, the book contains the best description of a night raid on an airdrome that the reviewer has seen to date.

Yank in England

THE EAGLES ROAR! By Byron Kennerly. New York: Harper and Brothers, 1942. 271 Pages; Illustrated; $3.00.

This is another personal experience narrative by a member of the American Eagle Squadron, fighting over England in the days before Pearl Harbor. This one is rather well done; it has the flavor of portraying honest impressions by an observing young man. The problems of night flying are particularly interesting.

War of Words

PROPAGANDA BY SHORT WAVE. Edited by Harwood L. Childs and John B. Whitton. Princeton: The Princeton University Press, 1942. 345 Pages; Index; $3.75.

This book is part of the fruits of the labors of many scholars at the Princeton Listening Center, who during the years of 1939, 40 and 41, recorded and analyzed the flood of words that poured out of the propaganda ministeries of the warring nations. The techniques, the theories, and the strategies of short-wave propaganda are dissected with impersonal and unemotional thoroughness.

Professor Childs, in his chapter, indicates that the short-wave audience in the United States is small and not greatly influenced by the conflicting claims and floods of words of the foreign broadcasters. There are too many interesting domestic programs and too much going on in American life for the great majority of Americans to waste time listening to fuzzy, crackling, heavy-handed broadcasts.

Particularly interesting in this book are the estimates of the value of English and German techniques. The Germans are far from consistent in their broadcasts to different countries or at different times; the British, on the other hand, are so consistent in their stories that even when events are dark and the broadcaster's interpretation of them is overly rosy, Americans are more prone to believe the British version than the German.

Why We Fight

Lebensraum and Other Phrases

GEOPOLITICS: The Struggle for Space and Power. By Robert Strausz-Hupé. New York: G. P. Putnam's Sons, 1942. 264 Pages; Index; $2.75.

The author describes the rise of German *Geopolitik*, its theories, and its claim as a basis of policy and for the indoctrination of the German people with the ideology of *Lebensraum*. He says that the study, although perverted

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from its original standing as a world science into a German propaganda vehicle to explain the Nazi moves of the past ten years, must be reckoned with as one of the main sources of inspiration of Nazi foreign policy.

Major General Professor Doktor Karl Haushofer, the aged confidant of Hitler, is considered the most important exponent of Geopolitics since he is the patron saint of the Nazi school of geopoliticians, which is the only really active group interested in the subject dynamically. Even Haushofer admits that the work of the Swede Kjells, the Englishman Mackinder, and others, form the basis for the so-called science, but that he has put his own interpretations to their groundwork. That the new interpretations act to Nazi Germany's advantage should surprise no one.

Geopolitics is a global scheme of political strategy, that explains what and why to conquer, without going into the "how" of it. In essence, it is the basic scheme of Hitler for world dominance.

No More Versailles

THE PROBLEMS OF LASTING PEACE. By Herbert Hoover and Hugh Gibson. New York: Doubleday, Doran and Company, 1942. 288 Pages; Appendix; Index. $2.00.

A former president and a former diplomat have combined to present a discussion of the problems we face after the Axis is crushed. Mr. Hoover and Mr. Gibson insist that the allies decide *before* the end of the war what methods will govern the peace conference. They suggest three stages of peacemaking:

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The entire book is a well-planned estimate of the situation, devoid of the sentimentality and emotionalism that have wrecked previous attempts to provide for world peace. The dynamiting of the German economic arguments for the present war is a new approach to explaining the fallacy of our enemy's arguments.

It would be useless to attempt a summary of the book—the book itself is a summary. This will be one of the most widely read and most talked-of books on the present war.

Orientation Course

THE BACKGROUND OF OUR WAR. From lectures prepared by the War Department Orientation Course. New York: Farrar and Rinehart, 1942. 252 Pages; Illustrated; Notes; Suggested Readings; $2.00.

All royalties from the sale of this book will go to the Army Emergency Relief.

The best of the lectures in the War Department Orientation Course have been revised slightly and combined in this volume. The result is a picture of what has happened in the war to date, and why it has happened. The entire world area is treated—the effect of Latin American and

the neutral countries on the course of the war is not forgotten.

