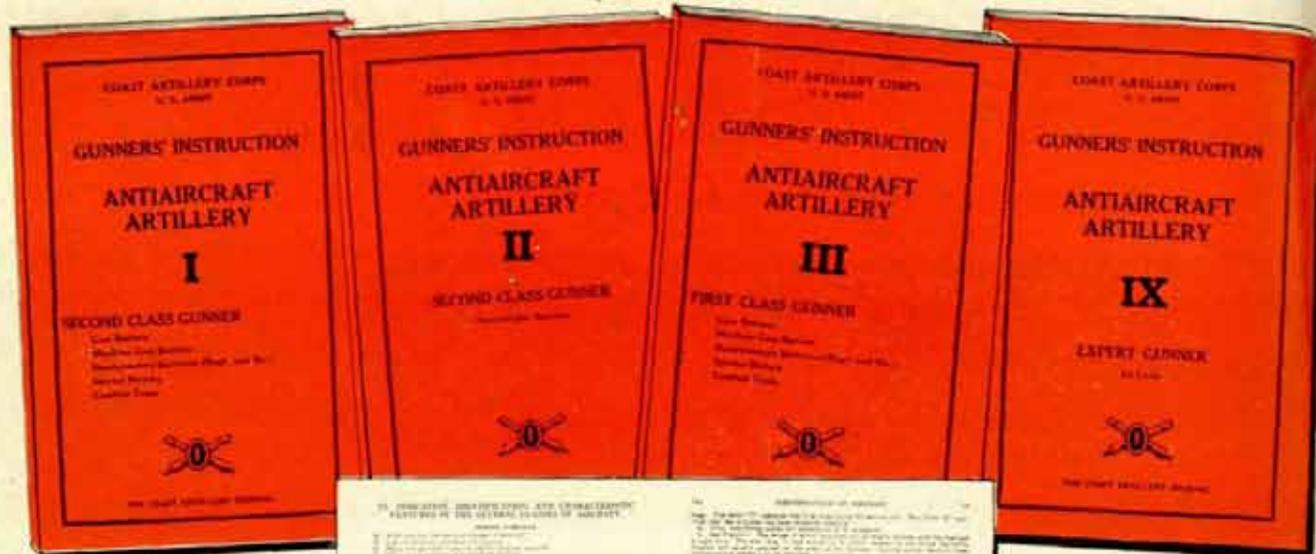


# COAST ARTILLERY JOURNAL

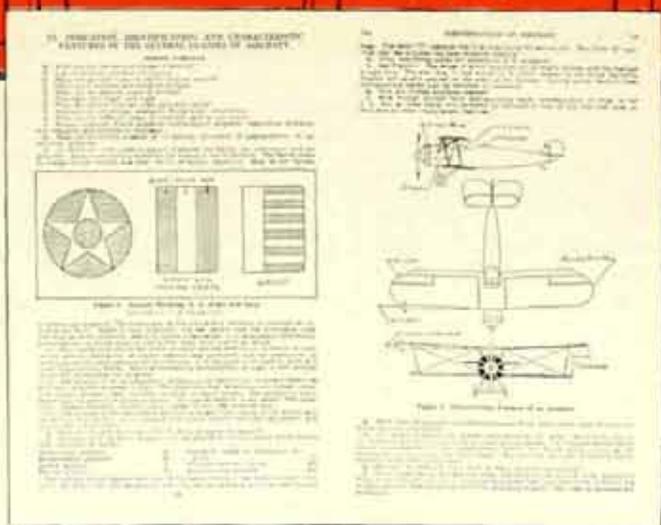


SEPTEMBER—OCTOBER, 1939



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# COAST ARTILLERY JOURNAL

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Opinions expressed and conclusions drawn in articles are solely those of the authors and are in no sense official. They should not be considered as those of the Chief of Coast Artillery or any branch of the War Department.



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## THE ARTILLERY-PURSUIT TEAM AND THE SEARCH- LIGHT-PURSUIT TEAM ARE THE ANSWER « « « TO THE MULTIPLE PLANE ATTACK

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

The time has come to make a realistic examination of the field of antiaircraft tactics in night defense and then to look to the future.

Pursuit aviation's inability to operate effectively at night is a limitation of great importance in its tactical use. Of scarcely less importance is the relatively high degree of effectiveness with which an antiaircraft artillery defense can be penetrated by a major bombardment night attack, if it is conducted so as to concentrate an overwhelming number of planes over a small sector during a period of time. Coping with both of these conditions is of such importance as to warrant the most serious and thorough effort with as little delay as possible.

The failure to make any major progress along these lines is due less to fundamental inadequacies of matériel or technique than to basic misconceptions of their practical

defensive organization and so on. The term "antiaircraft artillery defense" or "AAA defense," refers to all elements of the antiaircraft artillery organization proper, to include the AA artillery intelligence service, the gun and searchlight organization, and to the machine-gun elements to a materially small degree, because of their relatively minor connection with AA searchlight problems. It can be expected that a rear area installation important enough to warrant an allotment of an adequate antiaircraft artillery defense, will also be considered by the attacker to warrant and require attack by a large bombardment force. A well-coordinated, well-timed attack within a 60-degree or smaller sector by a bombardment group employing the flight or squadron methods of attack, with planes attacking on three or four routes within the narrow sector at the same time, and with intervals between successive planes on each route of twenty seconds or less, presents greater problems to an AAA defense than any other now known. This method is normally used only at night because of the great vulnerability of its widely separated planes to daylight pursuit attack. It has been assumed, up to the present time, that pursuit aviation is effective only in day-time attacks.

We have been accustomed to consider the absolute stopping of all bombardment attacks before the attacking planes reached the bomb release line to be an inflexible requirement of our mission. If we should succeed in stopping the attack short of the bomb release line our mission would have been accomplished; to the extent we fail in the attainment of this objective, our mission would be a failure. Our former tendency toward an extended defense, which sacrificed maximum hitting ability for a fallacious

# DEFENSE AGAINST

capabilities. These misconceptions have grown out of unjustified conclusions drawn from the results of various combined exercises and demonstrations. These conclusions, it is believed, have been based upon insufficient data or upon results so seriously affected by lack of suitable training of the participating units, or by other extraneous causes, as to render quite unwarranted the drawing of assumptions of a general nature.

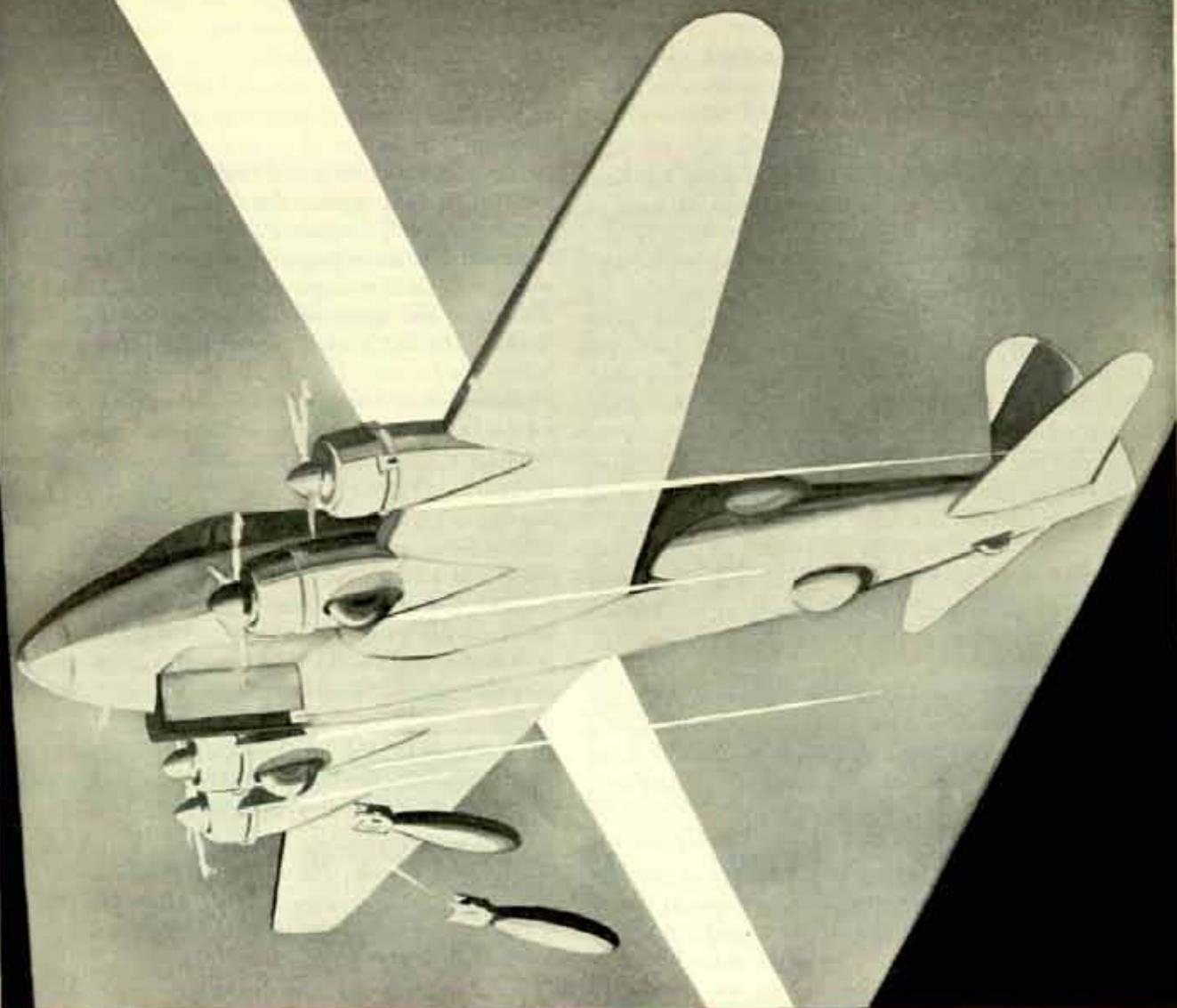
In this discussion, the term "antiaircraft defense" refers to all elements of an antiaircraft defensive organization, and includes pursuit aviation, the interception net, facilities and observers, all elements of the antiaircraft artillery

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By

Captain Arthur B. Nicholson  
Coast Artillery Corps

★ ★ ★ ★ ★ ★ ★ ★ ★ ★



# **IGHT BOMBARDMENT**

hope of a greater chance for destruction before the bomb release line was reached, is an example.

Such a perfect defense is obviously desirable as an ideal toward which to develop, but as a *practicable* objective it is too high a goal.

Our former acceptance of the assumption that such effectiveness of defense was virtually attainable has been largely responsible for the dearth of major advances in antiaircraft defense. Technique has been steadily and greatly improved but there has been little to compare with the strides made in the power of the air offensive in the last few years. There has been little striking-out along new lines, and this is imperative if the challenge of the multiple-plane bombardment attack is to be met effectively. We have tagged along for far too long. As an important exception to this generalization there may be mentioned the successful operation of the aircraft interception net and the blackout of civilian communities in the Fort Bragg exercises last fall.

The failure to deal with the problem is largely chargeable to a tendency to develop technique at the expense of tactics. In the past, when a difficulty faced us, our first impulse often regardless of the real nature of the problem, has been to invent a new mechanical device to solve the problem for us. Problems of tactical disposition have commonly been approached from a too narrow mathematical and mechanical viewpoint. Although mathematical expectancy factors and effective ranges are absolutely basic in any consideration of tactical dispositions, they are by no means the only important aspects of such problems.

Our technical advances have been tremendous since the World War. The development of such devices as the director has been of such importance as to make nearly all the difference between success and failure in the hitting of a target. But extremely valuable as they are, mechanical devices will not solve the problem of the multiple-plane major attack. Nor will any prospective technical developments, or the subdivision of the limited number of batteries available into a greater number of smaller fire units, nor even the concentration of the defense close about the objective, succeed in preventing a considerable part of the attacking planes from reaching the bomb release line. It is time for the defense to face this fact squarely.

Two attitudes have contributed equally. The first has been the tendency to believe that if our defensive mission is to be accomplished all planes must be either turned back or shot down *before* they drop their bombs. The second, the too-common belief of bombardment commanders that they can successfully accomplish their missions by shielding incoming planes by flying their withdrawing planes under them at lower altitudes. Both attitudes would be justified if the successful bombing of any one objective would, by itself, win a war, or even seriously affect its outcome. This, of course, is not the case.

If, however, the defense is strong enough to destroy a large part of the attacking force, the bombing of the

objective might well prove to have been more expensive to the attacker than to the defender. A modern bombing plane costs in the neighborhood of a quarter of a million dollars. It is obviously not necessary to destroy a great many planes in order to make the cost to the attacker too great. In war, the cost factor would be of less importance, but the months of time and extensive manufacturing effort required to replace the lost bombardment plane would remain. To replace a substantial part of a modern bombardment force might well involve more difficulty and tactical and strategical injury to the attacker than the loss of the destroyed objective would cause the defender. The fact that the attacker sustained few losses before bombs were dropped, in proportion to those lost on the withdrawal, might well prove but sorry consolation for the fact that a major part of his force was gone.

Major General E. B. Ashmore, commander of the London Air Defence Area, in his AA Bible, *Air Defence*, has this to say:

"No measure of any kind, whether bombing enemy towns and aerodromes, or defensive arrangements in this country, are going to insure that no bombs will fall on London. What the defences *can* and should do is to *take such toll of the enemy that he will find bombing too expensive, and will therefore stop his attacks.*"

And again, in referring to the last attack of the war by German aircraft upon London, during the night of May 19, 1918, when, out of between thirty and forty attacking planes, ten were lost and only thirteen reached London:

"This was a typical example of what a hard-hitting defence can accomplish. *No scale of defence, however great, can secure complete immunity from bombing; but by suitable arrangements the attacker may be made to suffer such casualties that his efforts will die out.*"

The Air Corps estimates that a 50% reduction in the efficiency of the attacker is accomplished by the mere presence of any effective AA defense at all. He is forced to adopt formations unfavorable to accurate bombing, the accuracy of his bombing itself is seriously impaired by the defensive measures he must adopt, he is prevented from making "trial shots," he is forced to employ a far greater force to insure destruction than would otherwise be required.

On the other hand, for the defender to secure a diminution of the remaining 50% reduction in the attacker's efficiency to prevent any bombing whatever presents a problem in diminishing returns. After attaining a degree of defense efficiency at which it becomes seriously unprofitable for the enemy to attack, the defender attains small further gains in effectiveness only at the cost of inordinately great, and eventually wholly impracticable, increases in the defensive organization.

In this discussion, the conception of the type of defensive organization to be sought is predicated upon the basic idea of the "Limited Aim." Such a defensive organization must be at once able "to take such toll of the enemy that he will find bombing too expensive, and will

therefore stop his attacks," and—it *must be practicable of realization*.

No antiaircraft artillery defense, organized under our tactical doctrine as taught to date, can fulfil these requirements if subjected to heavy bombardment night attacks.

#### STATIC DEFENSE AND MOBILE RESERVE

The employment by bombardment aviation of any method of attack—such as the flight or squadron methods—whereby multiple targets are presented to the AA artillery simultaneously and in rapid succession within a narrow sector, presents a problem practically impossible of effective solution by the antiaircraft artillery acting alone.

This difficulty is rooted in a principle as old as war—that no defense can succeed which does not have the power to place a concentration of force, normally in the form of a tactically mobile reserve, in support of a point or sector threatened by a powerful attack.

Such power is not possessed by a defense composed of AA artillery alone, nor will it probably ever be. Antiaircraft artillery does not possess tactical mobility in the defense of a rear area objective. Speeds of aircraft being what they are, it is not within the realm of practical possibility, to move AAA batteries to positions in concentrated support of a threatened sector, once the direction of attack becomes definitely known. Since it is impossible to anticipate the direction of an attack with reasonable accuracy, AA artillery must be emplaced so as to provide an all-around defense and, once the attack begins, must defend as best it can from the positions in which it finds itself.

A minor concentration in the direction of probable routes of approach may have limited application in certain situations, but a bombardment commander about to attack an objective strongly defended will be much more interested in a route of approach which will expose his force to the least amount of fire, than he will be in terrain considerations. Accordingly, obvious routes of approach are more likely to be avoided than used, if such action gives promise of avoiding effective fire.

In an infantry position defense, the defending commander will never, except in the most abnormal cases, be able to establish a defensive position so uniformly strong that a powerful enemy will not be able to concentrate decisively superior force at a given point. Such a defense of an infantry position, if it could be established, would be rightly condemned as a most wasteful use of force; in the case of antiaircraft artillery, it is inconceivable that such amounts of force would ever be available for the defense of any one or single group of objectives.

The difficulty facing the antiaircraft artillery in bringing adequate force to bear is further pointed up by the fact that the object sought by the attacking forces in a major bombardment attack is not the defeat or destruction of the AAA forces, but a swift penetration and equally swift withdrawal. The attack strikes not at the defending forces, but at the object defended, and strives to avoid

contact in every way with the defending forces, or to reduce the time of such contact to the absolute minimum.

The only practicable means of providing the necessary reserve of concentrated striking power, is in the use of pursuit aviation as an integral part of the defense of objectives of vital importance.

#### DEFENSE POWERS AND CAPABILITIES

There are no serious weaknesses nor problems materially difficult to solve in the field of cooperative daytime defense by pursuit aviation and AA artillery. In daylight, pursuit normally can, and will, tactically dispose itself so as to accomplish its most effective work in areas entirely outside, and well in advance of the zones of action of the AA artillery. The problem of mutual interference is thereby eliminated. Reasonably effective daylight work by pursuit can be expected. Whether or not it succeeds in shooting down a substantial part of the attacking force, it can be expected to considerably disrupt an attack before it gets started, perhaps breaking it up into disorganized individual attacks which present a relatively simple problem to the AA artillery. Consequently no further discussion of this phase is necessary here.

Nor do there appear to exist serious problems in the more purely technical aspects of shooting down a given target. The pursuiter, once he gets to close quarters, may be able to shoot down the bomber. The antiaircraft artillery, for its part, is tactically disposed to cover that part of the bomber's course during which the sighting operation is being performed and during which the bombing plane cannot maneuver if the bombs are to strike on or near the target. In consequence, maneuvers by the bomber in the effort to escape AA artillery fire can be expected to be of materially less benefit than is often supposed to be the case.

Although, in general, the same considerations apply to the illumination of the approaching bomber by searchlights, maneuver can present a much more serious problem to the searchlight unit. If the gun battery is to open fire upon the target at the beginning of the bombing run, it is necessary that the searchlights illuminate the target well in advance of this point, while the bomber is still free to maneuver. Accordingly, sound tactics dictate that the lights be kept dark until the target has reached such close range that it can be picked up within a few seconds after the lights go into action and before the target can execute extensive maneuvers. A target which maneuvers during the entire approach before the searchlights go into action and until the last moment before the beginning of bomb sighting, might avoid illumination until the latter half of the bombing run, in which case the time of rectilinear flight available to the gun battery for fire might be insufficient to allow of shooting it down. However, the use by searchlight units of detectors of the types understood to be now in advanced stages of development in the major countries of the world, which eliminate completely all prediction time for the searchlights, will render maneuver of no effect in escaping illumination.



Nor are defending searchlights the critical bottleneck in the handling of multiple-plane attacks. The work of the 1st Wing, GHQ Air Force, and at least one AA regiment since 1934, has demonstrated that a trained searchlight unit, although manning obsolete sound locators and old searchlight control equipment can, under both favorable and certain unfavorable weather conditions, illuminate more planes of a squadron method of attack up to 15,000 feet than the guns of the normal AAA defense can engage.

Insofar as the apparently contradictory results of other exercises are concerned, it is most unwise and even dangerous to predicate estimates of the efficiency of defense to be expected on the part of a first class power, upon the results heretofore attained by the searchlights.

It appears that in general, these results can be attributed to the fact that the highly specialized training necessary for efficiency in multiple-plane work was not available to the participating units prior to the exercises. It is absolutely imperative that such preliminary training be made available to participating searchlight units if effective work is to be expected.

The searchlight battery of the regiment above referred to has been fortunate, in recent years, in having had available nearby the facilities of the 1st Wing, GHQ Air Force, and in having had the hearty cooperation of General H. H. Arnold, recent 1st Wing Commander, and his successors.

No less credit is due the cheerful, wholly voluntary cooperation of the 40th Division Aviation, California National Guard. The pilots of this organization have flown largely on their own private time and have, since 1934, supplied from 25% to 30% of the total flying hours available throughout the year to the battery, except in 1936, when they supplied a majority of the total. Their help was especially valuable during the "off season," by flying the occasional missions necessary to keep the battery's efficiency from dropping off too greatly, and in "toning" them up before maneuvers.

Personal contact and informal requests will find other National Guard units only too glad to cooperate with

searchlight batteries handicapped by lack of adequate flying hours.

The total number of flying hours available throughout the year, in single-plane missions, to this battery has averaged approximately 73½ hours per year for the five years from 1934 to 1938. Of this, about 60%, or forty to fifty hours, was used during the period of intensive training for target practice, the remainder in preliminary basic training and after-season refresher drills.

In direct preparation for the multiple-plane advanced practices of 1935, approximately fifty-five plane hours of formation flying were used. This comprised attacks by the squadron method by from four to six planes a night over a period of approximately a week immediately preceding the three advanced practices.

This amount of training, both upon single-plane and formation flying, is the minimum requirement of a searchlight battery during the period immediately preceding a combined exercise or tactical inspection, if the results attained by the searchlights are to have any significance other than as an index of the state of training of the battery.

Such training would be very easy to obtain if all searchlight units were located close to Army air field where purely incidental flying could be made use of, and is probably less than would be obtained after a short period of active service in wartime.

The searchlight advanced practices held in 1935 and 1937, while supplying reliable data on the practicability of illumination of the planes of a multiple-plane attack, were conducted at altitudes below 15,000 feet. Further work is necessary at the higher altitudes.

The fields of technique and matériel do not contain major obstacles without present or immediately prospective solution. Serious and fundamental difficulties, however, remain in other fields.

#### LIMITATIONS UPON ILLUMINATION

So long as it is necessary to give the target sufficiently good illumination to allow of accurate fire from the ground under all conditions, two serious difficulties remain inter-



posed. These will, furthermore, remain almost equally formidable, no matter how accurate the detector used for position-finding may be, so long as illumination is required.

Of these, the first and most serious is moonlight. Bright moonlight gives bombardment its most favorable conditions and the defending artillery one of its worst handicaps. It is to be accepted as normal that a bombardment commander will prefer and seek bright moonlight nights for an attack. Nor only is navigation simplified, but the objective itself is easier to locate.

On the other hand, the effect of moonlight upon illumination and visibility are objectionable to AA searchlights. The lack of a dark background against which to contrast the illuminated target not only greatly increases the time required for the original "pickup," but it also decreases the range at which it can be made. This impedes the success of continuous "carry," on the part of the searchlight crew, and reduces the efficiency of illumination to such an extent as to markedly increase the difficulty of getting accurate data on the target by instruments. Yet nights of bright moonlight are those on which bombardment attacks can most certainly be expected.

The second major difficulty is caused by ground haze. Its effects are materially more injurious than those of moonlight, but its occurrence cannot be predicted at the objective by the attacker with such certainty as moonlight, nor does it occur with such regularity and frequency. Consequently it is placed below moonlight as an obstacle under general service conditions. A ground haze so light as to be indistinguishable to the high-flying bombardment can, by its diffusion and reflection of light back upon the searchlight crew, make it most difficult to detect from the ground and to follow continuously a high target, *even though it be well illuminated.*

At present, such are the inherent inaccuracies of the sound locator, even with the best of crew training, that the most that can be expected from sound locator data alone are frequent "flicks" by the light as it follows along the course of the plane. For continuous, uninterrupted illumination after the "pickup" it is necessary that the

searchlight operator actually see the target when "flicked," and thereafter keep it in the beam by sight.

The all-important fact must not be lost sight of, that the paramount difficulty lies *not* in illuminating the target, nor in the amount of light that penetrates the haze and actually reaches the target. The ruling consideration is the ability of the searchlight operator *on the ground* actually to *see* the target, once it is illuminated.

Future detectors may give enough accuracy to permit continuous illumination of a target by tracking on data alone, even though the operator be completely blinded by haze, smoke or moonlight. It is doubtful however, that these will produce accuracy sufficiently high to permit effective, unobserved, "blind" gunfire, without illumination of the target. For the near future, at least, effective functioning of the instruments of the gun battery will continue to require that their operators be able to *see from the ground* a well-illuminated target, bright moonlight and ground haze notwithstanding.

So long as the observer remains on the ground, these extremely serious difficulties remain. If, however, he is located, not on the ground under the haze, but in a pursuit airplane one, two, three or four thousand feet under the target will the difficulties be as serious? Obviously not.

#### POSSIBILITIES OF PURSUIT AVIATION

The question will at once be raised—"How great will be the adverse effect upon the sound locators of the noise of the pursuit planes at altitudes a few thousand feet lower than the approaching bombardment?"

The answer to this is definite. The adverse effect will never be serious, provided listeners are reasonably experienced and the pursuit planes properly controlled and do not fly at unreasonably low altitudes. An experienced listener can distinguish with little difficulty the peculiar sound of a high, twin-engined bomber through the noise of a lower, single-engined plane, unless the lower plane is so low as to drown out all other sound entirely.

The results of various exercises in the past few years justifies this statement that negligible interference will be caused by pursuit, when properly handled.

Almost the only important historical example of sustained effective, coöperative work between searchlights and night pursuit aviation, is that of the London Air Defense Area, and of the British No. 151 Squadron and searchlights manned by the Royal Engineers on the Western Front in 1918, described by General Ashmore in the book previously mentioned. General Ashmore has the following to say about this:

"A thick belt of searchlights was formed close up to the line from the north of Arras to the road running east from Amiens, the searchlights from Abbeville moved up there early in September, and No. 151 Squadron went forward to Vignacourt.