Written in down-to-earth fashion, but not written "down" to the readers, it is readily understood and clear in its language. The many maps are particularly well done, containing only the important areas and installations, without a mass of confusing, unimportant detail.

✓ ✓ ✓

Fiction

Navy Stories

OPEN FIRE! By Alec Hudson. New York: The MacMillan Company, 1942. 289 Pages; $2.50.

Battle Stations, Enemy Sighted and *Rendezvous*, reviewed here before, have been bound in one volume with *Night Action*, one of Alec Hudson's newest stories. For Alec Hudson fans, this new volume brings everything under one cover—and his stories bear re-reading. Lieutenant W. J. Holmes, U.S.N. (Ret.), who writes under the name of Alec Hudson, is back on active duty. Perhaps when certain egomaniacs have been put in their place and the world returns to normal, there will be more Hudson stories to delight fiction lovers who demand authenticity in their stories of the Navy.

✓ ✓ ✓

Nazis and Romance

THE BLACK BARONESS. By Dennis Wheatley. New York: The MacMillan Company, 1942. 446 Pages; $2.50.

It is hard to decide whether this book is a treatise on the Norweigan and Low Countries phase of the war, with an adventurous novel thrown in for good measure, or a novel that drags interminably through discussion after discussion of the mistakes of the British and the unscrupulousness of Schicklgruber and his cohorts. Take the smooth athletic, adventurous type of detective-story Englishman, add an ex-Russian general, assorted beautiful women, and several warring armies, mix with a lot of European geography, and we have this book. With some judicious cutting, it would be a fine story for those lighter moments.

✓ ✓ ✓

Number Two, Rear Rank

PRIVATE PURKEY IN LOVE AND WAR. By H. I. Phillips. New York: Harper and Brothers, 1942. 150 Pages; Illustrated; $1.50.

The sequel to *The Private Papers of Private Purkey* is more of the same, which is to say that it conceals a lot of good soldier philosophy and fun behind wearisome misspelling, evidently incorporated in an attempt at humor. H. I. Phillips, who conducts The Sun Dial in the *New York Sun*, is one of America's foremost humorists, and his burlesque of the perpetual private is both broad and biting where a bite is needed.

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The Morale Front

The Mademoiselle, Etc.

SOUND OFF! By Edward Arthur Dolph; music arranged by Philip Egner. New York: Farrar and Rinehart, Inc., 1942. 612 Pages; Illustrated; Index; $3.50.

This assortment of soldier songs was evidently a labor of love. In 1928, when the book was first completed, interest in soldiers and the army was at a low ebb in this country, and prospects for good sales for a book of this type were rather hopeless. This new 1942 edition should do better for the authors and the publishers, who have done a real service for the Army with this volume.

The book is divided into nine sections, with an additional few pages for late songs including *Crash On! Artillery*. There is a section of current songs, one of World War I vintage, and so on back into American history to the Revolutionary War. West Point Songs and Songs of the Regiments are not slighted.

The illustrations, line drawings by Lawrence Schick, have a jaunty, devil-may-care style that add to the worth of the book as one for the permanent library.

In many cases, of course, the author has had to substitute laundered versions of the saltier songs that we sang in barracks when the C.O. and the ladies were elsewhere, but those things happen in the best of regulated democracies. The music is there, and the songs are there—more songs than any soldier will learn in a lifetime. This war has not resulted in a revival of mass singing like the last one did, but *Sound Off!* should help our baritones and tenors get started.

Selected Short Subjects

THE KNAPSACK BOOK. Compiled by Frederick Drimmer. New York: Greenberg, Publisher, 1942. 318 Pages. Illustrated; $1.50.

Crossword puzzles, quizzes, brain teasers, jokes, cartoons, poems and songs, short stories, and *The Man Without a Country* combine to fill a book that should help to while away many a boring hour for the type of person who doesn't like all his exercise to be physical, and at the same time, wants to break away from the serious type of reading material for a while. The particular beauty of this book is that it is not designed to be taken in one gulp, but in the odd fifteen-minute periods that are too short to undertake something greater, and too long to waste doing nothing.

"Dear Son . . ."

LETTERS TO A SOLDIER. By George Whiting Seaton. New York: E. P. Dutton & Company, Inc., 1942. 93 Pages; $1.00.

A veteran of 1917-1918 gives his adopted son, newly inducted into the army, the encouragement of a fond father and the experience of a literate and observing ex soldier. There is good sound advice in this book, but its greater value comes from the clear, well-written estimate of the limitations of the Army's ability to make life pleasant

at all times for the individual soldier, especially the intelligent soldier who is used to better things.

Mr. Seaton is not an apologist for the Army, for the occasional inept officer, or for the necessity of training a good army fast. On the contrary, instead of apologizing for the unpleasant things, he explains why they exist and how they may be overcome with the least possible damage to the ego and feelings of the individual.

The chapter on *Morale* is probably the best. Mr. Seaton agrees with those who believe that morale is usually fine until people begin thinking and worrying about it, and that good morale is something that cannot be attained by outside means. Morale is the blend of the many things that make a soldier, and a written-to-order song or lectures by chaplains are not the answers to the problem.

Poetry Collection

PACK UP YOUR TROUBLES. Edited by Ted Malone. New York: Whittlesey House, 1942. 275 Pages; Illustrated; Index; $2.00.

This is a collection of short poems from Thomas Moore, Charles Lamb, Rudyard Kipling, and many other well-known authors, as well as lines from poets whose identity has been lost in the shuffle of the years. For those who like to browze through well-selected poetry as others do through old book stores, there is much here to reward the reader. It is a good book to have at hand in a quiet time when the spirit needs a bit of mental refreshment.

Miscellany

Bombs for Civilians

WHAT THE CITIZEN SHOULD KNOW ABOUT CIVILIAN DEFENSE. By Walter D. Binger and Hamilton H. Railey. New York: W. W. Norton and Company, 1942. 171 Pages; Illustrated; Bibliography; Index; $2.50.

Civilian defense is a subject concerning which much has been written, and a large proportion of the written matter might better have never left the typewriters of the self-appointed experts who have put out much misinformation on this vital subject. With that background of opinion, the reviewer was pleasantly surprised to note the sensible, calm, studied approach of this book.

The authors stress the fact that with a total war to win, the civilian population, no less than the army, must do much with little. They do not attempt to sugar-coat the very real dangers that threaten our important cities and industrial plants, but they do manage to convey the impression that with proper organization, the proper spirit of coöperation and selflessness, and with a minimum of fancy tools and gadgets, the dangers of bombing raids may be reduced very materially.

The book deals sensibly with the broad picture of modern war and how it affects the civilian. There is no attempt at sensationalism or scare-psychology.

Romance on the River

THE ALLEGHENY. By Frederick Way, Jr. New York: Farrar and Rinehart, Inc., 1942. 272 Pages; Illustrated; $2.50.

Every schoolboy knows that Pittsburgh is at the confluence of the Allegheny and Monongahela Rivers, where they meet to form the Ohio, but few people know of the past glories of these streams. Captain Way, well-known in Pittsburgh for his undying (and expensive) faith that the rivers should be used more for commerce, has given us a delightfully readable book about the days when the Allegheny was a really important waterway.

The history of this river is the history of the beginnings of the petroleum industry in America; of many towns, living and dead; of colorful characters who helped to make America; and especially of the boats that skirted the sandbars and islands of the capricious stream. Captain Way tells of the ghost cities of the oil days, of river boats that grounded on gas mains, of Coal Oil Johnny, and hundreds of other places, objects, and people in a somewhat disjointed but thoroughly enjoyable book.

Even today the upper reaches of the Allegheny contain large areas where men seldom tread and where wolves are seen from time to time.

In his appendix on Allegheny steamboats, Captain Way has done a magnificent job of research. He lists the boats and tells what happened to them. He tells of boats that spent half a century churning up and down the rivers, of boats that drew only eight inches of water.

There is still romance on the river.

U. S. N. A.

ANNAPOLIS. By Captain W. D. Puleston, U.S.N. New York: D. Appleton-Century Company, 1942. 244 Pages; Index; Illustrated; $3.00.

An extremely well done picture of the Naval Academy as it is today, and an exhaustive and sympathetic history of the Academy's past. This book would be an especially fine gift for a youngster who has hope or dreams of entering the Naval Academy.

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