"Success was immediate and striking; between the 13th September and the end of the month the squadron, working in excellent coöperation with the AA guns and the searchlights, destroyed fourteen bombers and put an end to the enemy's activity in that part of the line.

"Our pilots carried through the twenty-six decisive combats without themselves receiving a scratch from the enemy, striking testimony to the excellence of the methods employed.

"The searchlight crews were quite capable of lighting the bomber without exposing the fighter. A bomber held in a strong concentration of beams is rendered very helpless. The crew can hear nothing but the sound of their own engines; the effect of the brilliant light reflected from every surface of the machine—is so dazzling that it is practically impossible to see anything. The fighter can take up his attack position unseen and unheard; the first the bomber knows about it is the passage of the bullets through the fuselage."

With reference to the general question of the effectiveness of pursuit at night, a report by Captain C. L. Chennault, U. S. Army, retired, upon Sino-Japanese hostilities in China, states that the effectiveness of the Russian pursuit was far greater by night than by day, in fact so great as to result in the prompt discontinuance by the Japanese of night bombing. The Russian pursuit pilots took position beneath the bombers, thereby silhouetting them against the sky, from which position they could see their target while remaining comparatively invisible themselves, and could consequently attack in relative security, although not with such impunity as if the bombardment gunners had been blinded by searchlight glare.

To quote General Ashmore again:

"Intimately connected with these tactics was the action of the searchlights. We have seen how searchlight beams, *following a bomber closely*, can help the scout pilot to get into touch even if the target is not actually illuminated. Indeed, many scout pilots at one time held that the searchlights should stop short at this, and that any attempt actually to illuminate the bomber would only end in the exposure of the fighter machine. As the searchlight work improved, it was found to be far better to hold the bomber in the beam, even after combat had been joined."

Note that phrase "searchlight beams, *following a*

*bomber closely*, can help the scout pilot to get into touch, even if the target is not actually illuminated."

The object of the searchlight work should not be to indicate the *approximate* position of the target by the intersection of two or three searchlight beams, unless there are no sound locators available at all. The object should be to *track the target as closely as possible, with beams laid upon the most accurate locator data possible to obtain.*

With only reasonably effective locator work, the error of the beams will be limited to plus or minus three degrees. The beams will indicate, *not the approximate location of the target, but very nearly its exact location*, frequently "flicking" it, and a great deal of the time so close as to make it faintly visible in the fringe of light at the edge of the beam.

"Flicks" may not be visible to the operator at the distant light, who needs not only bright illumination and good contrast, but sees only light reflected from such surfaces of the plane as are approximately perpendicular to his line of sight. The latter fact is responsible for the frequently observed occurrence of bright "flicks," unseen by the light operator, which are nevertheless plainly visible to observers located with reference to the angles of reflection from the wing surfaces. Those with experience in searchlight work are familiar with such occurrences, and have often seen a target, 10,000 to 15,000 feet above them, faintly visible in the fringe of a beam, yet missed by the searchlight operator, for whom the illumination was not bright enough.

Pilots who have flown for AA searchlight training are familiar with the fact that they are usually flicked many times before they are definitely "picked up," by lights whose locator data are good but whose operators, owing to haze, moonlight, angles of reflection or other causes, are unable to perceive the illumination.

A pursuit pilot, however, located two or three thousand feet under the target, is in perfect position to take advantage of all such "marginal" illumination, particularly when such hindrances as moonlight or ground haze severely limit visibility from the ground.

It is absolutely essential that the beams be continuously laid upon data provided by a reasonably well-trained locator crew. It is *not* believed to be essential that the target plane be continually illuminated by beams controlled visually from the ground, provided that the beams are laid upon reasonably good locator data.

No data, based upon the results of thorough, planned, coöperative tests, conducted in this country by units thoroughly trained in the type of work being undertaken, are yet available either to confirm or refute this. In view, however, of the pressing need of a means both of reinforcing the marked weaknesses of night AAA defense against multiple bombardment attacks, it is most urgent that an intensive program of coöperative training be inaugurated, with the idea of securing reliable information upon which future tactics can be based.

In any such program it is absolutely essential that pri

mary emphasis be placed upon adequate and thorough training of the searchlight unit before the holding "test" phases. Only when the results attained in such test phases rest upon a basis of adequate unit training is the drawing of conclusions warranted.

We have discarded the idea that "a million men will spring to arms overnight," as impracticable to produce even the non-technical branches of a modern army. Just so much less justified is the attempt of difficult AA searchlight work, requiring highly trained specialists, by units to which adequate training has not been available.

Moreover, it is absolutely essential that such test programs be in no sense competitive. They must be conducted, if their results are to be worth anything, purely as a laboratory experiment, with every operation being performed exactly as desired by the controlling head, with only one fundamental object in view, the good of the service as a whole.

COÖPERATIVE TRAINING AND TEST PROGRAM

The program outlined below includes a period of preliminary training which will bring a relatively untrained unit, or one which has been out of training for some time, to a state of proficiency such as to warrant its entering upon the more advanced stages.

The average searchlight unit, after a winter lay off or similar period of a few months without direct training with planes, will require the whole period of basic training if proficiency is to be expected. If the searchlight unit has, within the week or two immediately preceding the program, completed its regular annual target practices with good results, the first seven weeks of the program can be eliminated. Training can begin with the second week of the intermediate period. It would be possible to eliminate another week, except for the fact that at least two weeks of training of a simpler nature upon the tracking of bombardment through pursuit should be allowed the unit before it enters upon the higher altitude, multiple-plane phases.

During the intermediate period, drill upon two bombers, each confining its flying to separate halves of the platoon sector, is introduced. This will accustom the men at an early stage to disregard flying in other parts of the sector, and is primarily designed to save time and expedite training. With only one plane available the personnel of the disengaged side of the sector are out of range and idle a considerable part of the time.

Methods of training suitable for the attainment of the required degree of proficiency were described in an article ("Training of the Antiaircraft Searchlight Battery") in the COAST ARTILLERY JOURNAL, May-June, 1936. These or comparable methods, adapted for the types of matériel available, will produce the state of training required.

It must be emphasized that the training program outlined here is designed primarily for the purpose of bringing the standard of *general* training up to the point of proficiency required for advanced types of AA searchlight work. Only in the latter part of the intermediate period

does the program merge into a type of training directed toward the solution of the particular problems presented in this program.

RECOMMENDED TRAINING PROGRAM

Basic Period—6 weeks

2 Drills each week of 2 hours each drill—4 hours a week  
 Altitude of Plane: 4,000-7,000 feet  
 Type of Plane { 1st 4 weeks—Any Type. Total Plane Hours: 16  
 { Next 2 weeks—Bomber. Total Plane Hours: 8  
 Total Plane Hours Basic Training: 24

Training of this period to grow out of, and be merged with, preliminary work on such devices as the binaural training instrument and the Cowen loud speaker device.

Locator and searchlight sections to be grouped within a few hundred yards of each other during this phase, for more efficient instruction and supervision.

Plane to fly smooth, easy courses, always within easy range of the sections.

Plane to fly always with running lights on. When errors of data are seen to have narrowed down to small limits, the units can be considered ready to proceed to the Intermediate Phase.

INTERMEDIATE PERIOD

3 Weeks

Units to occupy normal sector positions.  
 Planes to fly *without* running lights.

1st Week

2 Bombers

|                     |                               |                   |
|---------------------|-------------------------------|-------------------|
|                     | <i>One Side of Sector</i>     | <i>Other Side</i> |
| Altitudes . . . . . | 10,000 feet                   | 12,000 feet       |
|                     | 4 Drills of 3 Hours Each.     |                   |
|                     | Total Plane Hours (Bomber)—24 |                   |

2d Week

2 Bombers—2 Pursuit

|                     |                           |                   |
|---------------------|---------------------------|-------------------|
|                     | <i>One Side of Sector</i> | <i>Other Side</i> |
| Altitudes . . . . . | 11,000 feet               | 13,000 feet       |
| Pursuit . . . . .   | 10,000 feet               | 10,000 feet       |
|                     | 4 Drills of 3 Hours Each  |                   |

|                             |                |                |
|-----------------------------|----------------|----------------|
|                             | <i>Bombers</i> | <i>Pursuit</i> |
| Total Plane Hours . . . . . | 24             | 24             |

3d Week

3 Bombers—3 Pursuit

1st Half

2 Drills of 3 Hours Each.

|                     |             |               |              |
|---------------------|-------------|---------------|--------------|
|                     | <i>Left</i> | <i>Center</i> | <i>Right</i> |
| Altitudes . . . . . | 10,000 feet | 14,000 feet   | 12,000 feet  |
| Pursuit . . . . .   | 9,000 feet  | 9,000 feet    | 9,000 feet   |

*2d Half*

2 Drills of 3 Hours Each

|         |                   |             |             |
|---------|-------------------|-------------|-------------|
| Bombers | ..... 12,000 feet | 16,000 feet | 14,000 feet |
| Pursuit | ..... 11,000 feet | 11,000 feet | 11,000 feet |

|                   |       |                |                |
|-------------------|-------|----------------|----------------|
|                   |       | <i>Bombers</i> | <i>Pursuit</i> |
| Total Plane Hours | ..... | 36             | 36             |

## ADVANCED PERIOD

1st Week—4 Drills of 3 Hours Each.

6 Bombers—6 Pursuit

*1st Half*

2 Drills of 3 Hours Each.

*Flight Method of Attack by 2 Flights at 1-Minute Intervals*

|                  |       |             |               |              |
|------------------|-------|-------------|---------------|--------------|
| <i>Altitudes</i> |       | <i>Left</i> | <i>Center</i> | <i>Right</i> |
| Bombers          | ..... | 14,000 feet | 18,000 feet   | 16,000 feet  |
| Pursuit          | ..... | 13,000 feet | 13,000 feet   | 13,000 feet  |

*2d Half*

2 Drills of 3 Hours Each.

*Flight Method of Attack by 2 Flights at 40-Second Intervals*

|         |       |             |             |             |
|---------|-------|-------------|-------------|-------------|
| Bombers | ..... | 16,000 feet | 20,000 feet | 18,000 feet |
| Pursuit | ..... | 15,000 feet | 15,000 feet | 15,000 feet |

|                   |       |                |                |
|-------------------|-------|----------------|----------------|
|                   |       | <i>Bombers</i> | <i>Pursuit</i> |
| Total Plane Hours | ..... | 72             | 72             |

## SAFETY REQUIREMENTS

Safety requirements, beginning with the introduction of pursuit planes in the second week of the intermediate period, are taken care of by restricting all pursuit planes to a band of altitude differing by 1,000 feet from that of any bombardment plane, by the use of similar restrictions between bombardment planes, and by requiring all pursuit planes to fly with running lights.

It is intended only that the pursuit pilot take position below the attacking bomber in order to determine whether or not he can see it in the illumination which the searchlights give him, not that he actually simulate an attack. The ability of pursuit, not illuminated, to shoot down a partially or wholly illuminated bomber, is not in question.

In order to avoid unnecessary interference, each pursuit plane should, while awaiting the bombardment attack, hold a position at its assigned altitude over a location in rear of the outer ring of lights. When the lights go into action against the bomber, the pursuit plane moves forward to make the interception. If the pursuit plane does not cross the outer ring of lights until after these are securing data on the approaching bomber sufficiently good to warrant their going into action, no materially injurious interference will be caused.

In the later phases involving a formation of pursuit planes, the formation should remain in rear of the inner ring of lights, to avoid undue multi-engine sound interference. Upon the report of the first bomber by the searchlight advanced listening posts, the first pursuit plane should be moved up to the outer ring of light, the pur-

suit commander thereafter peeling off successive planes and moving them forward as successive bombers approach.

#### FLIGHT METHOD OF ATTACK

In the later phases of the program the Flight Method of Attack by bombardment is proposed. Due to safety requirements, the withdrawal of the first bombers at lower altitude directly under those still approaching, is not included as part of this program. Diving to lower altitude upon passing the bomb release line might involve risk of collision with pursuit.

Moreover, it is not believed that the realism of the problem would suffer materially for lack of this feature. It is admittedly not to be expected in actual service to prevent every enemy plane from reaching the bomb release line. What is sought is to effectively engage all attacking planes with the object of destroying them before the bomb release line is reached. Such being the case, it would matter little to the bombardment commander whether his planes were lost on the approach or while "running interference" for succeeding planes by withdrawing under them.

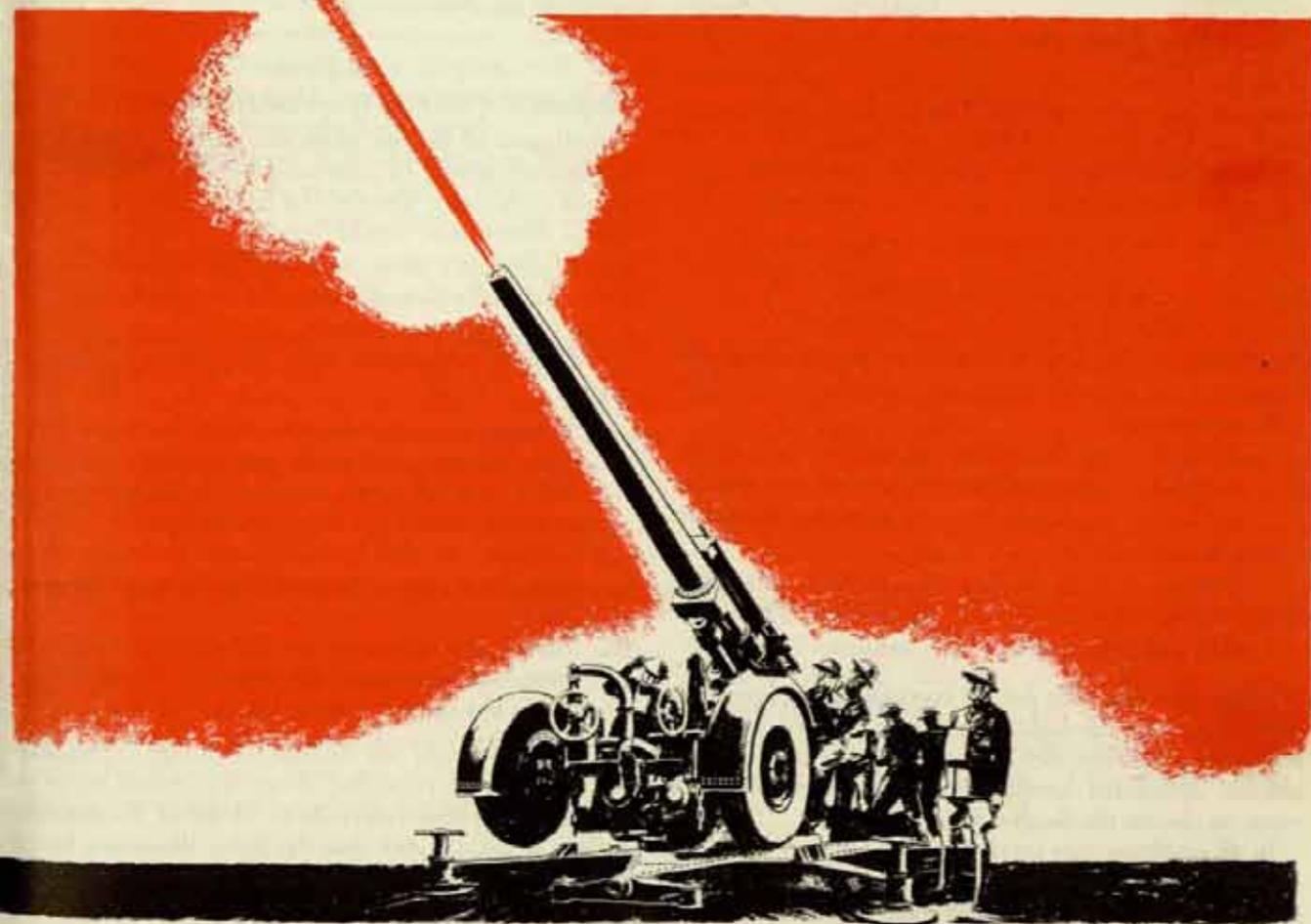
#### TEST PHASE

The formal test phase, outlined below, is designed

principally as a self-contained program of one week's duration, involving the flight method of night attack against an objective defended by AA searchlights and pursuit aviation. It is intended that the program be conducted twice, once during bright moonlight and again, after a lapse of one week, in the dark of the moon.

The flight method of attack is chosen because it is one of the two types which present the greatest difficulties to a searchlight platoon, and because the principal question requiring determination is that of the ability of searchlights to illuminate effectively the planes of a bombardment attack through pursuit interference.

The problem of locating and illuminating bombardment in formation is relatively so simple as to warrant but little, if any, part of the program. However, in order not to leave such a point open to possible question, two nights of work against a bombardment squadron in formation are proposed, to take place during the second or intermediate week. The formation proposed is squadron stagger or other at the option of the bombardment commander; the searchlights to concentrate on the rear planes of the formation. A flight of pursuit is to fly 1,000 feet below the altitude prescribed for the lowest element of the bombardment formation.



FORMAL TEST PROGRAM

1 Week

1st Day

MONDAY

Shakedown Drill

2 Bombers—2 Pursuit

3 Attacks—2 Hours

One Side of Sector

Other Side

Altitudes

|                   |                |                |
|-------------------|----------------|----------------|
| Bombers           | 15,000 feet    | 14,000 feet    |
| Pursuit           | 13,000 feet    | 13,000 feet    |
|                   | <i>Bombers</i> | <i>Pursuit</i> |
| Total Plane Hours | 4              | 4              |

2d and 3d Days

TUESDAY AND THURSDAY

- 1 Bombardment Squadron . . . . 9 Planes
- 1 Pursuit Flight . . . . . 9 Planes

FLIGHT METHOD OF ATTACK

4 Attacks each night—Time—2 Hours

Bombardment to Use Formation Tee Lights

Pursuit to Operate below Bombardment

|                                 |             |                |                |
|---------------------------------|-------------|----------------|----------------|
| Altitudes                       | Left        | Center         | Right          |
| Bombers                         | 16,000 feet | 20,000 feet    | 18,000 feet    |
| Pursuit                         | 15,000 feet | 15,000 feet    | 15,000 feet    |
|                                 |             | <i>Bombers</i> | <i>Pursuit</i> |
| Total Plane Hours (both nights) | 36          |                | 36             |

4th Day

FRIDAY

- 1 Bombardment Squadron . . . . 9 Planes
- 1 Pursuit Flight . . . . . 9 Planes

FLIGHT METHOD OF ATTACK

4 Attacks—Time—2 Hours

Pursuit to operate above bombardment

No-Formation Tee Lights to be Used by Bombardment

|                    |             |                |                |
|--------------------|-------------|----------------|----------------|
| Altitudes          | Left        | Center         | Right          |
| <i>Bombardment</i> |             |                |                |
| 1st Plane          | 16,000 feet | 20,000 feet    | 18,000 feet    |
| 2d Plane           | 15,500 feet | 19,500 feet    | 17,500 feet    |
| 3d Plane           | 15,000 feet | 19,000 feet    | 17,000 feet    |
| <i>Pursuit</i>     |             |                |                |
| All Planes         | 21,000 feet | 21,000 feet    | 21,000 feet    |
|                    |             | <i>Bombers</i> | <i>Pursuit</i> |
| Total Plane Hours  | 18          |                | 18             |

In this problem, with pursuit operating above bombardment, formation tee lights should not be used by bombardment, and it becomes necessary to prescribe a 500-foot altitude differential between successive planes on each route, to obviate the danger of collision.

In all problems that involve attacks on more than one route within the sector at one time, both in the test and in the training phases, altitudes should be alternated be-

tween different routes on successive nights involving the same problem. Then all elements of the defense are faced with problems of equal difficulty, and the results and data attained are not complicated by the intrusion of unknown elements of differences of ability.

2d Week

(Intermediate)

MONDAY

Shakedown Drill, as for 1st Week

TUESDAY AND THURSDAY

2 attacks each night—4 attacks in all.

Bombardment in Squadron Stagger Formation, or other at the option of the Bombardment Commander.

Formation Tee Lights to be Used by Bombardment

Altitude of lowest element of Bombardment Formation

20,000 feet

Altitude of Pursuit Flight—19,000 feet.

Searchlights to concentrate initially on the rear planes of the bombardment formation, moving progressively from rear to front.

It is not contemplated that a formation phase be held with pursuit flying above bombardment, unless the bombardment commander deems it safe to fly formation at night without formation lights. Obviously there is no problem if bombardment carries formation lights with pursuit flying above.

3d Week

A Repetition of the First Week but Held in Dark of Moon

In all parts of the test phase the method of attempted illumination should be alternated between successive attacks of each night. On the first attack, pickups and continuous illumination should be tried. On the next, lights should follow data alone, with no effort to illuminate the plane continually through visual direction by the operator, and so on for alternate attacks.

The pursuit pilot should make four radio reports to the ground:

1. "Contact"—the moment he sights his target.
2. "Interception"—when he has reached a position underneath the target from which he could launch an attack, were it not for safety restrictions.
3. "Dropped"—after he has followed the target for at least thirty seconds beyond the point of "Interception."
4. "Lost"—if, before he has followed the target for thirty seconds beyond the point of "Interception," he has lost sight of it for at least ten seconds.

The pilot should not confine obtaining information solely to the data prescribed above, but should report on all phases of his observation. As to "dropped" for example, while it is not planned that the lights illuminate longer than the period prescribed, if succeeding targets approach, the pursuit pilot tracking a given bomber should follow as

long as practicable within reason, reporting afterwards upon the visibility of the target after the lights had dropped it. The possibility of continuing to follow a target by exhaust glow, "sky-lighting," or other means after illumination has ceased, is important.

The program proposed will produce results of definite scientific value on what can be expected of pursuit aviation and AA searchlights working in cooperation in the close-in defense of vital objectives.

In considering this training program preliminary to the test phases, two things must not be lost sight of—first, that the time necessary to bring untrained men to the proficiency required is little (if any) longer than that necessary to train an infantry soldier; and second, that an organization once attaining this state of training can be kept up to par indefinitely thereafter by no more than four or five elementary drills a month. Experience gained through work with the 1st Wing, GHQ Air Force, during Wing Maneuvers in the fall of 1935, shows this to be the case.

The future issue of improved types of location devices may greatly simplify the problem of tracking a bomber through attacking pursuit. On the other hand, these devices may accomplish little in that direction, great as their efficiency may be in the location of a given target. Determination of their capabilities in this field can be accomplished only by future test.

But in the meantime the problem should not go unsolved because future matériel promises to be superior to that on hand. Superior as future instruments undoubtedly will be, the present sound locator is adequate, *with proper training*, to solve this problem in a reasonably satisfactory manner, at any but extremely high altitudes.

An antiaircraft defense of a vital objective, employing pursuit aviation, can be made highly effective at night even when there is poor ground visibility caused by bright moonlight or ground haze.

#### FUTURE TACTICAL DEVELOPMENTS

What direction can the trend of probable future developments in AA defense tactics be expected to take? Certainly not the elimination by pursuit aviation of the AAA as a defensive weapon of importance. Entirely aside from this question, there will probably always exist many important objectives which cannot be effectively defended by pursuit aviation, and others so important as to require the strongest possible defense—both AAA and pursuit. Furthermore, the progressive improvement in the defensive power of bombardment may result in the serious curtailment of the effectiveness of daytime pursuit, leaving the AAA as the principal weapon of daytime defense. This would reverse the present conception of pursuit as a weapon effective only during daylight and not at night.

On the other hand, there are localities—such as important industrial areas—which contain many separate

objectives located within a few miles of each other. All these objectives can be defended with the aid of an aircraft interception net, by a pursuit force no larger than that necessary for the defense of any one. To insure such economy of force at night would require only the provision of sufficient additional searchlight defense to cover the area.

In contrast, the extension of an AAA defense to cover nearby objectives would require multiplying the gun batteries of the defense in addition to the searchlights, and would permit not such economies as in the case of pursuit.

For such objectives, the mere provision of searchlights to work with pursuit might well prove to be the most economical and efficient solution. Then the gun batteries would be released for more effective employment elsewhere.

It appears highly improbable that enough searchlights will ever be available to permit building up a ring some thirty-five miles in radius about a single objective. Nor does it seem that such employment of searchlights would be either practical, efficient, or an economical use of force.

May not the answer be found, rather, in the disposition of such searchlights as are available in a comparatively close-in defense of the objective? The extreme vulnerability of the illuminated bomber to the unilluminated pursuit plane, as contrasted to its defensive strength in the daytime, would seem likely to render the ten minutes of combat time considered necessary by day, largely superfluous by night.

For objectives of such paramount importance as to necessitate the best possible defense, both the artillery-pursuit team and the searchlight-pursuit team may prove to be the answer to the major multiple-plane attack. Against this type of attack the AAA, acting alone, has no present prospect of coping adequately.

The enemy's knowledge that pursuit will operate over searchlights will prevent him from adopting such methods as the Flight or Squadron Methods of Attack, for these tactics leave widely separated planes extremely vulnerable to pursuit attack. The alternative-attack in defensive formation at night—renders bombardment more vulnerable to AAA. Such formations are easy for searchlights to find; they require formation tee lights, facilitating discovery by pursuit; and they have little, if any, increase in defensive strength.

No football team which uses only one method of attack can have much success against an alert opponent, who adapts his counter measures to meet an unvarying and foreseeable condition. The smart quarterback mixes them up—the time has come for the antiaircraft defense to learn to mix them up.

An enemy who never knows whether he is going to be greeted by gun-fire or effective night pursuit is going to be easier to handle.

# AIR MANEUVERS OVER GREAT BRITAIN

By Major General H. Rowan-Robinson, British Army

The greatest aerial maneuvers ever seen in Great Britain were carried out in August. Thirteen hundred aircraft participated—an increase of 50 per cent over the numbers engaged in previous exercises. There were also in play on the defenders' side 110 guns, 700 searchlights, 100 balloons, a net-work of observers, and, for one night, a general blackout.

These figures represent resources that could conveniently be mobilized and by no means all that could have been made available in war.

The general idea was that two Powers were at war. Westland consisted of the large part of the center, east and south of England; and Eastland was born in imagination of the waves of the North Sea. The two main objects of the exercises were, firstly, to afford combined training to aerial, military and civil forces engaged in the defense of Great Britain; and, secondly, to apply a serious test to that defense.

The raiders were drawn from airdromes near the southern and eastern coasts of England, and consisted of 500 bombers, which flew 100 miles over France or out to the North Sea and then turned to deliver their attack.

The aerial defenders consisted of three groups. The principal group comprised the fighters which were to intercept the raiders—ready by day on their airdromes to scale the heavens at a moment's notice; and, by night, on patrol over the area illuminated by searchlights. The second group contained the bombers, which represented the offensive side of defense. The third group was formed of reconnaissance aircraft whose main task was trade-protection, but which were also expected to chase any bombers viewed, less with the expectation of catching them than of forcing them to an uneconomically high speed that would reduce their range.

Aerial operations were unrestricted, except that no

flying below 4,000 feet was permitted within seven miles of London Bridge. At night, aircraft flew, with certain precautionary exceptions, without navigation lights.

Ground defenses were under the operational control of the Air Officer Commanding the Fighter Command. Of these defenses the anti-aircraft guns unfortunately were not able to play much part owing to lack of visibility. The searchlights suffered from the same cause; but it was noted that the efficiency of their sound locators enabled them to follow enemy raiders even in the clouds, so that they were often able to illuminate them when they did emerge from their cover even for a moment.

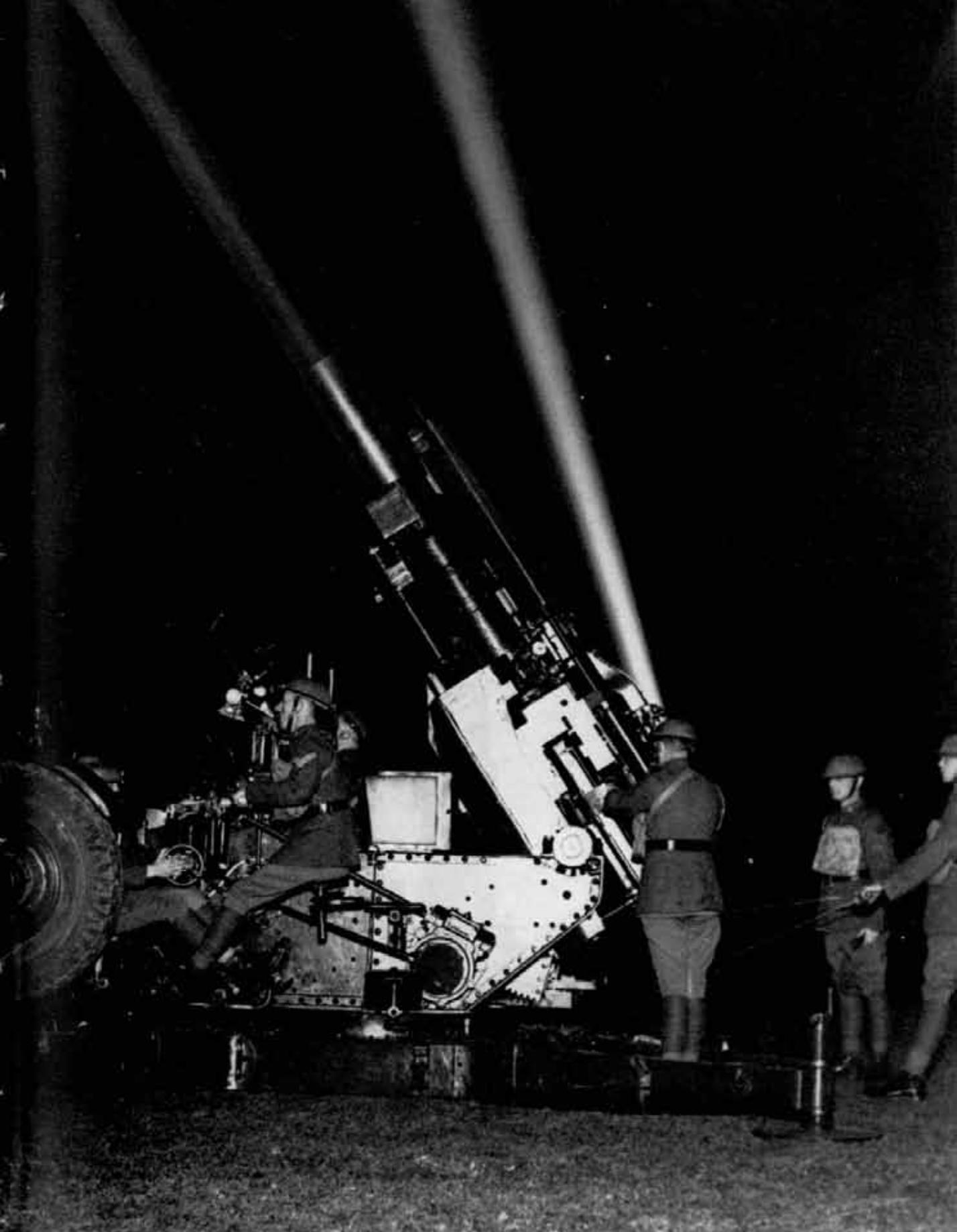
The duty of the observer groups, which were so situated that any airplane could be seen or heard by at least one post, was to report the position, height and numbers of raiders. These reports were intended primarily to furnish a basis for the decisions of the Command as to the sending up of fighters—from what airdromes, in what direction, to what height and in what numbers. In fulfilling this function they also gave a warning to the public in general of the strength and direction of air raids during their progress and the "all clear" on their conclusion. These groups proved most successful, every raid being spotted and traced to the end. The sound locator sections were also of great assistance in this respect.

Balloons were available only for London. They strengthened the defenses there greatly, both by preventing low flying—a matter of particular importance in bad weather—and by reducing the distance in vertical height in which guns and fighters have to execute their tasks. In the maneuvers, however, for the safety of the raiders, they were employed only in small numbers and at heights that did not exceed 2,000 feet, in very bad weather even being close-hauled. They were distributed spacially over the whole area to be defended and not employed, as they were in the Great War, as an "aerial stockade." Where there were no balloon barrages, the bombers were able to descend to the very tree tops in order to make sure of their targets.

The blackout, which extended over twenty-seven counties, was organized only for a single night and on that night only for four hours—12 midnight until 4 A.M. when, in any case, some eighty per cent of the inhabitants are likely to be sleeping in darkened houses.

The blackout was not a success. The great lines of communication were shown up—the roads by the forward or side lights of motor vehicles; the railways by streaks of

*It seems highly doubtful that the best of men and machines could ever bear the strain of operations continued over weeks and months*

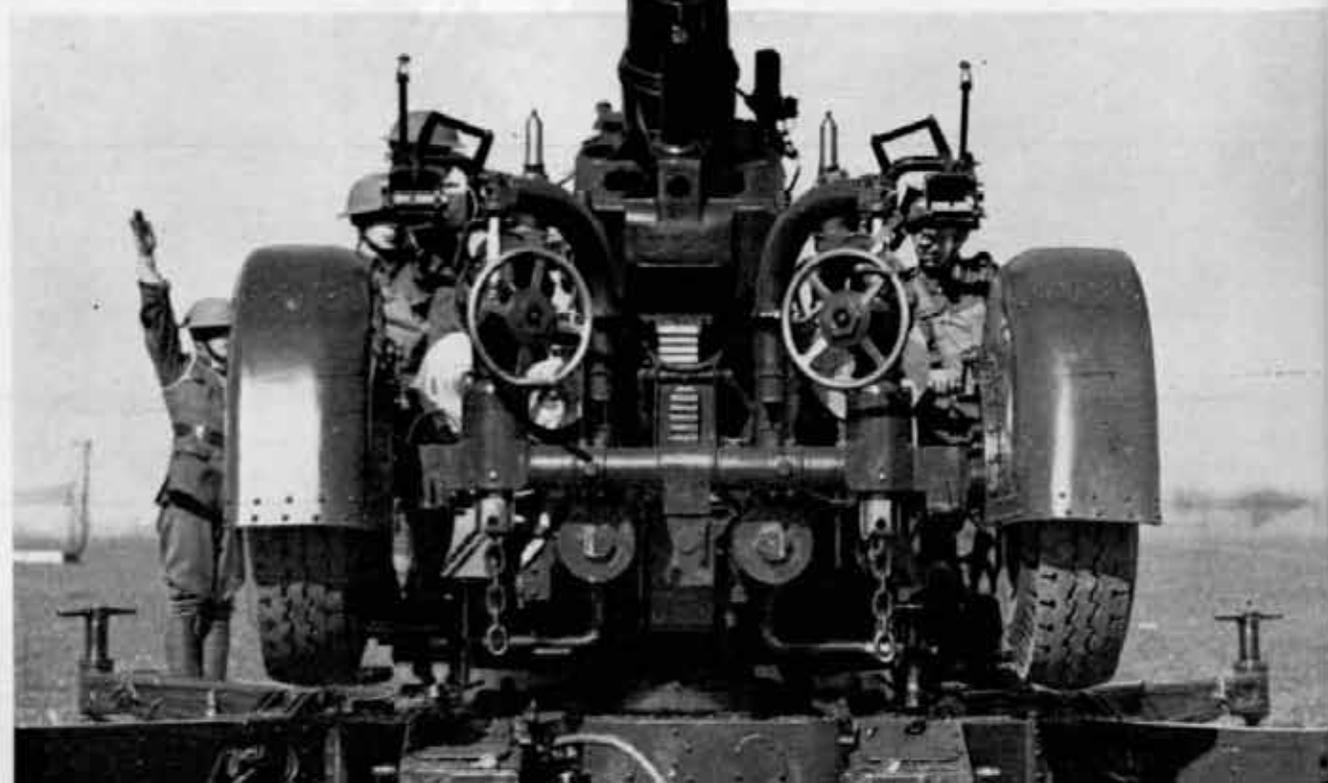


*This 3.7-inch antiaircraft gun was used during the maneuvers over Great Britain*

light shooting through the curtained windows of the cars; the rivers by navigation lights and by the reflected glare of the searchlights. These indications afforded unmistakable clues to the positions of objectives. Moreover, London, as it was shuttered into darkness, left what appeared to aerial observers as a number of scattered, well-illuminated villages which in fact were industrial areas in operation or other busy centers—the very targets of which the observers were in search. Piccadilly Circus for instance was marked down with certainty. Again, whereas millions of people cooperated with the airmen battling gallantly with the elements, there were thousands of careless people, who by neglecting darkening orders gave further assistance to the raiders in the discovery of objectives. The causes of this failure have been noted by the authorities and the next operations of this nature will, in consequence, be staged very differently. In the first place they will take place during the early hours of the night when towns are normally illuminated and when people who wish to carry out their ordinary duties without an outward display of light will have to cover their windows completely with some substance unquestionably opaque. In the second place, they will be executed on a small scale in small and separate localities, each locality in a particular area being observed on a particular night, thus enabling individual faults to be corrected. In the third place, it is likely that much more stringent instructions will be issued and

*A front view of the British  
3.7-inch anti-aircraft gun.*

that serious measures may be taken against those who fail to obey them. In the fourth place, the results of these new measures will be studied, and a definite attempt made to solve the problem as to how the incessant work necessary in war can be carried out without disclosing important objectives to the enemy. We may now return to our main theme—the raiding and the counterattack. The weather was abominable. Over the North Sea, storm; elsewhere, low clouds and driving rain. Intervals of good visibility were both rare and short. These conditions favored the assailants. The advance made in navigation and in blind flying since the Great War enabled the pilots to keep a sound direction without the assistance of landmarks; and the clouds in which they were hidden kept them shrouded from the view of the defenders until such time as they might choose to emerge to the assault of an objective. They were spotted indeed, and their course traced; but for the most part, except when the atmosphere momentarily cleared, they escaped interception. Raids were very numerous and were made in small groups of from three to twelve aircraft, in order that the whole of Westland might have experience of attack. Eleven raids occurred in the first forty minutes of the war, and each night more than a hundred raids were delivered over the south and southeast of England. Against a hundred groups of raiders, about sixty patrols of intercepting craft would be launched. In spite of the weather the operations were pushed on both sides with zeal and resolution, both on





*The predictor, height finder, and 3.7-inch antiaircraft gun.*

the ground and in the air. Valuable lessons were learned; the raiders in particular showed remarkable skill in profiting by the cloud-conditions. But many difficulties were encountered apart from the weather and, as is usual on maneuvers, there was much unreality owing to the needs of safety and of training. For instance, machines intercepted and presumed to have been shot down, were not made casualties because such procedure would have entailed a loss of useful experience to pilots. Again, it was not possible to adequately portray the offensive side of the defenders' strategy. In Great Britain this is the more important side. It is recognized that a large number of hostile raiders will unquestionably evade the defenses and strike home. The policy is therefore to compel the enemy to stop raiding and to adopt a defensive attitude by an assault on the military targets of vital importance in his homeland. Notwithstanding the great advance in the quantity and the quality of British fighters, the bomber is still the dominating weapon—the weapon of two thirds of the Royal Air Force. Yet its effects could hardly be rendered visible on maneuvers in assaults on an imaginary Eastland Power.

On the whole, results were distinctly disappointing to the defenses. That, however, may prove a blessing in disguise. Of late, a spirit of excessive optimism has been growing in Great Britain. The recent increase in speed and fire-power of the new fighters, such as the Spitfire, has seemed to place the bomber completely at their mercy when intercepted. Moreover, antiaircraft guns of greatly enlarged power and range are being produced in considerable numbers, and antiaircraft gunnery is showing a vast improvement over previous performance. There is considerable progress to be observed, too, in the sphere of Air Raid Precautions. And all these advances are being loudly boomed by the Ministers concerned. As a consequence, the public is regaining its confidence to such an extent that, unless some salutary corrective is applied, it

may be inclined to relapse into its former inertia.

It is only natural indeed that this sudden change from the dark and perilous days, not a year past, when London—the greatest center of communication, the largest, richest, and most vulnerable city in the world—lay defenseless at the mercy of the aerial invader, should have had a somewhat unbalancing effect on British minds. But, actually, progress though marked in every department, has still far to go before the demands of defense can be considered as met. A large number of Britons, after 900 years of immunity from invasion, have not even now fully realized the peril to which their country is exposed. The proof of this statement lies not only in the failure of the black-out already mentioned, but also in the lamentable deficiencies still existing in all branches of Air Raid Precautions. It is to be hoped that the success of the raiders in the recent maneuvers will have an effect at once enlightening and sobering, and that it will bring home the fact that Britain is still an exceedingly vulnerable country, requiring, if its defense is to be satisfactorily achieved, much continuous and devoted work, intelligent research, and personal sacrifice.

The opinion on the results of these exercises expressed in this paper is not the official view, but that of the bulk of the press reporters. The commander of the defenses in a broadcast statement at the conclusion of maneuvers is reported to have said:

I am satisfied with our progress, and I confidently believe that serious air attack on these islands would be brought to a standstill in a short space of time. I should like to leave you with a feeling of quiet confidence in our defense organization, while not neglecting wise precautions to minimize the effects of such attacks as do get through. . . . Successful defense depends mainly on what happens to the enemy when he is intercepted. I can confidently say that I am satisfied in this respect.

... What we have been doing is to work towards increasing interception to the 100 per cent which is our goal.

He was thinking, no doubt, that the defense had to suffer from exceptional weather conditions; that many of the safety precautions operated in favor of the assailants; and that no serious value could be attached on maneuvers to the aerial striking force which forms the backbone of our defensive system.

All these factors are indeed important and must be weighed in the balance. Moreover, whenever conditions improved, as they did towards the close of the exercises, the advantage in battle passed at once to the defenders who were able to display their full strength effectively—fighters, searchlights, guns.

The balance between official optimism and the judgment of unprejudiced but less well-informed observers may perhaps best be struck in saying that where weather conditions are unfavorable for defense as they so often are over the British Isles, the raider has still the advantage. There can therefore be no pause in ardent research for devices that may stop him, nor in additions to strength of a directly defensive nature, until, in good weather or bad, he is at the mercy of the defender. The powers tending to defeat air raiding are steadily growing. If they are continually re-inforced in spirit and matter, they will rob of its magic the most effective weapon ever placed in the hands of an aggressor.

Three other relevant points may be raised in conclusion.

The raiding air force stood up splendidly to the stresses of storm over the North Sea, in exercises that lasted seventy-two hours. But whether the best of machines and men could bear the strain of operations in such conditions continued over weeks and months without grave loss in efficiency seems highly doubtful. British raiders will be exposed to no such handicap, for it is certain that in any great conflict they will find an ally possessed of airdromes in close proximity to hostile borders.

The second point is this: Although in the stormy conditions which prevailed during the maneuvers, the raiders would almost certainly have met with marked success, it is almost equally certain that they would have suffered heavy losses, if not complete defeat, had they been flying under clear skies. Even if the science of forecasting weather were far more advanced than in fact it is, it is hardly probable that the most determined aggressor could so guide his political activities that they should reach their greatest height in an act of war at the precise moment when a deep depression promised a long period of storm cloud over the British Isles.

Some have been banking hitherto on high prospects of success from a single overwhelming blow. On the other hand, if one is whole-heartedly devoted to the preservation of his own country, is he likely to risk its whole future in operations which depend for their results on the vagaries of the weather? This is debatable, even though he may have made exhaustive preparations and possesses an apparent superiority of strength.



MACHINE GUN ON FENDER

*This mechanic is adjusting a machine gun mounted on the steel fender of one of the planes of the Polish air force. The gun is automatically controlled from the interior of the cockpit.*

# MOULDING MEN FOR BATTLE

By  
Major General  
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In comparing our own with the armies of other nations that may one day become our enemies, it is easy enough to count our regiments, brigades, and divisions, our airplanes, tanks, and ships, our progress in modernization, mechanization and motorization, and to use these as our basis for comparison. Yet one thing seldom receives enough consideration in such comparisons: that is the element of morale.

High morale is the state of mind that makes the soldier—and the units made up of soldiers—exhibit the highest of courage, moral and physical; makes them withstand the toughest of hardships and privations and endure the heaviest fatigue—enables them, despite all adverse circumstances, to force their will upon the enemy.

You will find it recounted in history how some organizations attacked without hesitancy an enemy three times their size, with the idea firmly in their minds that they were going to win. And they did win. Why was it—why *is* it—we often wonder. Yet the answer is simple. It is because the winner had morale in the fullest sense and a corps of leaders that inculcated and used it. We must remember that always morale and leadership are inseparable. They are military twins.

The waging of war is most complicated and comprehensive. True, warfare is both an art and a science. But the science—despite our scientific age—is only ten per cent. The art is the ninety per cent that carries the power—puts over the punch. The big part of this art is morale and the building of morale.

Yet there is so little written about this thing we call morale that we are at a loss when it comes to studying it. There is nothing definite to study. True, there are a lot of surmises and a lot of well-known, cut-and-dried “prin-

## Battles are won or lost by remnants

ciples” laid down—such as, the one to the effect that a leader must be unselfish, must have courage, energy, loyalty, and the confidence of his men. But all that is simple. It is the application of impalpable human qualities—dozens perhaps—all focused on a definite decision. Yet it is this very dealing with intangibles of the human mind that we find nowhere explained. We can study reports and histories of armies, corps, and divisions, and read the recorded successes—though often the mistakes and failures are passed over—in full detail. From these records of actual warfare, though they may contain no clear key to what morale is and how it is produced, we can find incidents in which morale was plainly all-important, and examples of good and bad leadership in building or lowering morale.

*The incidents and examples recounted in this article are things that came under my personal observation or came to me as first-hand information, mainly during the period of the World War.*

It is basic to an understanding of morale to know what it counteracts. It is necessary to have at least an elementary knowledge of the psychology of the battlefield. It must be recognized that man in battle is a being in whom the instinct of self-preservation dominates, at certain moments, all other sentiments. Thus, discipline has for its aim the fullest possible control of that instinct. At the same time, discipline cannot dominate it completely nor

continually. I do not deny the glorious examples of discipline and devotion that have elevated man above himself. But if these examples are glorious, it is mainly because they are rare; if they are admired, it is because they are exceptions.

Whatever the science of the superior commander, the genius of his strategic combinations, the precision of his concentrations, whatever numerical superiority he may have, however rigid his discipline, victory will escape him if his soldiers do not properly conduct themselves without being watched, and have not the resolution to conquer—in short, morale. In the armies of today the tide of battle is in the hands of the fighting soldier, and never has his individual steadfastness—his morale—been of more fundamental importance. For today the soldier no longer has the intoxication of ancient attacks *en masse* to sustain him. Once, the terrible anxiety of waiting made the soldier wish for the violent blow, dangerous but soon passed. Now, his mental and physical powers are tried for long hours and days, and in such a test, he has but the resoluteness of his own heart to sustain him. For man is incapable of withstanding more than a given degree of fear without giving way. Today he must swallow in five minutes the dose that he took in an hour in the time, let us say, of Turenne. Firearms, tanks, airplanes, gas, long-range cannon, all have increased the distances of mutual aid and support between the various arms, and between the fighting men of those arms. The more men think of themselves as isolated, the more they need a high morale to bolster them. If they don't have it, all is lost.

Soldiers are mainly abnormal during battle. Strong as the soul often is, it cannot dominate the body to the point where the flesh will not revolt and the mind will not waver in the face of destruction. Man has the weakness of flesh and blood.

Man is abnormal in war because the conditions of war are abnormal. The abnormal, it can be said, is the military normal. Wise commanders have concluded that it is normal for orders to miscarry or arrive too late, or for them to be misinterpreted, or not to be fully executed; that it is normal for information to be delayed or to be insufficient; for units to be late, or to lose their sense of direction, or to become mingled with neighboring units; that it is normal for material means to be inadequate, for a worthy enemy to do the unexpected, for troops to be exhausted, staffs overworked, commanders harassed, roads congested, and traffic interrupted, and for supply to falter at critical moments. Yet those who enter combat for the first time—no matter what their studies or observations may have told them about it—are astonished to find how troops get out of hand; to find that you seldom know where they all are, or where to put your artillery down, and are otherwise at a loss. In war all things are different—including men.

In the World War even in our best outfits, hundreds would try to avoid action. Some would say they got lost, some would give other reasons. It is a thing always to be expected. It has been said that about one man out of ten

has little fear of death; if they get killed or not, it is fate, luck. Perhaps about eight in ten are what we might call normal men; to them we can apply the principles of building morale. But there is at least another tenth who will run away or never reach the fight, if they possibly can. They want to run no chances of getting hurt. Thus, in war it is this human material that we must take and make the most of. Good leadership here takes on a great rôle.

#### THE QUALITY OF THE LEADERS

It made very little difference in the quality of troops, in the World War, what part of the country they came from, though different divisions were often spoken of as made up of splendid personnel, or the opposite. From observation of at least half of the AEF fighting divisions, it is my conclusion that in some cases there may have been a five per cent difference. But the great difference between success and failure lay not in the supposed quality or lack of quality of the troops but in the quality of their leadership and of the morale that flows from that leadership.

Napoleon said, "Morale is to the physical as three is to one," and Foch said, "Execution is to all planning as nine to one." They are both correct, surely; for the best-laid plans, unless there is somebody up front to give punch to those plans and put them through, are of little value. With the poorest-made plan—other things being about equal—you can generally win, if only you have company and battalion commanders you know will carry out orders and command their men—command them with such ability that they will all have supreme confidence in one another. Then they will get their objectives!

But subordinate units of a large command are seldom all of such quality. You may say that this regiment or battalion, or that division, can always be depended on to reach its objective—other ones seldom. In France, whenever certain divisions were to attack, it was said, "They will go until they get fifteen per cent losses and then they will want to be relieved and that will be the end of them"—and it was. Of a few other divisions it was said, "They will get what they go after, even if it costs half of the command, and they will keep what they get." Of course, a certain amount of experience and baptism of fire makes a difference, for when troops are used to shells and bullets they are more liable to stick when they go in. But with anything like the same amount of training and experience, you can be sure that a "good" fighting unit, as compared to a "poor" one, has a leader in command who made the difference. Again, Napoleon truly said, "It isn't the men; it is the man."

In modern warfare where staffs have been so largely increased, where command has become so scientific, where coördination and communications are so necessary because of dispersion, it is still "the man" who wins battles. Staff officers have their importance, and must themselves have certain qualities of command, because the commander must delegate in battle a certain amount of command. Nevertheless, the personality of the commander must be

felt clear down to the last man in line. This necessity for leadership and the morale that springs from it makes us realize that in this machine age machines cannot win alone. Their direction and control must be human. As always, it will be the army with the best leaders, and therefore with the most courageous, loyal, and devoted men, that will be victorious.

IT IS THE MORALE OF THE GROUP  
MORE THAN OF THE INDIVIDUAL.

The mass may and always will cower at the sight of the phantom Death. But the discipline of the leader dominates that horror by creating a still greater horror—of disgrace. For it is the morale of the group—of the company, the battalion, and even of the higher units—that is the real morale. In the group you can inculcate an *esprit de corps*, a dash, that you cannot in the individuals. A man will do more for Company A than he will for himself; he will do more for the group that knows and banks on him, for those who will know him for a brave man or a coward, than he will as a lone fighter or as a fighter among a group of strangers. That is why it takes time to

reconstitute a command to anything like its former efficiency after heavy losses. When a unit receives thirty or forty per cent replacements, it takes quite a while for it to get back anything like its old group feeling.

But once morale is strong within a unit it will carry it far. When they have been in battle for days and nights, when the enemy has dealt out heavy casualties, men, if only they have morale, will yet go on again when the signal comes. They will go to the very limit of their endurance.

And that is another thing that should be writ in large letters on the walls of our schools: It is the last five per cent of exertion that often wins the battle. In France, it was not the first attack, or the second, or the third, but that last straggling fourth attack which did the work. True, that last push made only two or three hundred yards and it was only made by a tenth of the command. But it made the enemy believe we still had a punch left and he withdrew. It was thus at Blanc Mont when the 2d Division attacked the Germans east of Reims. It was the last effort of all that did the work. Most men thought it uncalled for and impossible to make but they drove forward just the same.

We must remember what was known ages ago. It is this: *Battles are won or lost by remnants—remnants of*



*"You will find it recounted in history how some organizations attacked without hesitancy an enemy three times their size."*



*units, remnants of material, remnants of intellectual effort—and victory goes to the side whose remnants have the will to hold out one gasp longer than the remnants of the other side. It takes a genuine morale to produce such remnants.*

#### MORALE RUNS THROUGH ALL GRADES

Some have thought that this thing we call "morale," and the ability of a leader to instil it in his troops, goes no higher than the battalion. To be sure, when the corporal or the lieutenant or the captain can get his men together and talk to them, they become impressed with the things that constitute morale, and morale is ingrained in them and the unit becomes efficient. But personal leadership does not stop with the battalion commander. Before the 1st Division made its first attack, General Pershing came down and called its officers together. In his fine talk, he transmitted the spirit with which he was himself imbued. The regimental commanders then talked to their field officers, the field officers to their battalion commanders, the battalion commanders to their company officers, on down the line. General Pershing, in his account of the war, says:

"It is never difficult to discover the attitude of a commander, as it is almost certain to be reflected in his unit. If the commander lacks aggressiveness or is disloyal, there will be grumbling and criticism of orders from higher authority among his officers and men. If he is aggressive and loyal his command will show it.

"I recall one incident which illustrates the point. In conversation with one division commander he was asked the condition of his unit, to which he replied that the men were very tired. Whereupon I remarked that there could be no reason for that, as they had been in the line only a short time. I added with some emphasis that it was probably the division commander who was tired.

"Not long afterward his division lost its cohesion in battle and became much disorganized and he was relieved. Another commander was appointed who was tireless and efficient, and under him the division served with exceptional distinction."

The truth of this I can best bring out by recounting a few actual occurrences among American troops in France. They will not only illustrate the point, but may also somewhat surprise many readers.

One of the best divisions we had was repulsed again and again until its troops became discouraged. But the whole thing came from topside. Early in the game, this division had lost many men taking an objective. Then it was pulled back, by order, and lost as many men or more falling back over the same ground as in taking it originally. After that, what could be expected?

The soldier is the one who finally advances or not, who wins fights or not, and unless he feels that he gets a square deal and has leaders who know their jobs, there is no use expecting much from him. If you do, you won't get it. The following is an excellent illustration of this:

In a division near Banthevillle, a flank patrol was being

sent out under a sergeant from a battalion attack into a woods. The battalion had failed twice to take the woods. The colonel said to the sergeant, "You're going to take it this time."

"No," replied the sergeant, "the men will quit."

"What do you mean by that, sergeant?"

"Well, sir, this battalion has been in twice, they have suffered heavy casualties, they haven't had much sleep, they haven't had enough food. Those things don't matter so much, but back there a ways is a battalion that hasn't been in at all, and our battalion thinks the reserve battalion should do its part."

Those men had practically agreed among themselves, perhaps even without talking about it, that they weren't going to stay in that woods, and within half an hour they began to come back. That wasn't mutiny. It was probably not even a concerted action. It was just a feeling among the men that they had stood all they could stand, at least compared with other organizations in that particular outfit; and they simply quit. They had lost confidence in their superiors. And as soon as troops do that, they are done. They should have been told clearly that the reserve battalion would have its full share of fighting to do later on.

About that same time, a brigade commander ordered one of his regiments to attack the next morning. Along in the evening about ten o'clock all the field officers of that regiment came to the CP to see the brigade commander. They said their men were tired and used up, that they had been in battle about four days without much sleep and with a good many casualties. They had not had many casualties, as an actual matter of fact. Casualties are a comparative thing; some think that ten or fifteen per cent is high, while others go up to fifty per cent.

These particular officers said, "The regiment is in no condition to fight; but we, the field officers of the regiment, in order to show that we are not afraid, will follow the barrage when it is laid down." "I know something about your regiment"; said the brigade commander, "is not so badly off; our casualties have only been about twelve per cent—small compared to what some have stood. Your troops haven't had much sleep, but there are a lot of others who haven't had much sleep. The regiment will go in tomorrow notwithstanding what you gentlemen say. You have said it because you are tired or perhaps because you are over-sympathetic for the men under you. Think it over and come back in about an hour. The regiment is going in. There are enough captains in it who can act as field officers, and if they act as such in one battle they will probably act as such in all the rest. So you come back in a while and tell me what you think."

In an hour they had decided to make the try. They led their battalions next morning and the regiment did very well.

Here, a knowing leader read his battalion commander aright, saw that their sympathies had outrun their judgment of what their men were still capable of doing. All good leaders take care of their men, but at the crisis of



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battle the sympathy of a man for himself and everybody under him has to be put aside, unless conditions actually are so bad that his unit is incapable of the job it is ordered to do.

But when the troops have given all that you could expect of them and more, they should be relieved if it can possibly be done. And here we have the other side: At Cantigny, half the officers of one regiment were killed or wounded, and about one-third of the men. The available enemy opposing us was many times our number. We had the wounded and dying among us and there was little to eat or drink. The men were getting shaky from fighting and fatigue. The colonel told the brigade commander that the regiment should be relieved that night because there were three other regiments that had suffered comparatively small losses. Things had become normal and the men needed sleep, food, and rest. They had accomplished what they went after, they had been in three days and nights, and there were those three other regiments that could go in. The general sent a staff officer down to look around.

"How many men have you?" he asked.

"About sixteen hundred," said the colonel. "My losses are eight hundred or so."

"You are pretty well off," said the staff officer.

"What do you mean, I'm pretty well off! Let me tell you one thing, and you put it right down in your notebook! These men have been fighting three days and three nights and they have been successful. But five of them are not worth now what one was worth when we came in. There are three other regiments that have had their sleep right along and almost no losses. It is an injustice not to relieve my men tonight."

They were relieved that night.

#### MORALE MEANS BUILDING SOLIDARITY AND CONFIDENCE

Solidarity and confidence, essential to morale, cannot be improvised. They are born of mutual trust between leader and led, which makes for pride and unity in an organization. And from unity comes in turn the feeling of force, the force that gives to the attacking men the courage and confidence, the domination of the will over instinct, even

in the greatest danger. It is this which finally leads to victory.

Confidence means just that. Hannibal, to inspire his troops with confidence, explained to them before each battle as much of his plan of action as he could without making it possible for treachery to injure him. All commanders should do that: give enough of the plan of action so that the troops can appreciate what the whole idea is. If you tell your men what you are going to do, that the job is going to be a hard one with many losses, but that nevertheless the job is going to be done, then, when gas comes down or perhaps some airplane bombs, your men will realize that you foresaw these difficulties. So they keep on in spite of them. But if you just give them fragmentary orders without any explanation at all, their confidence will be much less and they will be much more surprised when things go hard. This is especially true if subordinate commanders are afraid to go beyond the wording of their orders.

It is also well for a commander to give some warning to his troops of what may happen in a defense. In fact, it is the best protection against infiltration and surprise. The Germans infiltrated by finding some little place more or less unguarded and sending in a company, a regiment, or maybe a brigade, often secretly during the night, to get behind our elements. Then, when fire suddenly came from the rear of the American, French, or British forces, they were inclined to escape in a hurry. In their imaginations they would often think that ten times their own numbers were in their rear. At Blanc Mont, however, we expected infiltration and it came. But the troops were told about it ahead of time, and told, too, that we would pinch the enemy out because they could not infiltrate as many men as we had. Then infiltration didn't worry anybody particularly. The division was well organized and disciplined with high morale, and we simply placed two or three organizations on the flank or rear to hold off the infiltrating enemy.

Another time, after forcing the crossing of the Meuse River near Dun-sur-Meuse, a battalion attacked up a hill. The hill was shaped something like a shoe bottom up. Three companies had a hard time getting up the main hill in the fog. The fourth company, acting as a combat patrol, got farther out than it was intended to go and went up against the heel of the hill, which was a little higher than the rest of it. This company got clear to the top of the heel against light resistance, and found itself somewhat in rear of the main German position. In the main position, the Germans facing the other three American companies heard the fighting back on the heel and immediately retreated. As a matter of fact, they had a superiority of two to one and a splendid defensive position. Here was a case of surprise by accidental infiltration, but the enemy troops lacked the morale to stand a threatened envelopment. It takes "The Xth Legion" or some other finely disciplined organization to hold its morale in such situations. Such units have confidence in each other.

All such warning orders should be issued in plenty of

time for subordinates to be prepared for their parts. Failure to do this was frequent in the AEF. Troops often saw rolling barrages move off toward the enemy before they knew anything about the hour of attack or their objective. Such failures kill morale. Troops have little confidence in their so-called leaders after these things happen a few times.

Another main morale destroyer is orders to do the impossible. What could be more disheartening than to be ordered to take an objective twenty kilometers back of the enemy's line when you and your whole command know that a gain of even five kilometers will take every ounce of energy left in your troops. A leader must be reasonable in his expectations and give objectives reasonably obtainable. It is best to say, "We hope to get So-and-So [the objective twenty kilometers away]; but by tonight we will get to that ridge. You can do that, and you will do it." And they probably will. But if you say "twenty kilometers" instead of "that ridge," knowing all the time there isn't a chance of getting there in a week, or perhaps in the whole war, don't blame anyone but yourself if most of your troops are satisfied to clamber into the first big shell hole and stay there. Every front line is largely composed of individuals or groups of two or three who can get into a hole and stay there if morale fails. There aren't any second lieutenants waving their swords and urging them on in modern warfare. If your troops don't want to advance, they won't. What you have to do is to get them in an attitude of mind of wanting to advance. That attitude must be there, in their minds, beforehand. And ordering the impossible is no way to put it there.

#### BUILDING MORALE BY DIRECT CONTACT WITH MEN

The ways of building morale available to a leader are manifold. Some I have already indicated; many are too well known to need comment. One or two, however, stand out in my mind.

For one thing, the commander who is also a genuine leader will be certain to mingle often with his men so that he may be known to them. He must be in the front lines frequently, and particularly when there is hard fighting. He must also see that hot food and supplies reach the troops whenever possible; and he must make the most thorough preparation for every contingency he can foresee. He must continually show an interest in and sympathy for his men and for their well-being. That is the only way to build up loyalty and confidence—morale—so that his command may be proud of its reputation.

A leader must also exhibit knowledge, energy, and resolution. He must punish those who deserve it as examples, but never in anger. And he must reward those that merit reward. If he does these things, then, when the signal for an attack goes up, and later when his command is more than wearied and more than decimated, his troops will keep on attacking and the number of those who try to avoid battle will be small.

In combat itself the leader must be where he is most

needed, and this place common sense will dictate. It is always best, however, to err on the side of being well up among the troops and taking personal command in emergencies rather than staying too far back with the idea of keeping in touch with the higher command. Only by such forward contact can the commander be of any real use as a leader. This keeps morale at its highest.

One particular morale builder sadly neglected in the early stages of the World War was the value of immediate recognition after any heroic action by an organization or an individual. I had once a very nasty order to give, as commander of a regiment. We had made two or three raids but all had come back empty-handed—the Germans had been pulling back at night and putting out intelligence posts in the daytime. But down from the French Army commander came the same old order again: "Must have prisoners." High command thought the Germans were shifting troops to the British front for a drive.

So I had to tell the major in command of the advance battalion, "We are going to get prisoners tonight. You will send an officer, with not less than five nor more than

to the morale of his organization.

These are a few of the things that leaders can do to build morale. It is also possible, though not always, to restore morale in a unit that from one cause or another has lost it. Perhaps I can best use another World War example to show this.

During the Meuse-Argonne attack progress was halted for a time. In some organizations the men were in a pretty low state and it looked as if they might have to be taken out for the rest of the war—as some whole divisions were. But it was announced instead that if they captured a certain objective they would be reinforced and that none of the units would be withdrawn. After a man has been beaten three or four times, you have to give him a taste of victory. So these troops were given a few easy jobs to restore their morale and put the idea in their minds that they weren't completely downed. One night, soon afterward, they took Aincreville and took it with bayonets and without artillery preparation. They seemed astonished that they could do it. The next day they took Doulecon, more or less by surprise, and then a few other little towns. We



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fifty men, who will go into the enemy's line and not come back without prisoners."

That was a pretty hard order. The major asked for volunteers and an intelligence officer, Lieutenant George B. Redwood, volunteered. He took five men and went nearly to the enemy's third line, got four prisoners and brought them back. Within three days the French had paraded the whole division and given the raiding group the Croix de Guerre. Recommendation was immediately made for the Distinguished Service Cross. Redwood was killed at Cantigny about two months afterward, but he hadn't received his DSC. It was awarded after his death, but it was of no good to him then nor did such delay add

knew they could take them if they had the confidence—if they knew they were going to be backed up. Soon they began to feel they could win for sure, and you saw quite a different air about them, even within a few days. When it came time for them to get orders to cross the Meuse River, they *knew* they could do it and they did do it remarkably well.

The attempt to restore confidence must be made through a succession of little steps. As Foch says, you have to "play a new tune." If you get licked at one thing two or three times, don't try it again. At Blanc Mont, General Gouraud said, "I am going to order the AA and BB Corps to attack on the right and left of the American 2d

Division, but it is my impression that since they have been three times repulsed on the same terrain by the same enemy and are themselves unchanged, the chances are that they will not go far."

#### MORALE OF THE LEADER HIMSELF

Up to this point I have written mainly of the morale of the troops and not so much of the morale of the leader himself. As a general thing, of course, if an organization has high morale there is little question but that the leader has it too. The troops get it mainly from their commander. But there are a good many things that can adversely affect the morale of even high commanders, and some that can destroy it completely. Approaching or actual physical or mental breakdown is naturally a most important item in this regard.

You will find in general that when commanders were relieved in the AEF they were not relieved after the first day's attack, but after the second or third day, when they were suffering from fatigue, lack of sleep, and perhaps nervousness as to what the enemy would do next, or lack of confidence in their own troops. One division commander, talking to a corps commander, pounded on the table and said his division was not going to make an attack the next day. But it did attack the next day and did good work. The division commander had lost confidence. He didn't know how much his troops could still do or even what their condition was.

Another regimental commander was down in the mouth because he had not been made a brigadier when he had good reason to expect it. I happened to take over the brigade he was in, and the division commander called my attention to him. So I told him, "Higher authority has warned me you are in a depressed condition and that it is affecting your regiment. We are going into battle in two days and if you can't brace up and get a little more spirit into your regiment, I will relieve you and you will never get another command. But if you can buck up and put the spirit into your regiment that should be there, if I can do it, I will have you made a brigadier." That man came to himself and his regiment did splendid work. It lost nearly forty per cent in killed and wounded at Soissons. A few days later he was made a brigadier.

In the AEF commanders from corps down to regiments were relieved for various causes. Some assumed authority that belonged to higher commanders, or were improperly critical of them, or even disloyal. Others reported their commands unfit for combat because they were tired or discouraged themselves. Still others kept to their dugouts when critical conditions demanded that they be up with their troops in order to take immediate and effective action against panic or defeat. *Fearing what higher authority might think instead of using the proper common sense and initiative of a leader probably wrecked more commanders than any other one thing.*

Higher authority generally gave plenty of latitude to subordinates—but they often failed to use it. The principle to go by here is that considerable latitude should be

given to commanders on the spot, according to their rank and experience, and that commanders should be perfectly willing to assume the responsibility of asking themselves (and acting in accordance with the answer): What would my superior do if he were here and knew the circumstances that I know? Of course, for not complying or delaying compliance with orders the subordinate has the burden of proof that ordinary judgment and reason dictated it. Sometimes this is a hazardous thing to do, but there are frequent cases where proper leadership requires it. Always, however, the superior issuing the orders should be at once advised. Any officer receiving an order that he believes to be given under misapprehension as to conditions with which he is himself cognizant, must immediately inform his superior of these conditions. If he is afraid to do so, he either lacks confidence in himself or in the true leadership of his superior.

A division commander in France was ordered at about 1:00 p.m. to cross the Meuse River and the Canal de l'Est at 4:00 p.m. on the same day. He had been on the spot for some time, and informed the staff officer who was issuing the instructions in the presence of the corps commander, that he had reconnoitered the crossing of the Meuse for fords and crossing places and for enemy positions with forces up to two companies in size; that the ravine was full of enemy machine guns and that the enemy's artillery was in force behind the heights of the Meuse within two kilometers of the river; that he believed the crossing might be accomplished at 7:00 p.m. after dusk; but that from his experience on the spot, he thought an attack at 4:00 p.m. would not only lack surprise but would probably fail. The staff officer, however, stated it was so important to cut the Mézières-Metz railroad that the daylight attack should be made. The time was so short that only fragmentary orders could be given. One brigade did not receive its orders because the messengers to it were killed, and did not move at all. The other brigade attacked. The commander of the leading battalion was killed and some two or three hundred officers and men were casualties by the time the troops took cover.

At 7:00 p.m. the attack was resumed as the division commander originally recommended, and it was successful. In this case, the commander on the spot was overruled by the judgment of a staff officer unfamiliar with local conditions but authorized by a higher commander—very properly—to give any necessary orders. Though this was a splendid staff officer, I do not believe, had the higher commander himself been present, that he would have taken the same action.

It does the morale of leaders great harm to be constantly feeling that the axe may fall at any time for no good reason. Mature judgment should be used in relieving commanders for inefficiency. Every commander is bound to have under him a certain number of mediocre officers who will improve reasonably under proper instruction and guidance. Besides, trading one mediocre officer for another, as may often happen, is a bad trade. Nothing is gained, much is lost.

## CONCLUSION

Because of our slow system of promotion and the lack of real selection in our army, we will go into any future war with the higher command filled with men as a whole too old. The command of armies and even corps, and some higher staff positions, may be efficiently held by older officers—General Pershing told me he would prefer division commanders not over fifty.

Time is a vital element in war, and war is a ruthless thing. Individuals may have to be sacrificed. The sorting out to obtain the best leaders in our next war must be done early, and without fear, favor, or affection. The younger officers, both line and staff, should be selected for higher command according to their success in battle—without waiting too long. These are the men who have the confidence of their subordinates, who know how to keep their troops supplied, bring them into battle under the most favorable conditions, direct them well in battle, take greatest advantage of success, and minimize the effects of setbacks; men not afraid to take the initiative due in their position, always loyal to their superiors but not afraid of them either. Watch should be kept also for the leader who may never have had a military education but is nevertheless a natural leader. Only thus can we find the leaders that will instil a high morale.

Never for a second should it be forgotten that combat is the objective, the cause of being and the supreme manifestation of armies. Every measure that departs from that thought—that relegates it to the middle ground—is fatal. All the resources accumulated in time of peace, all the tactical evolutions, all the strategical calculations are but conveniences, reference marks to lead up to it. Fundamentally, man is the potent force. He is the incomparable instrument whose elements, character, energies, sentiments, fears, desires, and instincts, are stronger than all abstract rules; than all bookish theories. The inspirations that reveal and mark the great strategists, the leaders of men, form the imponderable element, the divine part.

It is the mind that wins battles, that will always win them, that always has won them throughout the world's history. The spirituality, the moral quality of war, has not changed. Mechanics, modern arms, all the artillery, gas, tanks, aircraft, etc., invented by man and his science, will not make an end to this thing, so lightly considered at the moment and called the human soul.

No calling other than the true military profession so excites brain activity. It is preëminently the calling of action, at the same time diverse in its combinations and changing according to the time and locality in which it is put to practice. No other profession is more complex or more difficult, since our own has for its aim and reason the instruction of men to overcome by training and endurance the fatigue and perils against which the voice of self-preservation is raised in fear—in other words, to draw from nature what is most opposed to this nature.

Our army school system is most excellent and gives all the technical and theoretical knowledge needed for a higher commander or a higher staff officer. The right kind of tactics is not improvised. It asserts itself on the battlefield in the presence of the enemy, but it is learned before the enemy is encountered. But studies of the causes of success or failure in battle, other things being approximately equal, show that true leadership was present or absent, and that resolution—not easy to teach in schools—often failed just too soon.

We must also learn to distrust mathematics and material dynamics as applied to battle principles. We must learn to beware of illusions drawn from the target range and the maneuver field. For there we deal with the calm, settled, unfatigued, attentive, obedient soldier; in short with an intelligent and tractable man-instrument, and not with the nervous, easily swayed, moved, troubled, distraught, excited, restless being, who is the fighting man from general to private in war. It is this difference that requires morale, and the true leadership that creates it. This is the thing of highest importance in the conduct of war.





*Recruits in a recreation room  
peruse a military magazine*

# RED

*These are parachute troops  
of the Far Eastern Army*





*The unit political officer reads  
the day's news to the troops*

# ARMY

*A tank commander explains  
the details to his crew*



# ATERIE



*A mobile anti-aircraft unit  
passes through Red  
Square* ↑



→  
*Here is one of the numer-  
ous Soviet tanks*

↓  
*Searchlight units that  
accompany the field army*





↑ *A group of machine-gunner motorcyclists*

← *A close-up of the turret of a tank*

*Medium artillery is towed by personnel-carrier prime movers*



# MANEUVERS



*A light machine-gunner draws a bead*



*...states macker time of grenade*



*Light machine-gunners experiment*



*This is a radio link in the artillery communication system*

*A gas decontamination squad in action*



# Word Magic

OF THE

# MILITARY MYSTICS

"These principles are immutable," our Training Regulations stated in 1921, after listing for the time the nine principles of war: The Objective; The Offensive; Mass; Economy of Force; Movement; Surprise; Simplicity; Security; and Coöperation. How does a principle become immutable and just exactly how can a principle be determined in an art in which controlled experimentation is impossible? In the case of the principles of war, some evidence is available.

Major General J. F. C. Fuller, of the British Army, relates that in 1911 he became convinced that war might break out at any moment and so started to prepare himself for the inevitable struggle. He turned to Field Service Regulations (British) and found the statement that "the principles of war are neither very numerous nor in themselves very abstruse, but the application of them is difficult, and cannot be made subject to rules." Familiarity with the methods of "writing" regulations should cause

no surprise to find that this statement seems to have been derived from Marshal Marmont's dictum that "general principles for the conduct of armies are not very numerous, but their application gives rise to a great variety of combinations, which it is impossible to foresee and to lay down as rules." Strangely enough, the simple principles mentioned were not to be found listed or discussed in the regulations. So General Fuller turned to the correspondence of Napoleon and from this study deduced six. Napoleon, incidentally, always refused to make a statement of his principles. "If I were to write the principles of war," he said, "their simplicity would be astonishing."

In February, 1916, General Fuller published an anonymous article in the *Journal of the Royal United Services Institution* on "The Principles of War with Reference to the Campaigns of 1914-15." By this time his principles had grown to eight in number and he marched them all

Blind adherence to "principles" of war has lost more battles than treason, cowardice or stupidity

toward the decisive point of the World War which he claimed, and proved by his principles, was the Western Front—rather a large point. The innocent reader gains the impression that General Fuller's principles were a kind of devil's advocate and—characteristic of much human reasoning—had been dredged up to prove a thesis of which he was already convinced.

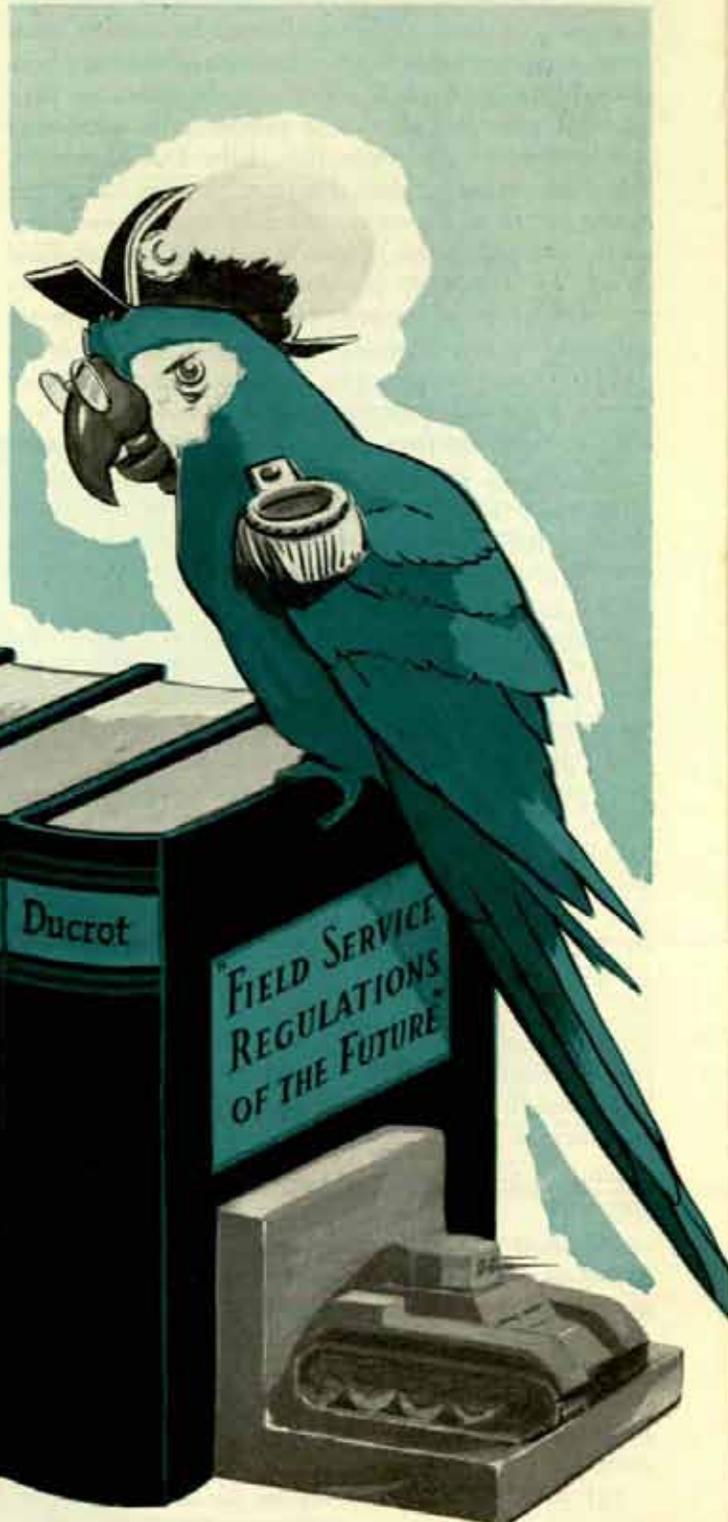
When a new edition of British Field Service Regulations was published in 1920, General Fuller's principles appeared therein, with a slight modification. The same principles, with one additional, were copied into United States Army Training Regulations in 1921, and it was at this time that this particular set of principles became immutable. This must have been news to the original author. He has continued his studies and restated his principles.

But the immutable principles disappeared from our regulations in 1928. However, they still are to be found, now six in number, with corollaries, in current British Field Service Regulations. They also appear, seven in number, in an American official text on strategy, published in 1936, and strangely enough, this set was copied from British regulations of 1924. In the text on strategy, they no longer are principles; their status has been reduced to that of ideas.

So the immutable principles of war seem to be highly

By  
**Major Thomas R. Phillips**  
COAST ARTILLERY CORPS

Illustrated by Hobart Britton



mutable and their mutations are quite amusing. Not the least of the peculiarities of the principles of war is that other armies have discovered entirely different sets. French regulations, for example, list but three: Impose your will on the enemy; conserve your liberty of action; and economy of force (in the sense of the most effective distribution of means between diverse missions).

According to Xenophon, "the art of war, in the last resort, is the art of guarding one's liberty of action." This unquestionably was a basic rule of conduct for a small force in constant danger of being surrounded by a larger enemy. Ten thousand Greeks hunted by a many times more numerous foe in hostile Persia could not have been guided by a better. It also illustrates the genesis of most so-called principles of war. It provided the solution of a definite military problem, that of the Ten Thousand. But what pertinence does this principle have for a force whose liberty of action is assured by a continuous front such as existed in the World War or the Spanish Civil War? The conditions of these conflicts quite obviously provided for it and the principle required no positive application. So too, if General Fuller's study of Napoleon's campaigns and the principles he deduced from his study were accurate and objective, it could be said of them that they provided excellent guides of conduct for Napoleon—but not for us. Our problems differ from his. His formulæ cannot solve them. Dependence on catchwords deduced from a study of his campaigns serves only to prevent us from solving our own present military problems.

Soldiers have always sought a philosopher's stone in the form of principles of war which they needed only to follow to find the road to victory. Military writing is sprinkled with assurances from the great and near-great that "there has existed, in all time, some fundamental principles on which the good combinations of war repose." Prince Hohenlohe states that there are five axioms that must always be observed in war. And Napoleon, by whom everything military is proved, wrote that "the principles of war are those which have directed the great commanders whose great deeds have been handed down to us by history"—which sounds very much like passing the buck. Jomini, the expounder of Napoleon's methods, claims, "that there exists a fundamental principle of all the operations of war, a principle which ought to preside over all combinations in order that they be good."

Jomini's fundamental and single principle, in brief, consisted:

- (1) In carrying by strategic combinations the mass of the forces of an army successively upon the decisive places of the theater of war, and as much as possible upon the communications of the enemy, without endangering its own;
- (2) In maneuvering in such a manner as to engage the main mass of the forces with fractions only of the hostile army;
- (3) In directing equally, on the day of battle, by tac-

tical maneuvers, the mass of one's forces upon the decisive point of the field of battle, or upon that of the hostile line which it would be the most important to overcome.

Jomini, at least, had the courage to state his fundamental principle.

Foch wrote a book entitled *The Principles of War*. He listed four such principles: economy of forces; freedom of action; free disposal of forces; security; and perhaps a fifth, by adding "etc." to his four principles.

Freedom of action, free disposal of forces, and security, look very much like three ways of stating the same idea, and this, in turn, appears to be the idea of Xenophon's lone principle. The military student, bemused by Foch's fame and hoping for enlightenment in this book will not find it. Foch, when he commanded the Allied Armies, forgot all of his principles of war and strategy, but attacked everywhere, winning the World War by a series of soldiers' battles.

American military thinkers have been content to accept their principles second- or third-hand until recently a writer in the Command & General Staff School *Review of Military Literature* attempted to deduce some real principles.<sup>1</sup> He first cleared the ground by extensive research into logic and definitions of science, art, and principle, and so on. The term "principle" was always used by the older military writers to mean a guide or rule of conduct. It is defined in half a dozen ways, but in military writing it has not been used in a scientific sense as meaning a fundamental or basic truth, although justification erroneously was given to this meaning when our own Training Regulations called the principles they announced immutable. Our new investigator, however, was looking for principles of war that were principles in the scientific sense.

He finally came to the conclusion that "the one fundamental and reliable principle to be used as a guide in war is simply that *the effective employment of combat power to gain unity of effort is determined by these factors, viz: the object, the means available and opposed, the characteristics of the theater, and the probable consequences of failure.*" Continuing, we find that the *object* is determined by the *effect desired*, the *means available*, etc., etc. (same list); that the objective is determined by the *object*, the *means available*, etc., etc.; that the correct movement is determined by the same elements. In fact, he comes to the conclusion that in addition, security, control, timing, organization, and allotment of forces are all determined by the *object*, the *comparative means*, the *characteristics of the theater*, and the *probable consequences of failure*.

These are principles to end all principles and perhaps the last word now has been said. There can be no doubt of their universality. Apply them to pie-making, for example. The one fundamental and reliable principle for

<sup>1</sup>"Field Service Regulations of the Future." *Review of Military Literature*, June and September, 1936.

making pies depends upon whether you want a pie, the kind of pie you want, the materials in the kitchen, your difficulties with the oven, and what your husband will say if it is a failure. Have your wife try that recipe on your cook; but it is just as helpful to the cook as these principles of war are to the soldier.

This set of principles could have been simplified further without great effort to read: the object (or objective, or security, etc.) depends upon the situation and the consequences of failure. Perhaps the author intended his research to end in this manner. These principles have a certain utility; it would be hard to violate them since they do not furnish a guide of any sort and they fit perfectly Napoleon's definition when he said, "The military art is an art which has principles that can never be violated." Thus their greatest usefulness may be to furnish alibis for defeated generals. This is not a new function for principles of war. As the Austrian generals said of Napoleon after he had defeated them in Italy, "It is not possible to disregard, as much as this man, the most essential principles of the art of war."

Our American researcher comes into conflict with Marshal Bugeaud. "There are few absolute principles," the latter wrote, "but still there are some. When you try to lay down a principle concerning war, at once a great number of officers, thinking they are solving the question, exclaim, 'Everything depends upon circumstances, you sail according to the wind.' But if you do not know beforehand what arrangement of sail agrees with what wind and what course, how can you 'sail according to the wind?'" Our researcher has impaled himself squarely upon Marshal Bugeaud's objection. His principles (if they are principles, and that may be doubted) are so fundamental that they simply are a directive to sail according to circumstances; as such, they are useless as guides of conduct and have no place in "Field Service Regulations of the Future," or any other time. We should, however, extend our thanks to this student for having deprincipled the principles of war. Perhaps they now will be retired from regulations and texts back into theoretical treatises where they belong. A characteristic common to almost all alleged principles of war can be found in the list proposed by

the author of "Field Service Regulations of the Future." This is an unproved deduction or assertion, a white rabbit pulled out of the hat, and raised to the status of a principle. The *consequences of failure*, in italics, is fastened like a tail to each of the ten statements of principles. Why are the consequences of failure an essential component of the principles of war? The author does not explain, he merely declares it. Why not add the consequences of success, or the probability of failure, or several other important considerations?

What if we assume that a general, educated by this researcher, wins as many battles as Napoleon? For the next century soldiers will study his battles and writings to find his secrets of victory. They will find embalmed in his works the statement that everything—timing, control, organization, etc.—depends upon the consequences of failure. The great man advises regard to the consequences of failure in every undertaking. Preoccupation with the *consequences of failure* could lose the next war.

What if Napoleon had advised: Base every decision on the situation and the consequences of failure? One suspects that there would have been fewer (and longer) wars and fewer battles. The consequences of failure in war are

exceedingly severe and it is easy to quail at the prospect of failure. But against this prescription of caution can be set a quotation from the greatest of military pragmatists, Napoleon. He said, "The general does not accomplish great things, except as he knows how to concentrate himself completely on one purpose and marches *without regard to consequences* toward a single object." Or again, "The poorest choice in war is almost always the most timid, or if one wishes, the most cautious." One's own difficulties are seen, but not those of the enemy. It was to the *probability* of failure that Napoleon directed his attention and he often computed his probabilities mathematically. He attempted to fight without regard to consequences, but with the probabilities in his favor. After these thousands of years of talk and speculation, it is to be doubted that anyone has deduced the principles of war, in a scientific sense, correctly. What have been called principles are unproved deductions, nothing more. They never can be anything else because controlled experiments in



war cannot be made to verify them. Unquestionably there are principles of war and necessarily they are true, and those which were true yesterday will be true tomorrow under like conditions. But the value of this affirmation should not be exaggerated for many of them will be without application to the military problems of tomorrow.

Every new war poses new military equations and the formulæ of the solutions advances from algebra to calculus, from little units alone in the middle of a continent to masses stretching from sea to sea, from the ground to the sky. The principle of the lever has little application to the principles of electricity. Many of the principles applying to Napoleon's wars have only a distant relation to wars of today. One of Napoleon's great principles was concerned with the "unity of the line of operations." Few readers will even know what he meant by those words.

Principles of permanent universal application would be such elementary abstractions as would apply with equal accuracy to a football game, a boxing match, or a battle. These have no utility in regulations. Regulations should be guides or prescriptions for conduct involving definite organizations, weapons, means and methods, and applicable to situations accurately visualized. As weapons and conditions of war change, regulations should be modified and doctrines innovated.

Should we state, then, that principles of war have no place in military study? Not at all. The theory of war, according to the greatest of all military theorists—Clausewitz—should be a study and not a doctrine; it should not be embalmed in a regulations. He adds that it is impossible to endow the art of war with a body of positive doctrine that will always serve as a guide or rule of conduct for those who command. The military genius will always operate outside the accepted doctrine.

Study on a theoretical basis will produce familiarity with war and encourage inventiveness. It should form the spirit of future leaders. Those soldiers who learned the principles of war by combining the initials of a set of principles into an easy word for remembrance, like a child in kindergarten, know nothing of the principles of war. The only theories of war valid for any individual are those which he has evolved or accepted from his own study. He will have no need for a memory trick to retain them. Catchwords mumbled by parroters will have one certain result: they will be wrongly applied. A military illiterate with an open mind will find a better solution to the problems of war tomorrow than the half-educated soldier who believes that war can be conducted by rules or regulations.

#### ATTACKING THE OFFENSIVE

No more solidly established and more earnestly promoted alleged principle of war can be found than that of the Offensive. It was included in General Fuller's original list, copied into our 1921 Training Regulations, and appears as an idea in our official text on strategy.

"Decisive results," reads our *Field Service Regulations* (paragraph 380) "are obtained only by the offensive." The French *Regulations for the Tactical Employment*

of *Large Units* states categorically that your will can be imposed on the enemy by acting defensively or offensively.

The principle of the offensive was raised to an article of faith in France before the World War. Its greatest expounder was Lieutenant Colonel Foch, later to become Generalissimo of the Allied Armies. He heaped scorn on the "ancient processes," the "old fencing," and the "antiquated methods" of maneuver of the eighteenth century and glorified the war of "no victory without fighting." "No strategy," he declaimed to his students at the *École de Guerre*, "can henceforth prevail over that which aims at ensuring tactical results, victory by fighting. The last word of offensive or defensive fighting will be therefore: the troops in *movement*, that is, attacking." Always the offensive, anywhere, everywhere—the headlong offensive. "Hence the idea of shock composed of two terms: *mass* and *impulsion*." The impulsive force was morale. With enough morale the shock became irresistible. Then, too, he computed and proved mathematically that the increased rate of fire of modern firearms increased the relative power of the offensive over the defensive, an interesting example of sophistic reasoning.

Only a great man could have exerted such tremendous influence on a national doctrine. Lieutenant Colonel Emile Mayer's description of his instruction at the *École de Guerre* explains part of the reason: "And here suddenly (succeeding Lanrezac) rises a vibrant voice which tosses out tumultuous and sibylline words. Their esoteric obscurity is traversed by flashes. Unexpected images are thrown out. One feels transported into a superior and ideal world. Armies clash. The conceptions of generalissimos meet in conflict. The boldness of genius carries away the circumspection of wisdom. With will, one is sure to seize uncertain victory and attach it to one's flag. It suffices to will.

"The auditor is overthrown. He admires, ravished by the train of hot, passionate, and communicative conviction, which carries him far from the dross of clothing and shoes, from police of barracks, far from the supply of forage, far also from the professor who talks on subjects matter-of-factly; on the utility of the advance guard and the choice of the line of resistance."

Joffre was a convert. At the outset of the war French combat orders carried the injunction, "The enemy will be attacked wherever found." The world was treated to the incredible and pitiful spectacle of 329,000 Frenchmen killed in the opening month and twenty-five days of the war during which the principle of the offensive was undisputed. In the last four months and eleven days of the war, during which the fighting of a larger number of French divisions was almost continuous, 163,000 French were killed, a death rate of about one-fifth of the opening phase. More than 200,000 men were killed uselessly trying to follow a theory arrogated to the status of a principle.

French military writers now speak of the strategical offensive as a principle, but are careful to deny any great

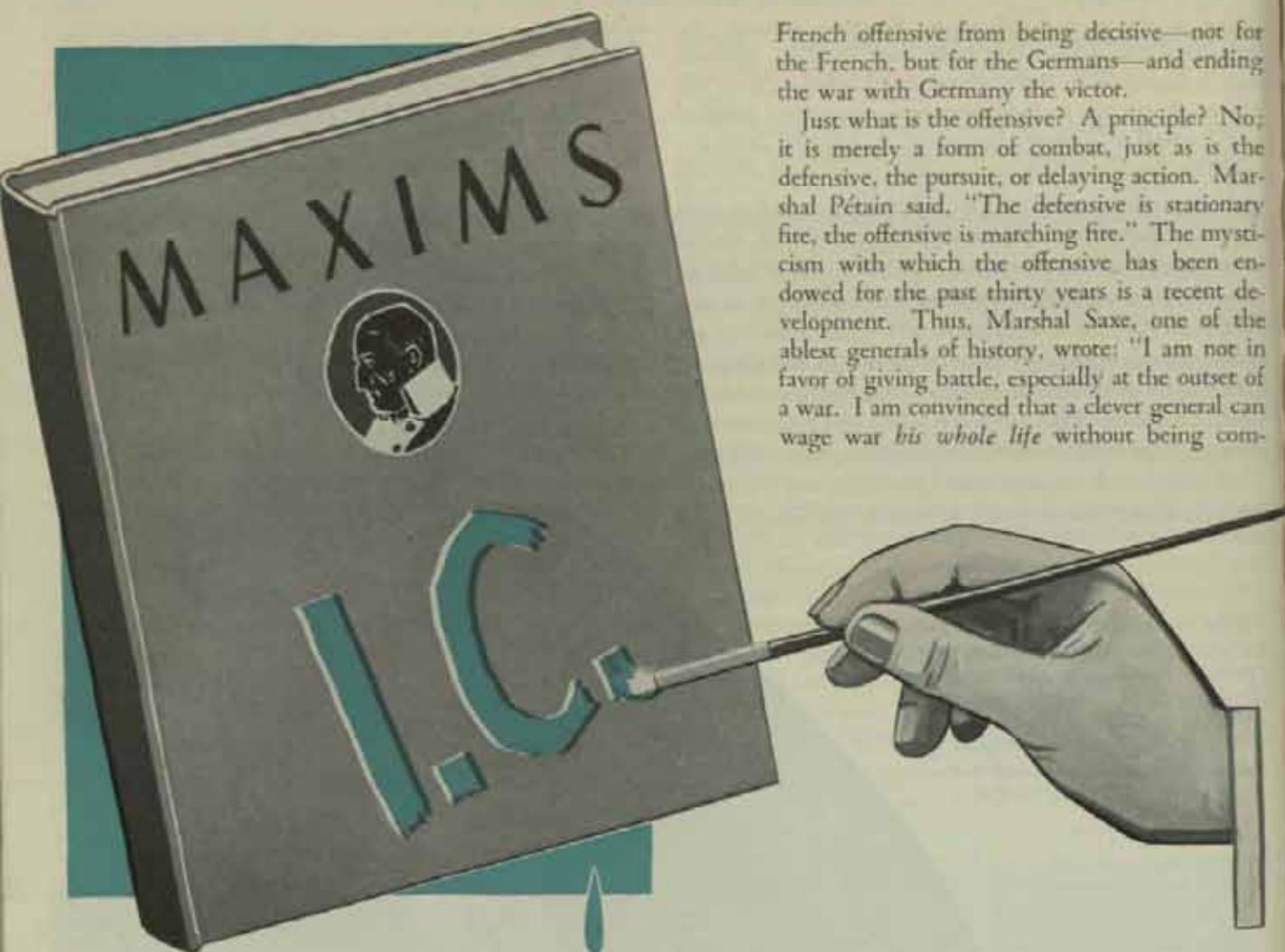
virtue to the tactical offensive. Roughly defined, the strategical offensive means little more than an offensive aim or intention in the operations as a whole. Since the means of strategy include economic, moral, and political war, as well as military operations, a military defensive could be combined with an economic or political offensive and the strategy could still be called offensive. But even so, it is a dangerous doctrine to proclaim without discussion and it is to be presumed that many soldiers would give the term a narrow interpretation as was done by the French in 1914. In consequence, where such doctrines are held, generals again may want to attack all the time, regardless of prospects of success, just because Marshal Foch, General Fuller, and some follow-the-leader writers of regulations have proclaimed a principle of the offensive.

Although most ancient wars have been won by offensive operations, this may not be true in the future. The

offensive also has lost many wars. Who remembers the "Fabian" policy of Quintus Fabius Maximus against Hannibal? He pursued tactics of "masterly inactivity," destroyed the resources of the country around Hannibal's Army and harassed him constantly, but refused to fight.

*"Who remembers the 'Fabian' policy of Quintus Fabius Maximus against Hannibal? Fabius resigned after six months' dictatorship. His successor took the offensive and the greatest disaster a Roman Army had ever suffered—Cannae—was the result."*





Fabius resigned after his six months' dictatorship, depressed by the clamor of the people for positive action, and his policy was abandoned. His successor took the offensive and the greatest disaster a Roman Army had ever suffered—Cannae—was the result.

Napoleon's offensive against Russia, in 1812, conveniently is forgotten by the public-relations-men of the offensive. The Grand Army of 600,000 men invaded Russia and remained on the offensive all the way to Moscow, with the Russians retreating before them. They returned, 30,000 only, the Grand Army destroyed by the Russian defensive. The defensive was decisive, the power of Napoleon ended, and his eventual downfall only a matter of time.

The successful defense of Verdun was a victory for the French, a defeat for the Germans. In March, 1917, the Germans, aware of the prospective Nivelle offensive on the Western Front, withdrew to the Hindenburg Line. When the French offensive finally was undertaken on April 17th, dislocated by the German withdrawal, it was a disastrous failure, a victory for the Germans and led to mutiny in the French Army and widespread defeatism in France. The entry of the United States into the war that April bolstered French hopes sufficiently to save the

French offensive from being decisive—not for the French, but for the Germans—and ending the war with Germany the victor.

Just what is the offensive? A principle? No; it is merely a form of combat, just as is the defensive, the pursuit, or delaying action. Marshal Pétain said, "The defensive is stationary fire, the offensive is marching fire." The mysticism with which the offensive has been endowed for the past thirty years is a recent development. Thus, Marshal Saxe, one of the ablest generals of history, wrote: "I am not in favor of giving battle, especially at the outset of a war. I am convinced that a clever general can wage war *his whole life* without being com-

elled to do so." Napoleon habitually fought offensively. By limiting one's self to a selective examination of Napoleon's battles to deduce the principles of war, as did General Fuller initially, one might be led to presume that there is some magic in an offensive principle. Actually, Napoleon's offensives were warranted and successful because of *superior* mobility, *superior* generalship, and the resulting surprise. Superior generalship, superior mobility and surprise can also make the defensive decisive.

Unquestionably the offensive has outstanding advantages particularly in initiative and morale, over other forms of combat when conditions of relative power, time, and place warrant its adoption. But there is no magic in the offensive, *per se*, and the sooner it is denuded of the halo which surrounds it, the saner will be the conduct of war and the less likely the useless deaths of hundreds of thousands of young men entrusted to military leaders.

#### HIDE-AND-SEEK WITH THE DECISIVE POINT

The principle of the objective disappeared somewhere along the bypaths between the discontinuance of principles of war in training regulations and their resurrection as ideas in the official text on strategy. But in this text can be found its substitute, "the fundamental law of

strategy," in capitals: "BE STRONGER AT THE DECISIVE POINT." That sounds like a reasonable admonition, although one is tempted to ask if any commander knowingly ever would be weaker at the decisive point. It likewise sounds very much like Sir Frederick Maurice's statement written in 1891: "The great principle of strategy is to concentrate the largest possible force at the right moment at the decisive point." Are generals really such morons as to need such advice?

But just where is the decisive point? The problem of being stronger should be simple if it could be located. Turning to the text on strategy for help, one finds, "In addition to providing for the maximum concentration against the enemy's *weakest point*, etc." By inference, therefore, the enemy's weakest point is the decisive point. But in another place one finds, "As to the question of striking the enemy as hard as one can in the *most vulnerable place*, there can be no question." That is all the help the text gives to apply the fundamental law of strategy. It is obvious, without argument, that the weakest point is not necessarily the most vulnerable place and that neither of these, necessarily, are decisive in every situation.

Foch had a different idea about where the decisive point was to be found. He wrote, "The same applies to attacking; it must be conducted, as far as possible, not against a line or a front, but against one point; I may add, against a point which ought not to be taken at random, but in general against a *salient or wing*, because the attacking force may, in that case, make the most advantageous, that is, the most complete, use of the numerical superiority of the numbers it possesses."

It is interesting to find Clausewitz derive a contrary conclusion from the same argument. In the "Summary of Instruction to the Prince," he writes: "The party acting on converging lines, unless he has a most decisive superiority of numbers, will lose by battles all the advantages which the enveloping movements have gained for him. . . . Besides this, the principle just stated of concentrating as much as possible at the decisive point, is opposed to the idea of enveloping strategically."

Von der Goltz's search for the decisive point seems to lead him in the same direction as Clausewitz. He wrote, "A portion of the fighting force will always be considered as intended for decisive combat, and this we may define as the enemy's Main Army. This at the same time constitutes the enemy's power of resistance. It is evident that if the main army is beaten first, then the remaining weaker groups will still be less able to count on victory. . . . Hence it follows that the *primary objective*, against which we must direct all our efforts, is the *enemy's main army*. This, the first principle of the modern conduct of war. . . . From this first principle of the modern art of war follows the second, which is, if possible to unite all the available forces for the decisive combat."

Napoleon supports this conception: "There are many fine generals in Europe, but they see too many things at the same time: I see only one, namely, the masses. I try

to destroy them feeling sure that the accessories will then tumble down themselves."

But Napoleon did not always follow his maxim. In Italy, Carnot wanted him to march on the Austrians in Milanese territory, since their army was the principle force (the decisive point) of the adversaries. This was the center of gravity of the resistance and if this was broken the rest would make peace and the war be brought to an end. But if Napoleon devoted his entire attention to the Austrians, the Sardinians would be able to maneuver independently and threaten Napoleon's communications. To guard the communications against the Sardinians would require a large force and weaken Napoleon so that the remainder of his force would be insufficient to cope with the Austrians.

Consequently, he turned against the weaker enemy, the Sardinians, and destroyed them first. Following this he was able to turn on the Austrians with his entire strength. He won the war, but he violated his own maxim, von der Goltz's pontification, and our official text on strategy, which reads, "It must be remembered that the main operation is all important. . . . Success in the main operations will more than compensate for small defeats elsewhere."

On this occasion Napoleon chose the weaker enemy as the decisive point, reversing his usual procedure. One would think that the common sense of any general equal to such a decision, but such optimism fails to take account the stranglehold of copybook maxims on little minds.

In the World War the main armies of both contenders were on the Western Front. According to von der Goltz, the Western Front automatically became the decisive point for both belligerents. The French, defending their own territory, necessarily held the Western Front to be the decisive area, regardless of any strategical indications to the contrary. The British generals were of the same opinion. They resisted to the best of their ability the pressure brought upon them by the civilian heads of the British government to detach forces for operations at the Dardanelles or Salonika. Haig had been brought up on von der Goltz, whose book, *The Conduct of War*, had been published in England in 1899. With reference to a letter from Kitchener that the British Army then being raised might be better used to cooperate with Italy and Greece, Haig told Sir John French: "I said that we ought to divide our military force, but *concentrate on the decisive point* which is the frontier against the German *main army*. With more guns and ammunition and more troops the allies were bound in the end to defeat the Germans and break through."

The same unswerving adherence to a maxim, the same inability to think, was shown by Robertson. He wrote to Haig: "My views are known to you. They have always been 'defensive' in all theaters but the West. But the difficulty is to *prove* the wisdom of this now that Russia is out. I confess I stick to it more because I see nothing better, and because my instinct prompts me to stick to

it, than because of any good argument by which I can support it."<sup>2</sup> A pitiful admission, in truth.

They had read von der Goltz and Napoleon, but they had not read Frederick the Great. Unable to think their problem out for themselves, they could have found an applicable maxim in his words. He, too, had faced war against coalitions and on more than one front. His conclusion can be found summed up in the words, "When one cannot hope to vanquish the principal army of the enemy, it is necessary to seek to destroy its detachments." Even Clausewitz could have furnished them a useful hint. He wrote, "We may, therefore, establish it as a principle, that if we can conquer all our enemies by conquering one of them, the defeat of that one must be the aim of the whole war." But the "if" contains the essence of Clausewitz's principle.

The Allied strategical problem was just as simple as that. There never was a time, until the American Army reached France in large numbers, that the British and French had enough force in France to vanquish the German Army. Frederick's maxim applied. Since the Allied strength was insufficient to overcome the enemy's main army, they should have attacked his detachments. The advantages to be gained by the elimination of Turkey, a German detachment, were tremendous. It would have stopped the fighting in Asia Minor and Palestine, which continued to the end of the war. It would have opened communications with Russia and probably would have kept them in the war to the end. It would have prevented the entrance of Bulgaria into the war on the German side.

The civilians, notably Winston Churchill, in the British government saw this, and over the protests of the soldiers, ordered the Dardanelles expedition. The expedition was a failure, due to half-hearted military support and civilian interference, as well as to military incompetence in planning and conduct. Russia remained blockaded, Turkey continued in the war, and Bulgaria entered on the German side.

The continuance of Turkey in the war provided a pretence of justification for continued British operations in Asia. Altogether they poured more than two million men, about equally divided between combatants and non-combatants, into these side-shows. The British had political reasons which justified, from their point of view, this indefensible diversion of force. The war ended with British soldiers in Iran, Iraq, Palestine, Egypt, Arabia, and Mesopotamia. The mandates recognized possession as nine-tenths of the law. It was British good fortune that the Americans replaced the manpower which the British had diverted for purposes of conquest in Asia and saved the war with the two million men we sent to France. In effect, the United States provided the men for the British conquests in Asia.

The German situation posed the identical problem, but

they had thought it through. The initial attack on France, the principal enemy, was justified on the ground that Germany had sufficient superiority of force to win quickly in France. After the initial failure to defeat the main enemy and the apparent hopelessness of a favorable outcome on the Western Front, Germany should have turned to the east and eliminated Allied detachments. This policy was not pursued until Hindenburg and Ludendorff assumed direction of the German Armies. With their access to power, the defeat and elimination of Roumania and Russia followed in rapid succession. Italy was rendered helpless by the terrific defeat of Caporetto in October, 1917.

Ludendorff's strategical problem then was whether to continue and eliminate Italy, or to mass the forces released in the east and finish with France and Britain on the Western Front. It was essentially a question of whether the means were sufficient to destroy the main Allied Armies. But the problem was complicated by the necessity of eliminating the Allied Armies before the Americans arrived in numbers to overturn German superiority. In the spring of 1918, Germany had two hundred divisions on the Western Front, twenty-five more than the Allies could muster. Eighty of these divisions were training during the winter for the spring offensive. One can hardly criticize Ludendorff for his opinion that a disposable maneuvering force of eighty divisions would be ample for a break-through and the finish of the war.

Actually, German superiority was only in the ratio of eight to seven. Ludendorff had not counted on the slow rhythm of great modern battles. The French and British had time to bring reserves from the entire extent of the Western Front and from Italy and finally to stop the German offensives. The offensive of March 21, 1918, just missed success. The British were debating withdrawing to the channel ports. But the German soldiers, on short rations for a year, stopped in great numbers and plundered the captured British food depots. Two days lost in this fashion allowed the French to solder the break between the French and the British and the war was saved.

Viewed from the platform of hindsight, it would be difficult to state that Ludendorff's decision was wrong. Success just missed his grasp as it had that of the Germans in 1914. Had he chosen to attack Italy and eliminate that Allied detachment, it is difficult to foresee how long the operations would have taken and how many troops would have been required to remain in Italy. Before this operation was completed the Americans might have arrived in France in great enough numbers to have made a favorable decision impossible there. Ludendorff may have made an incorrect decision, but at least he saw his whole problem. The same cannot be said for the British, who did not reason, who followed a maxim, and who had not read enough maxims.

Franco in the Spanish Civil War was faced with a similar strategic dilemma in 1937. The Loyalists held a section in the north of Spain along the Bay of Biscay. But the Loyalist main army was in eastern Spain stretching from the Pyrenees to the Mediterranean. But Franco

<sup>2</sup>*Soldiers and Statesmen, 1914-18*, by Field Marshal Sir William Robertson, Bart., GCB, GCMG, KCVO, DSO. Page 255, Volume II.

had insufficient troops to defeat the main army. He therefore turned and eliminated the detachment in the north, releasing enough soldiers so that he was able to undertake his decisive offensive in Aragon in the spring of 1938. Application of the strategy of the British generals of the World War would have led him to continue to fight a hopelessly even contest along the principal front.

This is an ancient argument, but new, of course, to generals whose military education was gained on the polo field, at the hunt, or in fashionable drawing rooms. Polybius blames Hannibal's choice of the principal enemy as his first objective for his failure to conquer the world. "It may be affirmed with confidence," he wrote, "that if he had first tried his strength in other parts of the world, and had come at last to attack the Romans, he could scarcely have failed in any part of his design. But now, as he began with those with whom he should have ended, the people that was the first object of his conquest was the last also which he had the power to invade."

The antonym of the decisive point is a fearsome catchword, "defeat in detail." For a hundred years, generals with that terror-inspiring phrase in mind, massed their troops into human steamrollers. When they fought successfully it was only to push their opponent back on his own line of communications. A plan for a turning movement or a wide envelopment could be defeated instantly by recourse to the potent phrase. It nearly defeated efforts

to establish a maneuver doctrine in the American service after the World War.

At Telissu, in Manchuria in 1904, three Japanese divisions opposed an approximately equal force of Russians. Two of the Japanese divisions had attacked the Russians and had driven them back on the main position. The third Japanese division was well out on the left flank and located so that it could move quickly on the Russian rear by a wide envelopment, and cut off the only line of retreat along the railroad to the northwest. Instead, this division joined with the divisions making a frontal attack and aided in pushing the Russians back along their line of communication. The Russian line of retreat passed



*Foch listed four principles of war: economy of forces; freedom of action; free disposal of forces; security; and perhaps a fifth, by adding "etc." to his four principles.*

through a narrow defile which could have been blocked with an insignificant force. But the fear of a catchword, defeat in detail, held General Oku from ordering an obvious and annihilating maneuver.

The fear of defeat in detail derives from Napoleon's frequent success in maneuver on interior lines, turning first on one opponent and then on another. But Napoleon himself often broke his armies into detachments. Instead of being influenced by a blind fear of what might happen to a force beyond his visual observation, he computed the time they should be able to resist and the time required to come to their support. Thus, writing to Prince Eugene, the Viceroy in Italy, he declared: "Here is the general principle of war: a corps of 25,000 or 30,000 men can be left isolated; well led it can fight or evade battle and maneuver according to circumstances, without any misfortune occurring to it, because it cannot be forced to fight and finally it can defend itself for a long time."

Improved weapons have steadily increased the defensive capacity of units and the length of battles since Napoleon's time. Where once an army could be annihilated in half a day, battles now last weeks. Napoleon's dictum could be applied now to a much smaller force. But even a few years ago the old catchword was brought forward to argue against the American doctrine of maneuver war.

It will probably occur to the reader that there are decisive points, if one wishes to use that term, of various natures. It can be used with reference to the war as a whole or to a single battle; it can refer to an eventual objective or an immediate objective. But no useful guide is supplied by the mere phrase itself, nor by an injunction to be stronger there. Baron Jomini appears to have been the originator of the theory of the decisive point. He discusses in detail, objective points of maneuver and political and geographical objective points, as well as decisive strategic points, geographical decisive points and decisive points on the field of battle. He never fell into the trap which caught von der Goltz by making any particular objective, such as the enemy's main army, always the decisive point.

Jomini's analysis of strategy based upon operations against successive objectives and decisive points is more intelligent than any similar military study written since his time. His conclusions cannot be summed up in a phrase. The student who has played hide-and-seek with that mysterious decisive point, so that he could comply with the textual injunction to be stronger at that place, is advised to study Jomini for the answer. The application of Jomini's logic to modern conditions will place him on the route to the theoretical solutions. One point at least should be clear: "When one cannot hope to vanquish the principal army of the enemy, it is necessary to seek to destroy its detachments." Assuredly the attack against an unattainable decisive point is more apt to make it decisive for the enemy than for the attacker.

#### THE WILL TO RESIST—A METAPHYSICAL TRIUMPH

The most recent of the mystic catchwords is "the will

to resist." It has become popular with the growth of air power, for reasons that shortly will be explained. Our author of "Field Service Regulations of the Future" informs us that "The Field Service Regulations should tell us plainly that the ultimate *object* in war is to *reduce the enemy will* to the level necessary for us to gain the end for which the war, the campaign, every littlest operation is fought."

Perhaps this magic phrase stems from an inversion of Clausewitz's statement that "The object (of war) is to *impose our will on the enemy*"—an entirely different matter. Clausewitz continues: "To attain this end with certainty, we have to render the enemy incapable of defending himself." And in another place, "We have said that the object of war is to deprive the enemy of the *ability to fight*."

The metaphysicians might argue that when you have killed a man you have destroyed his will to resist; or that when you have disarmed him you have destroyed his will to resist; or that when you have starved him you have destroyed his will to resist. But in reality, in each case, it is not the opponent's *will* that has been attacked, but his *physical ability* to resist that has been affected. Dead he is physically, as well as mentally, incapable of fighting; disarmed, his will to resist may be stronger than ever, but he is without the ability to resist; weak from starvation, he still may want to fight, but be quite unable to.

It is the ability to fight, of which the will to fight (or resist) is but one component, that must be destroyed to conquer. And of what is this ability to fight composed? Broadly and abstractly, of:

Military ability to fight;

Economic ability to fight; and

Moral ability to fight, or the will to resist.

To these three might be added a fourth, *viz*: political or diplomatic power in the sense of allies or sympathizers who aid morally or economically and who may aid militarily eventually.

The complete destruction of any one of the three principal components of the ability to fight will be sufficient to destroy the ability to fight. Thus, in the Franco-Prussian War of 1870, France's two main armies were destroyed and French military ability to resist was ended. But the will to resist the hereditary enemy was as strong as ever. Volunteer forces, untrained and inadequately armed, continued hopeless resistance in southern France for months. But the will to resist and the unbroken economic power was useless without the military ability to resist.

In Loyalist Spain, the economic ability to resist was destroyed. Soldiers and civil population were on starvation rations for a year and a half. The blockade finally deprived the Loyalist armies of ammunition and weapons. The will to resist continued, but the economic means, in the sense of war material and food, had been destroyed and the war was ended.

The first of the great economic wars was the American

Civil War. The Northern blockade slowly strangled the South. During the last period of the war Grant was held in an impasse in front of Richmond, unable to advance against the labyrinth of trenches. At this time Grant, a military ignoramus and thus with an open mind on military problems, turned to economic war, reinforcing the naval blockade. In effect, he immobilized the hostile main army by a holding attack while the remainder of his forces waged economic war. On April 4, 1864, he wrote to Sherman: "You I propose to move against Johnston's army, to break it up and get into the interior of the enemy's country as far as you can, *inflicting all the damage you can against their war resources.*" On page 335, Volume II, of his *Memoirs*, he writes: "Sheridan had driven the enemy out of the Valley, and taken the productions of the Valley, so that instead of going there for supplies the enemy would have to bring his provisions with him if he again entered it. . . . On the 6th of October, Sheridan commenced retiring down the Valley, *taking or destroying all the food and forage* and driving the cattle before him."

With reference to Sherman's march through Georgia, he wrote: "His march through Georgia had thoroughly destroyed all lines of transportation in that state, and had completely cut the enemy off from all sources of supply to the west of it. If North and South Carolina were rendered helpless so far as capacity for feeding Lee's army was concerned, the Confederate garrison at Richmond would be reduced in territory, from which to draw supplies, to very narrow limits in the State of Virginia; and although that section of the country was fertile, it was already well exhausted of both forage and food."

Grant's *Memoirs* contain innumerable instances showing his preoccupation with the economic war he was waging, of which the following are examples: "If Hunter can possibly get to Charlottesville and Lynchburg, he should do so, living on the country. The railroads and canal should be destroyed beyond the possibility of repairs for weeks, etc." And, "On the morning of 31st of January (1865) General Thomas was directed to send a cavalry expedition, under General Stoneman, from east Tennessee, to penetrate South Carolina, well towards Columbia, to destroy railroads and military resources of the country, and return."

In the west the same economic war was waged. To Canby: "I wrote you long ago, urging you to push promptly to live on the country, and destroy railroads, machine shops, etc. Take Mobile and hold it, and push your forces into the interior—to Montgomery, and to Salem. Destroy railroads, rolling stock, and everything useful for carrying on the war."

The fixation of soldiers on the waving of flags and booming of cannon has blinded them to the facts of economic war. Today, more than ever before, economic war is of first importance. It is possible in the not too distant future that military operations will be directed primarily at the economic power of the opponent, that the economic aim of the war will be the decisive aim, and

the military operations will be of importance only to the extent that they influence economic war. If Germany's submarine campaign against Great Britain had succeeded, it would have been a successful economic war. The economic war waged against Germany was more effecting in sapping her resistance than the military operations.

It should seem apparent that the will to resist is but one element of the ability to resist. But what is less apparent is that the will to resist is the toughest and most lasting component of the ability to resist, the most difficult to destroy. The German will to resist had not been ended when they signed an Armistice. They had been deprived of economic power to continue and faced certain military defeat. An armistice was preferable to invasion. Southern will was not destroyed in four years of war. Loyalist will was not destroyed in three years of hardship unparalleled in modern times. Why then the modern emphasis on the will to resist as the principal object of military operations?

The structure of sophistry is built in the following fashion: Since the will to resist is the fundamental component of resistance (according to the protagonists of the theory), why not attack the will to resist directly? In the past it has been attacked indirectly by military operations and economic deprivation, and these have been aimed primarily against the military forces. With aerial attack on the civil population the civil will to resist can be attacked directly and the military structure deprived of moral nourishment at the base.

The theory that the will to resist is the fundamental element of resistance is arrived at by reasoning backwards, to give logical support to terrorism. Such is the basis of today's strategical fad. From a principle thus established its proponents can reason forward and prove the validity of their contentions. Like much of human logic, the theory of direct attack by terrorism on the will to resist, is simply the rationalization of a hope or preconception.

The theory has been given a test run in the Spanish Civil War and the Sino-Japanese War. These have proved, contrary to the expectations of its proponents, that it arouses the military spirit of the civil population, hardens the will, and gives civilians a toughening hatred of the opponent that sustains them as no amount of propaganda could succeed in doing. It is well, however, to understand the fallacious logic back of the theory, for it still persists in certain quarters. This catchword has potentialities more disastrous and more terrible, even, than Foch's headlong offensive.

#### "AFTER ALL—WHAT IS THE REAL PROBLEM?"

Military catchwords, such as the principles of war and quotations and maxims from the ancient great, have caused the loss of more battles, the deaths of more men, the stultification of more thinking, than treason, cowardice, or stupidity. Each of these catchwords, or maxims, is an attempted solution, often incorrect, to a problem of the past, formulated in explanation. But times change and the old saws no longer apply. Take Napoleon's maxim, "Disperse to live, assemble to fight." Napoleon

dispersed to live off the country, and assembled for combat. Modern armies assemble to live, easily supplied in masses by railroads and motors, and fire power forces them to disperse to fight. The "principles" are an explanation of how it was done, perhaps a hundred, perhaps two thousand years ago. Their chief utility is to save us moderns from thinking through our own problems.

Foch relates that when Marshal MacMahon took office as President of the French Republic he demanded, "Where are the regulations?" And as there were none to tell him what to do, he was lost. Poor old regulations, adds Foch, they are moron-guides which encourage mental indolence; it is not sufficient to learn regulations. It is essential to learn how to think.

And so with the principles of war and all the other catchwords that soldiers live by. Learned or parroted, they are a mirage and point to the wrong path. The military student who has not devised his own theories (or prin-

ciples), or reaffirmed those of others by his own study, is unfitted for the higher conduct of war. It requires the profound understanding gained in their formulation to apply them to new problems.

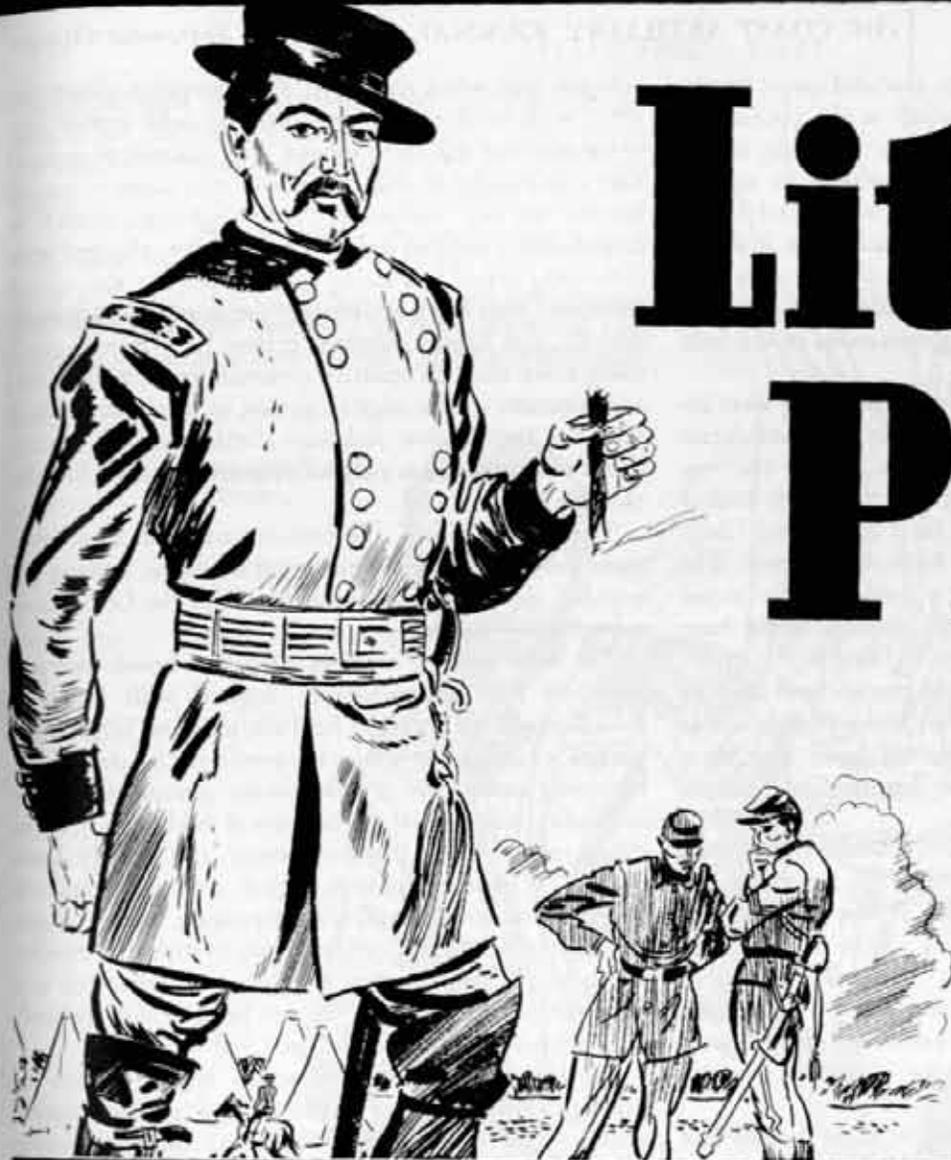
It is evil to approach war with fixed ideas; that is, without an open and flexible mind, but it is certain to lead to disaster to approach it with the inapplicable formulae of the past. When the subaltern (later General) von Verdy du Vernois arrived on the battlefield of Nachod, confronted by the difficulties which were present, he cudgled his brain, searching his memory for an example of principle which would furnish him with a line of conduct to adopt. Nothing inspired him. "To the devil," he said, "with history and principles! After all, what is the real problem?" and promptly he made his decision.

And so today. New problems demand new solutions. It is for us to state the new problems and formulate the new solutions. "After all, what is the real problem?"



# Little Phil

Illustrated by  
Howard Williamson



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By FLETCHER PRATT

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## Part One

The decisive hours of the Civil War are generally considered to be those of the afternoon of July 3, 1863, when Pickett's column moved through the long grass, while 1,500 miles away flags of truce hung limp in the heat along the ramparts of Vicksburg. This is accurate if the war be thought of in the light of European precedent, and only untrue when we remember that for the Union mere victory was equal to defeat. It should not be forgotten that a soldier's work is incomplete until he has decisively influenced the political situation, and the double victory of 1863 did not achieve this result. A year after Gettysburg and Vicksburg—a year that had seen the Chattanooga battles and the better half of the titanic Atlanta

campaign piled on the summit of these triumphs—the Democrats were seeking political control in the North by denouncing the war as a failure. It seemed to many intelligent men, among them Thurlow Weed, Salmon P. Chase and Lincoln himself, not unlikely that the Democrats would convince the country they were right and make a peace that left two nations.

The "decisive" battles of the Civil War thus decided nothing but that the Confederates could not win in the

*A tough Mick who saw that a cavalryman was only an infantryman with 4 detachable legs*

field. They might still gain their essential point by default. The task that faced the North at the opening of 1864 was infinitely more difficult than anything it had yet accomplished. It was required not only to achieve military victory (though this was an indispensable preliminary) but to achieve it in a manner that involved the extinction of Southern morale and the prevention of that guerilla conflict which most European observers considered as certain to follow the operations of the field armies.

In this sense both Vicksburg and Gettysburg were indecisive. They damaged, but did not slay the Confederate spirit. If Pemberton had been less a ninny, the one would not have been lost; if Lee had not made one of his rare errors, if Stuart had not been absent and Longstreet sulky, the other might have been won. The Southerners reasonably felt that a comparatively minor change in the conditions of either conflict would have reversed the results. They went on fighting in the expectation that the law of averages would provide both changes in another combat. The battles that broke their hearts as well as their heads did not come till later; and these were named Chickamauga, Yellow Tavern, Cedar Creek, Five Forks.

The first was Thomas' battle and affected the western theater of war alone. But the other three have four elements in common. Each took place in that Eastern piedmont on which the attention of the people on both sides of the strife was riveted, and thus yielded the maximum moral effect; each was the crowning act of a campaign; in each, cavalry, the special and favorite arm of the South, was deeply engaged; and in all, the Union commander was Philip Henry Sheridan.

With Sheridan there triumphed in these battles not only the Union army. There triumphed also an entirely new, purely American doctrine of war, of the use of the mounted arm—an idea that had been struggling dumbly for expression since Richard M. Johnson's Kentucky riflemen made razor-strops of the skin from Tecumseh's legs after the Battle of the Thames. It was a doctrine that could not possibly have been framed south of the Potomac, in spite of the fact that the Confederacy entered the war with an aristocracy habituated to the saddle and with considerably more than its proportionate share of the cavalry officers of the old army.

In fact, it was a doctrine that could hardly have been born in the mind of a cavalryman at all. For cavalry officers, North and South, were so imbued with the history and tradition of their arm as to be incapable of perceiving that the advance of mechanical science had deprived this history and tradition of all meaning. They continued to think in terms of the days when the infantryman's gun was ineffective beyond a hundred yards and could be fired at most, twice while the cavalryman was crossing that distance. They thought of Murat and regarded the charge of the gallant six hundred as an example of courage and not as one of stupidity.

The Northern cavalry service had clearly failed as a Na-

poleonic arm when the Mine Run campaign closed out 1863, with its demonstration that the most serious part of the war was still to be fought. The reaction of an ordinary commander to this failure was that cavalry, having become an arm useless for heavy fighting, should be turned into a kind of military police force, charged with conveying trains and doing picket duty for the rest of the army. This had been Hooker's reaction after Chancellorsville, and Meade inherited it from him. It took something more than an ordinary commander; it took, I say, a commander on the edge of genius, to throw all received ideas out the window and start afresh from the concept that a cavalryman was only an infantryman with four detachable legs.

This was Sheridan. He pronounced a bill of divorce between the cavalryman and his horse, a thing unheard of since true cavalry was born and the Goths came riding across the steppes.

The basic doctrine was not altogether novel, and perhaps not even independently original with Sheridan. John Buford, for one, had held the idea and might have pushed it farther had he not been debarred by death from becoming more than a subordinate commander whose originality was limited to the tactical field. It was Sheridan's special merit that his precise and orderly brain evolved a harmonious and logical structure from the various elements he found already existing. It was his special accomplishment that through his treatment of cavalry, not as a separate arm with peculiar disabilities, but as a kind of fast-moving foot soldier, he achieved the only pure offensive to be found in the Civil War.

For Lee, a master of the tactical attack, always developed his successes out of the strategic defense, against enemies moving in, with lengthened communications, across ground he intimately knew. In both the battles he fought during advances he was beaten. Grant and Sherman, who might have possessed parts of the same brain under two different skulls, exactly reversed Lee by acting on the strategic attack but tactical defense. They aimed to place armies in positions where the enemy must hit out at them. Both failed (Cold Harbor, Kenesaw Mountain) when they violated this principle. Thomas was strictly a counter-puncher, waiting for an enemy advance, which he parried with one hand while knocking out his opponent with the other. Only Stonewall Jackson approached Sheridan; and there is more than a verbal coincidence in the fact that Stonewall's men were known as "the foot cavalry" while Sheridan's were cavalry who fought on foot.

At the time of the great winter conference of 1863-1864 on military affairs, with Lincoln and the army leaders present, nobody was thinking of getting a man of genius or a new doctrine of cavalry. It occurred to nobody that defeat of its mounted arm might have a ruinous effect on the morale of the Confederacy; though for both political and military reasons everyone seems to have agreed that they could not afford to have Stuart riding circles around the Army of the Potomac any more. In other words, the views of the conference were negative. The decisiv-

campaign of the war was approaching, and it was important to get something more than a minimum yield from the human and mechanical power the Union cavalry possessed.

The best way to do this was a change in command. For Pleasonton, then commanding the cavalry corps, had been given a thorough trial and he was simply not good enough. But who would be better? The three divisional commanders in the corps were Buford, Gregg and Kilpatrick.

*"The very man!" cried Grant.*



Kilpatrick was a hard fighter but a still harder rider. The men knew him as "Kill-cavalry," for he normally arrived at the scene of action with horses blown and panting, men dropping from the saddle with weariness. Gregg was just the sort of mercurial leader Grant most distrusted—perhaps the best of them all when swinging to victory, perhaps the worst when things went wrong. Custer and Wesley Merritt were too junior. Grant asked for old General Franklin, whose talents he held in an incomprehensible respect, but the others frowned him down and there was a silence till General Halleck cut the knot with the suggestion, "How would Sheridan do?"

"The very man!" cried Grant, and that night a telegram was dispatched for Sheridan.

## II

Who was this Sheridan? Practically unknown in the East, he had flashed only once across the front pages of war history—when he stood in the captured rifle pits at the foot of Missionary Ridge, and lifting his whiskey flask toward the rebels on the towering summit, shouted "Here's how!" before he drank the toast. As the last drops trickled down his gullet a shot from a big gun up there threw dirt all over him. "I call that damned ungenerous!" cried Sheridan. "I'll take those guns for that!" and flinging the empty flask up the slope he started after it—the beginning of that incredible charge up a mountain like a mansard roof.

Army circles knew slightly more about him. They knew him for the hero of the fighting at Perryville where he had held his division all day against overwhelming rebel attacks, and in the evening put on a counterstroke that tore Bragg's line to pieces. He had done well at

Chickamauga where, though his division had been one of those carried from the field, he rallied it in time to come back and cover Thomas' retreat. At the dreadful battle of Stone River he had done surpassingly well; had slowed and then halted the Confederate attack of the first day and formed the anchor of Thomas' line. In the dramatic midnight council of war he stood with Thomas against retreat, and even asked permission to lead the counter that eventually won.

Most of the rest was gossip that drifted up by word of mouth through junior officers, for Sheridan was the youngest division commander in the armies of the West, belonging to a later generation than most of the high command. That gossip would tell, for instance, how he came to West Point, a tough little Mick of a store-clerk from Ohio, poor as Job's turkey, with a chip always on his shoulder; how he wrangled during drill with Cadet Sergeant Terrill, and after trying to jab that student officer with a bayonet, had challenged him to a fist fight behind the buildings, coming out of the encounter with a black eye and a year's suspension; how he had been graduated in 1853, an undistinguished thirty-fourth among fifty-two, and was ordered to Fort Duncan, Texas, as a lieutenant of infantry.

There again he fell on stormy weather, which can perhaps be traced to the fact that all his life long Sheridan was a picturesque and vivid swearer, while the colonel in command was equally noted as a God-fearing man of the Puritan type. There was as much disagreement as there can be between a very junior lieutenant and a very senior colonel, with petty persecutions on one side, petty sabotage on the other. Sheridan finally escaped via a requested transfer to the 4th Infantry, then on duty against the Yakima Indians in the Pacific Northwest.

The country was ill-explored, the Indians almost inveterately hostile, and young Lieutenant Sheridan was very much on his own in leading detachments out to deal with them. But in that hard service he found himself. He displayed a perfect passion for topography; never went out on an expedition without taking surveying instruments along and mapping every inch of the country he covered. Two other details of this period have survived, interesting in view of his later career. Lieutenant Sheridan formed the habit of requisitioning all the mules he could lay hands on and mounting his infantrymen on them for movements up to the scene of action; and in dealing with the Indians, he displayed a wonderful gift of blarney, could always talk them out of hostile intention if he could get them to pow-wow before the shooting started.

Much of this, however, was not to be dredged from memories and records till the young lieutenant was famous. The service papers lying before Lincoln, Halleck, and Grant at that winter conference would have stated only that Lieutenant Sheridan was ordered east at the outbreak of war, arrived late because of the distance, and was assigned to the Herculean labor of auditing the accounts left in confusion by the ornamental Frémont. A year after the war began he had only attained promotion to a

captaincy and was quartermaster of Southwestern Missouri, that is, effectively buried. Grant and Sherman were already generals, the former already a famous general; Thomas had an independent command and McClellan more military authority than any American since George Washington.

But at this juncture Sheridan caught his tide. Quartermaster business brought him frequently to the headquarters of the western armies where he met and was liked by Gordon Granger, then a brigadier of several months' standing. Granger's old regiment, the 2d Michigan Cavalry, had gotten into bad shape since he moved upstairs. He wanted an officer to straighten the command out, and the name of the young quartermaster, who was running his department like a clock, naturally suggested itself.

Granger put the matter up to Halleck, then commanding the west. That formalist, who had already been impressed by the neat way Sheridan ran his freight schedules and his fastidious paper work, gave the promotion his blessing. This was how Sheridan, whose nearest approach to mounted action had been muleback operations in the 4th Infantry, came to be pitched into the Corinth campaign at the head of a regiment of horse. He was to be a lieutenant-general before he received his colonel's commission.

Fortune rode with him on his first mission, a detached one to hold Boonville, Missouri, with eleven companies of his own regiment and the 2d Iowa, about 750 men all told. Most might not consider it fortune, however—Confederate Chalmers came down to shoot up the place on July 1, 1862 with 4,000 men. Sheridan had chosen a position where his flanks were covered by a pair of swamps, and the attack was canalized into a narrow front where his dismounted riflemen waited, but the disparity in numbers was so great that by noon things began to look grim.

Sheridan summoned a trustworthy officer, Captain Alger; gave him ninety men, armed with Colt "revolving carbines"; told him to go by a circuit and fall on the enemy's rear, shooting for all they were worth from the saddle, making a racket whether they hit anything or not. Now, says Alger, who has told the story, he understood why his colonel had spent half the previous night poring over maps of the region. In the heat of that conflict, among the ceaseless attacks, Sheridan gave him road directions as clear and precise as though he were telling a man how to find the post office. Alger rode off with his ninety; made his circuit, and charged the rebel rear with guns banging. At the same time Sheridan threw forward his own dismounted men in a countercharge against the Confederates, who were mostly still in the saddle.

There is one thing about mounted cavalry. If it once gets started going either forward or back, it is very difficult to stop. Chalmers' men had started going back when Alger struck. Sheridan's charge kept them going with doubled speed, and in half an hour the four thousand

had left the seven hundred fifty in possession of the field and the enemy wounded.

It was an outstanding feat of arms in a campaign that had very little outstanding about it. The young commander was given a temporary brigadier's rank and was sent by Grant to Buell a month later, when Bragg's invasion of Kentucky caused the Army of the Cumberland to ask for help. Sheridan was taken from his two regiments of horse to arrange the defense of Louisville, which he did so well that he was placed in charge of one of the new divisions of infantry in the campaign that led to Perryville. While ex-Cadet Sergeant Terrill was being killed at the head of his brigade in one part of the line that day, Sheridan in another was the heart of the Union defense, the best man on the field, winning his step on the ladder that had now brought him to Chief of Cavalry in the Army of the Potomac.

### III

There is a certain amount of mystery in how Grant came to assent so enthusiastically to the nomination for the most important cavalry command in the nation of a young man whose ten years of active service had included only four months with cavalry, and those at the head of a single regiment. The commander-in-chief did not know Sheridan well. He had seen him in action as a general officer only during the week or two of the Chattanooga fighting, and the most favorable reports on Sheridan came from men Grant was rather inclined to distrust—Buell, Rosecrans, Halleck.

The choice is perhaps explained by a remark of Grant's long later: "No man ever had such a faculty of finding things out as Sheridan. He was always the best informed man in his command as to the enemy." This is full of illumination, not only on Sheridan, but also on Grant's own theory of the employment of horsemen in a world where they had been banished from the battlefield. He evidently thought of the arm as screen and counter-screen, whose function was to conceal the movements of one's own forces and to acquire information about those of the enemy. Sheridan's preternatural activity, physical and mental, his deep interest in and knowledge of topography, his ability at questioning prisoners ("That there man, he'll talk the eyes right out of your head," said one of them)—these things impressed Grant as the proper equipment of a cavalry leader.

Yet both Grant and Halleck had misgivings when the man arrived in Washington on April 4, too late for any change to be made before the opening of the campaign. Grant particularly, as he confessed later, "formed a very unfavorable impression." Seen in a drawing room Sheridan was a "most extraordinary figure. His chest was large and full, his legs short and small, and his arms so phenomenally long that his hands reached down below the level of his knees." Above this was a small head, bearing little bright eyes like those of a bird and a face that registered doubt both about his own ability and the wisdom of accepting the new appointment.

Sheridan was, in fact, inclined to view the cavalry command as a demotion. He was due to take over a corps in the western armies and liked service there, among the free-and-easy veterans who turned out on parade to bleat at an officer when they considered his behavior sheeplike, or offered him chewing tobacco as a special delicacy when they liked him. The Army of the Potomac, he understood, was more strait-laced in discipline. He doubted his ability to give satisfaction under the conditions. Grant eyed him ruminatively, puffing cigar smoke, and was ultimately delivered of the remark that the new Chief of Cavalry would have pretty much of a free hand on one condition—that he keep Jeb Stuart out of mischief. Sheridan's face cleared at once, and two days later he was riding down to inspect his new command.

There were 10,000 effectives in three divisions, commanded by Gregg, Torbert (a new man come up through the ranks to replace Kilpatrick, who had gone west to join Sherman), and Wilson. The last was another of Grant's surprise appointments—the youngest man so far to bear stars on his shoulders, an engineer of the West Point class of 1860, who had been a kind of secretary and personal inspector-general to Grant in the West, but who had never led troops. The men looked strong, healthy, smart—Sheridan has recorded his pleased surprise at their appearance—but the horses were the merest flea-bait. It did not take the inquisitive new commander long to discover the reason for a state of affairs that would be pardonable only at the close of a long and hard campaign.

The cavalry were doing picket duty for the entire army, round a circuit of sixty miles, besides having the standing assignment of furnishing heavy escorts for every provision train and every column of infantry that moved on the roads in back areas. Sheridan went to Meade with a demand that his corps be concentrated as a fast battle wing of the main army and relieved of drafts for the service of security.

Meade's concept of cavalry was that which had grown up in the Army of the Potomac. It was not thought out at all; it was imposed on the army from outside, by the pressure of Mosby's lightning jabs and Stuart's long rides around the rear; and it was essentially defensive. The commander was horrified by Sheridan's demand. "What will become of my trains, my flanks, my moving columns?" he asked.

Sheridan: "If you let me use the cavalry as I wish you need not worry about trains or flanks. As for the infantry, it ought to be able to take care of itself on the roads."

Meade demurred, filled with the engineer's distrust of new ideas that could not be expressed in figures and Sheridan had to develop his theme. The infantry, he said, were about to attack the enemy's infantry; why then, should our cavalry stand on the defensive against the Confederates? If our mounted men be concentrated the enemy will dare just one more of those long raids—his last. For a concentrated cavalry corps will then face him from a prepared position across his line of retreat, or alternatively,

deliver 10,000 men at any desired spot on the enemy rear at any time desired.

"It is the business of cavalry to fight cavalry," Sheridan went on, "and if there is no cavalry there to fight, to attack the enemy's infantry in their most vulnerable point." Warming with his own logic he demanded thrice the normal equipment of artillery for his horse, as much artillery as infantry would have. Cavalry used as he meant to use it would be seizing positions behind the enemy, points vital to that enemy, which he would fight like the devil to regain. Cavalry mobility was a means to the end of arriving at an effective point for an infantry battle—

At this point Sheridan had parted company not only with Meade but with Grant also. The latter's theory of cavalry was different from that of either Meade or Sheridan, but he possessed a brain so habituated to following the essential through mazes of side issues as to resemble a mechanical instrument. The registering dial of that machine reported to him that Sheridan was proposing to submit the rebel cavalry to the novel experience of being attacked. This chimed with his own idea of cavalry as a service of information and anti-information. He decided the argument about concentration in Sheridan's favor, but as for the extra artillery—no, not at present. The decision accurately reflected Grant's questioning middle-ground attitude at the time.

#### IV

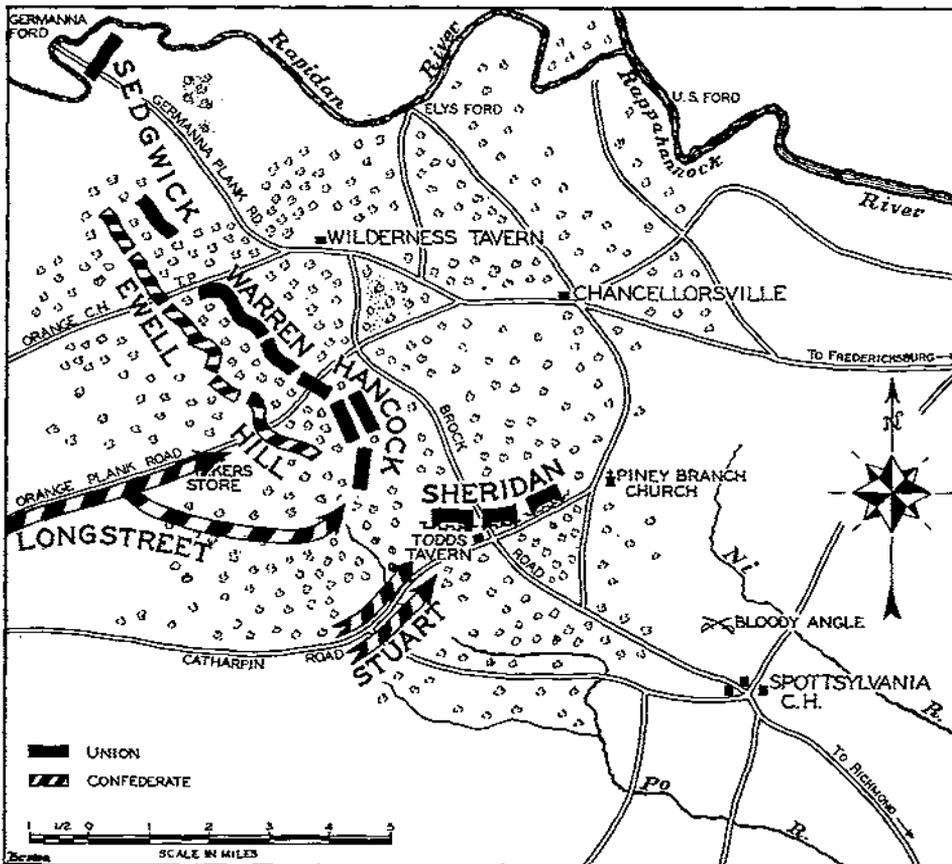
The inquiries and arguments took two weeks. Sheridan

was granted two weeks more in which to assemble his men and to rest their horses before reveille on the third of May blew the opening of the Hammering Campaign. Two of Sheridan's divisions led the two columns of infantry across the Rapidan that morning. Division Torbert, by Meade's orders, was held back to guard the rear—a perfectly proper employment for the nimblest troops of the army by Meade's ideas. Though Sheridan could hardly have agreed, he forebore any protest at the time.

On the 5th the Battle of the Wilderness broke among the tangled thickets south of the stream. Only two of the three big Confederate corps reached the field that day. On Lee's left, Ewell, with ground and good tactics in his favor, held Warren and Sedgwick around Wilderness Tavern amid appalling losses on both sides. On the Confederate right A. P. Hill did not get his men up quite so soon, and when he did arrive, found Hancock's II Corps, with the best battle-captain in the Union army, facing him. The fighting went ill for the Confederates; Hill lost ground, men and morale, only closing night saved him from a break.

But out of that partial defeat Lee drew a battle plan for the second day as perfect as a painting by Leonardo. (Map 1.) Longstreet arrived during the night with the third big corps. While Ewell held on the Confederate left and Hill slightly retired in their center, this fresh corps was to work round Hancock's flank and strike, crushing Hancock's corps and the line behind him against the anvil of Hill and Ewell. Stuart, who had also just arrived

with the rebel cavalry, was to ride round Longstreet, throw out a wing to menace the Union supply trains around Fredericksburg, then turn in behind Longstreet against the Federal rear. Like Leonardo's greatest work the plan went to pieces through the shifting of the foundation on which it was painted. As expected, Hancock attacked again the next morning, rushing Hill back till Longstreet came in on his flank. The Union division of General Mott was swept away, men coming back through the woods all disorderly, some with weapons and a few without. But they came past Hancock himself. He rallied them in person, shouting "Halt here!" till a brigade from his own reserve and a division from Grant reestablished the line. Under the increasing pressure he took up the retrograde indeed, but slowly, in good order, with no real gain to the attackers.



Map 1: The Wilderness—May 6, 1864.



*Astonishment ran through the ranks.*

Longstreet, trying to press home, went down with a bad wound. His corps took losses it could afford only as the price of crushing victory, and as twilight sifted through the spring leaves, crushing victory, any victory, was still far distant, riding with Stuart.

For Hancock's stand and Longstreet's wound had left Confederate success dependent on Stuart—whether he could coax Sheridan back on the trains, break his connection with the II Corps and arrive on its rear with something over 8,000 men. And Stuart, for the first time in his career, had failed to reach his final objective, or any other objective.

He started early on the morning of May 6, in two columns, just at the flank of Longstreet, toward Todd's Tavern, at which point the columns were to pivot north. Ambling easily along, the rebel horsemen reached the pivot points without difficulty, but there found log breastworks from which they were received with so lusty a fire of musketry that they reported the presence of Union infantry. Stuart weighted his column heads and tried to drive through. He was violently repulsed while the

ground shook with Hancock's struggle farther north, could not win an inch, and in the evening reported that Grant must have extended his infantry lines down that far.

But it was not Grant, it was Sheridan. Though the fact has been lost to sight in the flare of the giant duel of the infantry, he would not have been there at all had Meade's orders been carried out as that general wrote them. After crossing the Rapidan, the two cavalry divisions under Sheridan in person had been shunted aside to the left rear of the army, behind Hancock, and linking up with the third, Torbert's division, which was seeing the trains through at United States Ford and Fredericksburg. This was a perfectly normal cavalry arrangement for the Army of the Potomac, with the exception that the men were somewhat more concentrated than under earlier leaders, and apparently it was the disposition Lee counted on in making his grand attack.

But the night orders Sheridan received on May 5 were to "protect the trains" without specification of method, and the new general took the bit in his teeth. Instead of

drawing all his divisions back toward Fredericksburg, he shoved everything up, even bringing two brigades of Torbert's command ten miles forward from Fredericksburg to Todd's Tavern. One of the men in that division has left record of the astonishment that ran through the ranks that night when the order came down, "Unsaddle and go to camp," with an order to build breastworks following immediately. It was never so done in Israel before. Always in the presence of the enemy, the Union horse had kept their mounts packed and saddled, sleeping with bridles over their arms, ready for a quick getaway. This time they had reached position, the horses were out of it and they were there to fight.

They did fight; and the report of how and where they fought on the morning of the 6th reached Meade simultaneously with the news of Longstreet's blow at Hancock. Remembering other Lee offensives—Chancellorsville, the Seven Days—Meade could visualize the next step as a Confederate cavalry movement around his rear, between the army and its trains at the Rappahannock crossings. He ordered Sheridan to "draw in and protect the trains" and that night the Union cavalry were going back.

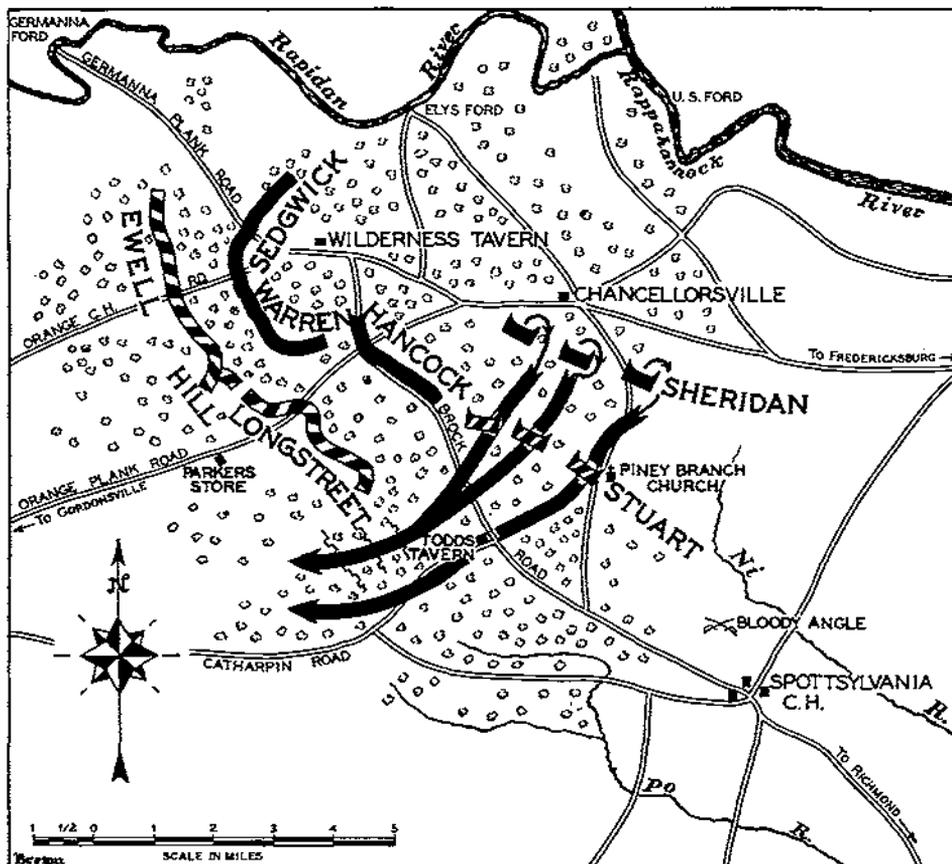
Stuart's men followed them in, and on the morning of the 7th, taking this retrograde as part of a general retreat, injudiciously tried a vigorous pursuit of Custer's brigade, the one nearest Hancock. Custer turned on them, counterattacking savagely. Sheridan learned of this almost immediately. At the same time he heard that more rebel

cavalry formations had been located farther east and got some information from prisoners. The aggregated information brought into focus in his mind a full picture of Stuart's movement—a cavalry advance across a front that grew ever wider as the Confederate formations moved down the radii of a fan.

Once again he ran away with his orders, spun the divisions of Gregg and Wilson sharp round in their tracks, and attacked with all his strength. His closer concentration gave him numerical superiority at all contact points, and the repeating carbines in Wilson's division turned this into something like a two-to-one advantage of fire-power. Beside, he was counting on battle and ready for it, his men were nearly all dismounted, operating as infantry against Confederates on tall, vulnerable horses. The Union troopers hustled Stuart's men back along every road, carried Todd's Tavern, and beyond it, coming on several lines of field fortifications constructed by the rebels during their repulse of the day before, stormed them one after another. (Map 2.) By twilight of the 7th Stuart was knocked out for a good twenty-four hours, Longstreet's right was in air and Sheridan on its rear at the head of ten thousand men.

Meade and Grant missed a chance here, or rather, never realized they had one. Both were still permeated with the view of cavalry as something fluid, a force which slept with bridles over their arms. Even the fact that Sheridan's men had fought on foot seems at this time to have made no impression. The special geographical conditions of the

Wilderness made dismounted action almost a necessity, it was impossible for an observer to discover that the step had been taken from choice. Moreover, on the 7th the move to Spottsylvania toward Lee's right flank by the main army, had already been decided upon; and Grant, who was beginning to grasp some concept of the use of a mobile fighting force, the motorized infantry into which Sheridan had turned his corps, had already ordered the cavalry to lead the flanking maneuver. Once again Meade played the marplot. Wilson's division, now the farthest to the left, and hence to the front of the new movement, went on to Spottsylvania with somewhere near 3,000 men. But Meade in person reached the headquarters of the other two divisions before Sheridan's orders did, and he instantly used both for purposes sharply different from those the Chief of



Map 2: The Wilderness—Morning, May 7, 1864.

Cavalry intended. Gregg was pulled out of the advance to protect trains (from what?—the whole Federal army was now between those trains and the nearest of Lee's men). Merritt, who had taken over Torbert's division, was held back to accompany and protect the movement of Warren's V Corps, guarding infantry on the roads according to the best muddled tradition of the Army of the Potomac. It was night; of course, Merritt's division became mixed with Warren's infantry and wagons on the wood roads. There was a wild traffic jam that stalled both horse and foot. Whenever Meade appeared the cavalry had to yield precedence to Warren, and Merritt emerged from the tangle well behind the infantry he was supposed to lead.

Wilson's single division was of course no match for the entire Confederate corps that presently arrived at Spottsylvania. After some hard defensive fighting it was driven out, and the whole desperate business of the Bloody Angle, with ten days and fourteen thousand men lost, had to be gone through with.

But Bloody Angle was still in the future when, on the night of the 8th, Sheridan came tearing into headquarters, red, angry and swearing, not mincing the words he shouted as he demanded to know whether he were truly Chief of Cavalry or only a rubber stamp for others' ideas. Meade snapped back the wearisome old arguments about the safety of trains and columns. Grant listened, impassive as an ox, till both men began to repeat themselves, then turning to Sheridan asked him briefly if, being allowed to write his own orders, he could guarantee the elimination of Stuart.

"Yes," flashed Sheridan.

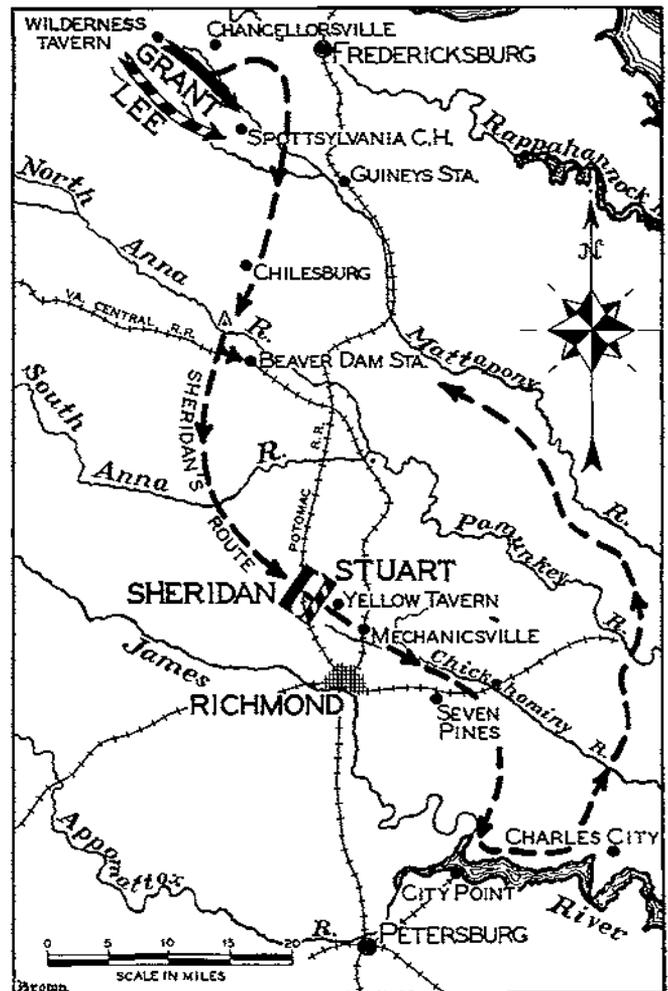
"All right," said Grant.

## V

Next morning Sheridan began concentrating back on the long lateral road that runs from Fredericksburg to Orange, behind the Union right rear. Men and horses had a good night's rest, then started early on the 9th May, riding south and east at a sober walk in a single column, thirteen miles long, to get right around the rebel army.

The men, impressed with the leadership of their Little Phil during the hard fighting of the past week, were more impressed now. Under Stoneman, Pleasonton, Kilpatrick, they had moved out on such expeditions at the trot, on parallel roads in tight bunches. When the enemy showed up for a fight, their horses were blown, themselves tired, and the nearest support, also on tired mounts, would be distant across miles of country. Or as we should put it in modern phrases, Sheridan realized that mobility is an evanescent quality, one that can be used for either strategic or tactical purposes, but not both. He was aiming to arrive at the scene of any action with full gas tanks.

Perhaps this is reading more into Sheridan's doctrine than he himself put there. Yet the proof that he had thought the matter through better than any man of his time lies in that single long column moving slowly on. "I preferred this to the combinations arising from using several roads," he himself said. "Combinations rarely



Map 3: Wilderness to Yellow Tavern and beyond.

work." With horses at a walk that column did not present the danger it appeared to. A blow at any portion of it would be subject of envelopment from the wings, all the men moving at the full tactical speed that had been preserved to them. . . .

That is, it worked. Confederate Brigadier Gordon located that serpentine column late on the afternoon of the 9th, near Chilesburg, (Map 3) already well round the Confederate flank and in the rear, but he dared attempt nothing even against its rear. It seems that Stuart had expected to find the Union cavalry off on the other wing of their army, leading the advance. He had the bulk of his men out in that direction, feeling for them till word came through from Gordon.

Now mark the soundness of Sheridan's plan, which brought him to the North Anna by night. He might turn straight north into Lee's rear, or south toward Richmond. To prevent the first move falling without warning, Stuart had to leave Gordon behind with nearly a third of his own cavalry. To fend off a stroke at Richmond, he had to expend his own mobility in a long, hard ride, round the Union head of column, leaving uncovered for some length the two vertical railroads out of Richmond along which Lee was drawing supplies.

That night the Union riders had another surprise. In-

stead of the all night "stand to" in separate little picket camps which had been the custom during raids in their army, they found themselves in one big camp astride the North Anna, with artillery placed and unlimbered, soldiers getting full bellies and a good night's rest, horses unsaddled. One who was there noted that next morning they began to sing. They were content with their Little Phil, and he was everywhere among them. "We saw him daily, whether we were in the advance, at the rear, or the center of the column, and he would as soon borrow a light from the pipe of an enlisted man as from the cigar of an officer. The common soldier's uniform was good enough for him."

That morning, the 10th May, he sent a brigade of them out east under Custer to Beaver Dam Station on one of Lee's railroad lines. A big supply magazine was burned out; it had held the whole of Lee's medical stores, doubly precious in that army which had to use medicines run in through the blockade. A batch of Union prisoners was released; the trackage ripped up for some distance.

Down in Richmond they had news of Sheridan now, the bells were tolling alarm, home guards were being called out and troops summoned all the way from the Carolinas. The Union column plodded steadily on, slanting toward Richmond. They crossed the South Anna in the afternoon and shot out another brigade, Davies', which just at twilight touched the second vertical rail line out of Richmond. Wires were torn down and tracks up; a second depot of stores went. Before midnight both forces had fallen in on the main body, bringing some prisoners.

Sheridan, now as ever his own G-2, extracted from them the information that Stuart had arrived before Richmond and was waiting in a prepared position at Yellow Tavern, just north of the Chickahominy. Gordon's brigade had been haunting the Union rear all day. Evidently some measure had been concerted to bring that also into the impending battle. Sheridan had no objections; the whole purpose of his raid was not to seize any particular point, but to bring *all* Stuart's men to action, and to handle them so roughly that they would never again dare one of their great sweeps—as Grant's purpose in the whole campaign was similarly to impose the defensive on Lee.

Merritt's division had the advance in the morning. He found the Confederate line holding a crossroads at Yellow Tavern, facing west across his front; dismounted, and punched through. It was a trap, of course. There was a second line behind the first. As soon as Merritt was involved against it, a battery of artillery opened an enfilading fire from cover, and down from a grove of trees came Stuart at the gallop into Merritt's flank.

But Sheridan had met trap with counter-trap. As Merritt's line crumpled, his men firing as they scattered to cover, George Custer, yelling "Come on, Wolverines!" flung himself into Stuart's flank. There was a violent shock, a tangle, Custer was driven off for a moment, but came on again with the whole weight of Wilson's division behind, and the Confederates went tumbling back, their great leader out of mischief forever, shot through the lungs. Wilson's men swarmed all over the rebel line, shot

down the artillery's support, captured the guns, drove what was left of Stuart's cavalry right away before them.

"Combinations rarely work." Now, when Stuart was down and the defensive line gone, Gordon arrived on Sheridan's left rear in a mounted attack. The Union leader had foreseen that too. Gordon ran into a breastwork of interlaced branches with Gregg's men firing from behind it, was shot dead from the saddle and his brigade driven off northeast on an eccentric.

Sheridan moved on round the defenses of Richmond, got supplies from the fleet in the James, and shuttled back up across the rivers to the main army, which he rejoined on the 24th May. It tells the whole story to say that the Confederate cavalry never molested him again. Infantry tried to stop him once, where the fixed defenses of Richmond reached the banks of the Chickahominy near Mechanicsville. These unconventional cavalymen rebuilt a broken bridge under fire, crossed it, and drove the infantry off in a combat of which not enough details have survived to permit an intelligent account.

It does not matter. Nothing in the story of this operation matters after the battle of Yellow Tavern, which, hidden from the sight of northern eyes by the red glare rising round Bloody Angle, inflicted upon Southern morale a heavier blow than the loss of Stonewall Jackson. For Jackson fell in the moment of victory; at Yellow Tavern the Confederacy lost not only Stuart and Gordon but also the legend of its own invincibility in the arm that was the pride of every Southerner. Says Grant: "This raid had the effect of . . . thenceforth making it easy to guard our trains."

No other praise is necessary.

## VI

Yellow Tavern thus established Sheridan within the army. To the country he remained merely a corps commander who was doing well, a name among the others that appeared among the others in dispatches from the Virginia scrub-lands where the fighting was going forward with such bloody indecision. Lee seems fully to have realized the political effect of this indecisiveness on the North, and clutched though he was in Grant's embrace, found means to win minor but morally impressive triumphs in the one field where geography practically guaranteed Southern victory. Or was Early's move to the Shenandoah Valley dictated by the more narrowly military hope of forcing Grant to make large detachments from the forces around Richmond?

No matter. Early was in the Valley with a large corps. Early shuttled to and fro, defeating Federal local guards, breaking up the important supply line of the Baltimore & Ohio. Early crossed the Potomac, smashed a hastily gathered force at the Monocacy, and marched to the gates of Washington, where President Lincoln was under fire. Something would have to be done about Early.

General Wright was pulled out of the Petersburg trenches with his VI Corps and sent to Washington. His operations were sound enough, but futile. The Confed-

crate leader, moving up that fertile and friendly region where he could keep his trains to a minimum, danced away from Wright's lumbering legions. The moment Wright went back to Petersburg Early came back down the Valley. Once more he broke the Baltimore & Ohio and lanced into Pennsylvania, where he laid the town of Chambersburg under \$300,000 ransom. There was not that much money in the place, so Early turned the inhabitants out into the summer fields and burned it, every stick.

Throughout the North the papers went wild. A year after Gettysburg the rebels were burning towns in Pennsylvania! In parallel columns came the news from Chicago—the Democrats had finished their convention; they were going before the electors on a platform declaring "Lincoln's war" a failure, a repetitious bloody agony. Washington telegraphed feverishly to Grant, another in the series of such telegrams that had been flashing along the wires since Early began his raids. Something would have to be done and Grant would have to decide what it was.

Already, some time before, Grant had pointed out that the trouble in the Valley was not one of forces but of commands. As things stood the Shenandoah and its neighborhood formed the boundary lines of four separate military departments, each with its own troops and officers. Washington agreed with Grant that the whole thing should be under a single head, with a concentrated army "big enough to follow Early to the death," an army particularly strong in cavalry to offset the mobility the friendly country gave to the Confederates, an army that should burn out the Valley granary to an extent where it would no more harbor rats.

But there had been a tug-of-war over leadership. Grant again wanted Franklin, a suggestion which was coldly received. Meade was offered, but the idea was politically all wrong, it would look like the demotion of the commander of the Army of the Potomac, which would be a confession of that very failure the Democrats claimed. Hunter, already in the Valley, was too old and slow; Hancock, too good a corps leader.

This was the situation when the Chambersburg raid caused Grant to react with the speed of a steel trap, as he always did when irritated. "I am sending General Sheridan," he wrote. "I want him put in command of all the troops in the field."

It was a *tour de force* in both directions on Grant's part, for Sheridan himself, approached on the project of taking over what had suddenly become the critical command of the war, was dubious about his own capacity. He would prefer, he said, to command a corps, perhaps the cavalry, under some other leader. Grant listened and smoked, his mind probing for the reason behind this unexpected diffidence on the part of an officer who had not hesitated to stand up to the testy Meade. Finally he hit it—the Valley commands were full of old, senior, respected officers—Hunter, Averell of the cavalry, "Fight mit Franz" Sigel, Wright—some of them twice Sheridan's age.

Grant remarked that this was a campaign in which seniority did not count. If the older officers objected to serving under Sheridan he was to relieve them—"Do not hesitate to give command to officers in whom you repose confidence, without regard to claims of others on account of rank." Hunter did object to serving under the junior Sheridan. He was given his walking papers, and on August 7, at Harper's Ferry, the new leader took over his army, with everything in it to do and the political campaign hurrying on.

It is important to any estimate of Sheridan to realize that his new "army" was a motley collection of units, unknown to him and to each other, units that required to be united, magnetized, stamped with the impress of a single personality, before they were fit for anything. The VI Corps, under General H. G. Wright, had a long, honorable history in the Army of the Potomac, but like its general, was distinguished for solidity rather than speed, a unit better on defense than on attack. The XIX Corps, Emory's, had been doing garrison duty and police work in Louisiana. It had never been assembled as a unit, was unfamiliar with any but guerilla operations, and could hardly be called a fighting corps. Crook's VIII Corps, the former Army of West Virginia, had seen a great deal of fighting, all of the wrong kind. The men had the hang-dog, careless attitude of troops that had never known victory, were spiritless, and were no more than Emory's men used to working in big formations. Two of the four divisions of cavalry, Averell's and Duffie's were from this same army, with the same drawbacks. They had moreover, been trained in the prehistoric tradition of "living in the saddle"; regarded dismounted action as something no decent cavalryman would take if he could help it. In the whole army only the other two cavalry divisions, those commanded by Merritt and Wilson, knew Sheridan and his methods. They were a small leaven in a mass of nearly 50,000 men.

This then was the force Sheridan had to make into a fighting machine. It had some other peculiarities, of which the most striking was the cavalry-infantry ratio of 1:4, higher than any before seen on the American continent. Another was that Sheridan assigned no less than nine batteries of artillery to this cavalry, or four and a half times as many guns as he had had in the Wilderness for the same number of horsemen; and this artillery was the best he had, United States Regulars.

Early discovered the significance of this in the first and perhaps the most important operation of the Army of the Shenandoah, though it was one crowned by no bar, yielding no newspaper results. When Lee learned that the VI Corps and two divisions of cavalry had been sent to the Valley, he accepted the transfer of major operations thither with evident relief. He reinforced Early with the major portion of Longstreet's Corps and Fitz Lee's cavalry division, which brought the Confederate Valley army up to a strength beyond the powers of Sheridan's rag-tag host, at least in the opinion of Grant, who warned his young subordinate to be careful.



Map 4: The Valley.

Sheridan, who had been well forward toward Winchester, accordingly retired to a position near Halltown, where he could cover both Harper's Ferry and the northbound roads that lead past it on the west, and dug himself in. (Map 4.) There was a river on either wing, when Early came up, he inspected the place, and decided it was too strong to be forced, too good to be flanked.

There is more than one way to handle such a situation, and Early worked out an excellent method. He left a division on Sheridan's front, strongly fortified; moved the main body of his infantry up to Shepherdstown, and flung Fitz Lee out ahead to see what he could do about passing the Potomac. If Sheridan advanced against the fortified division Early would come back and fight the Union leader on ground of his own choosing, but he considered it more likely Fitz Lee's threat would force the Army of the Shenandoah to retreat.

Nothing of the kind happened. Sheridan remained coolly within his lines. Wilson's cavalry division held the South Mountain passes; Merritt's knifed in between the detached division and Early's rear, feeling for his com-

munications; and Fitz Lee reported that Averell was holding the Potomac crossings in trenches, so well supplied with artillery that crossing would be a bloody business, probably could not be achieved at all without infantry support.

In short, Sheridan had used the mobility of his cavalry as he proposed before the Wilderness—to seize and fortify a series of positions that severely constricted the scope of Confederate operations. Adventures beyond the Potomac had been rendered impossible to Early. But unless his army could adventure there, it had no purpose; could not affect the main campaign physically or morally. It could only go home; and when Grant started the Deep Bottom offensive, Lee called in Longstreet's Corps. It was September when they crossed the mountains through the ripe crops, and the northern elections rushing on apace. The day Longstreet reached Richmond Grant sent his commander in the Shenandoah the famous two-word telegram:

"Go in."

*(To be concluded)*



# KITCHENER AND GALLIPOLI

By H. A. DeWEERD

**"The Empire believed him to be resolute, self-reliant, creative and lion-hearted."**

The war efforts of democratic countries are frequently marred by bitter controversies between political and military leaders. Unless the lines of responsibility and authority in such states are clearly defined and respected by both parties, these quarrels are almost inevitable. Often they arise from the vagaries of civilian officials or from the narrowness and inelasticity of professional soldiers. The history of the Civil War and of the World War makes it clear that statesmen and soldiers in democracies at war must somehow manage to cooperate effectively—or risk disaster. Nowhere is this lesson more clearly revealed than in the campaign on Gallipoli.

No other campaign in British history has aroused more controversy. The military and political stakes on the Balkan board in 1915 were incalculable. An Allied victory at the Dardanelles coupled with proper diplomatic pressure might have led Bulgaria, Roumania, and Greece to attack the Central Powers. Turkey would have been forced out of the war. A thrust at the naked flank of Austria-Hungary might have led to a peace by negotiation in 1916. The military problems involved in an attempt to force the straits were not insoluble. The British Empire possessed sufficient military resources to attain this objective in 1915, but the stroke failed. The Central Powers gained an accession of strength through this failure; Bulgaria joined the German coalition, and the war was prolonged. Responsibility for the failure at Gallipoli must be placed primarily at the door of Britain's war administrators.

Britain's statesmen in 1915 have all been repeatedly catalogued. There was a scholarly, compromising, somewhat timid Prime Minister, Mr. Asquith. The Foreign Secretary, Sir Edward Grey, had all the Prime Minister's qualities without his honesty. At the head of the Royal Navy was an eloquent, slashing, eccentric opportunist, Mr. Winston Churchill. He was supported by an erratic and brilliant professional adviser, grown old in the service, Lord John Fisher of Kilverstone. But by far the most important military figure in the cabinet in 1915 was the War Minister, a High Church field marshal whose military reputation was gained entirely on colonial expeditions, Lord Kitchener of Khartoum.

Parliamentary commissions have attempted to determine the causes of the Gallipoli disaster. They have assessed the responsibility of various individuals. Their findings were not unanimous, and the controversies aroused will probably go on for centuries. A large number of critics feel that Winston Churchill, who guided the navy into an attack on the straits and who assisted in convincing Kitchener of the necessity of a military effort on

Gallipoli, is the prime villain of the tragedy. Such views tend to overlook the leading rôle played by Lord Kitchener in this disaster. An attempt will be made in the following paragraphs to set down his contributions to the Dardanelles failure.

Kitchener was ill-prepared to take over the duties of War Minister in 1914, but he did so out of loyalty to Mr. Asquith. He had been out of touch with affairs in England for many years, and his chief interest was always with the Empire in the east. At the outset of the war, however, he made two remarkably accurate forecasts. He held that Germany would invade France by way of Belgium, and that the war would last for years. Both of these views went counter to the prevailing military doctrines held in England and France, and, after events vindicated his views, Kitchener enjoyed the prestige which attends successful prophecy. He did not share the optimism which pervaded the British and French staffs after the battle of the Marne, but went ahead with a huge military program designed to make a decisive intervention in France possible in the later stages of the war. He planned to raise and equip 70 British divisions. When the so-called "Race to the Sea" ended in the establishment of a trench line from the North Sea to Switzerland, it appeared that Kitchener would have time to raise his armies behind the security of a defensive line in France.

Up to this point in the war, Kitchener had acted with prudence and with remarkable foresight. Singleness of purpose had been one of his outstanding characteristics in the Soudan and South Africa. Once having decided that Germany was the principal enemy and France the main theatre of operations, his course was clear. Everything not essential to this program should have been subordinated ruthlessly. Had he rigidly adhered to this program, he would have spared England a bloody reverse in the Near East and would have added greatly to his reputation.

But Lord Kitchener was a complete novice as far as War Office administration was concerned. He distrusted officers who had not worked with him in Egypt or South Africa, and he would not take advice from anyone he did not know. The territorial divisions, fourteen in number, were quietly shelved, and he completely ignored the elaborate machinery of the imperial general staff. Had a mere politician been war minister, he would have been forced to rely on the general staff; but Kitchener was a soldier in a politician's job, so he ran the British war machine single-handed. He soon met with difficulties and finally with a major disaster.

Lloyd George's *War Memoirs* have exposed Kitchener's

difficulties in providing munitions of war. Great as his efforts were, he was not able to adapt England's immense industrial resources to a war program. In the military sphere, too, embarrassments piled up. Inter-allied and imperial considerations made demands on Kitchener which he could not resist. Unsupported by sound staff advice, he was drawn protesting and unprepared into a major campaign outside the decisive theatre of operations. The steps by which he brought England to the brink of disaster were apparently so natural and inevitable that they may be repeatedly studied with profit by American politicians and soldiers.

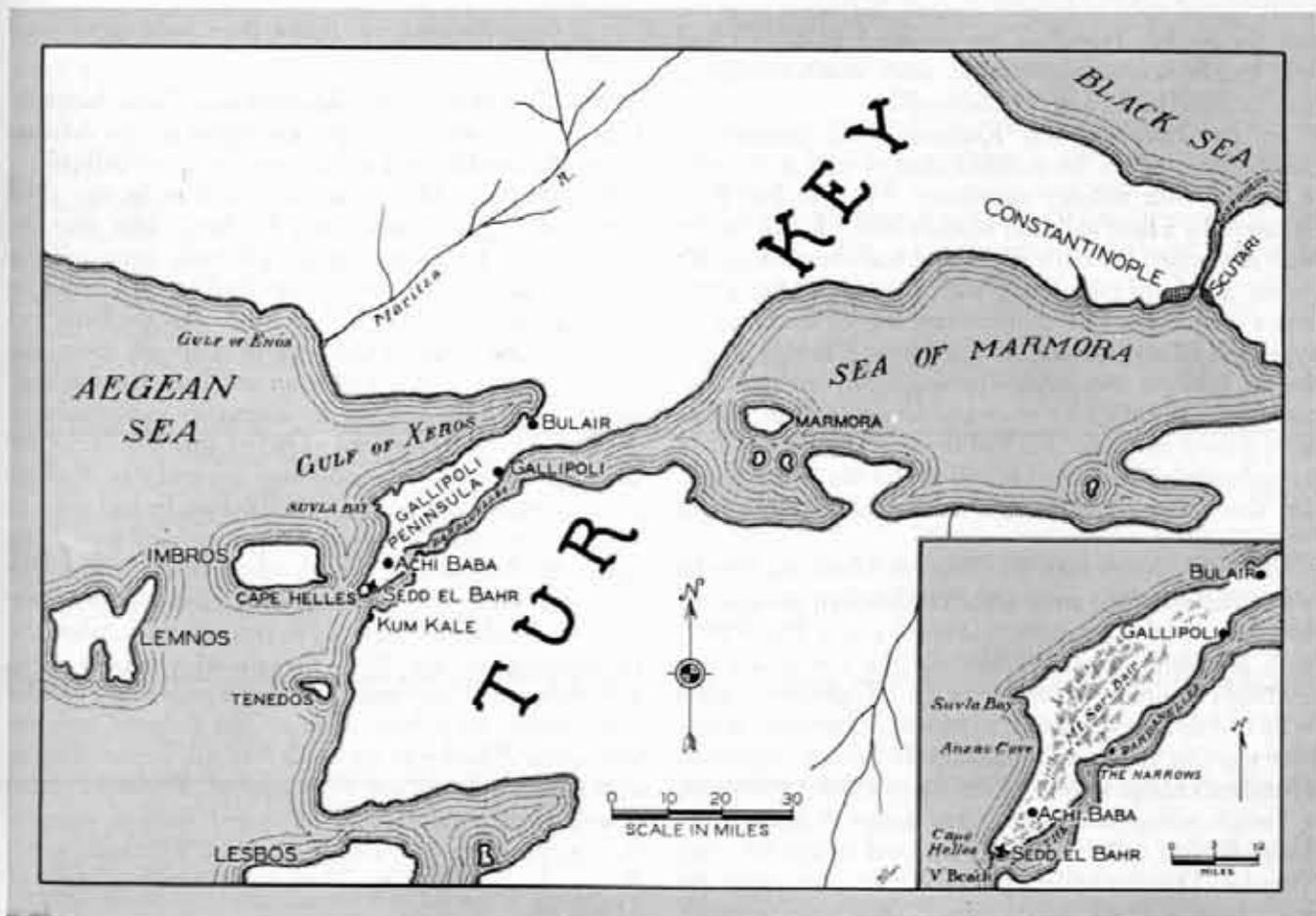
## II

The year 1915 dawned auspiciously for the Allies. Joffree had ambitious plans for an offensive in France and had committed Sir John French to this program. The oceans had been cleared of German cruisers, and Lord John Fisher was engrossed in a naval plan for attacking the Baltic coast of Germany. Kitchener was bringing troops to Europe from India and Australia and was using Egypt as a training ground for these forces. It was hoped that the Russian "steam roller" would be in a condition to function in the spring of 1915. If Italy could be induced to join the Entente powers, the German situation would be distinctly unfavorable.

Then, suddenly, there came a request from the Russians, who were being hard pressed in the Caucasus, for an English diversion against the Turks which might relieve their armies. Kitchener replied at once saying that he could do nothing effective. He knew that the Dardanelles was the only area in which a diversion would have instant effect upon the Turks, but he declared that England would not be ready "for anything big" for some time to come. This disposed of a land and water attack on the Dardanelles.

Mr. Churchill, however, was eager to trade old battleships for a new world, and he resolutely committed the navy to an attack on the straits. Admiral Carden's plan was accepted by the British War Council in language so extraordinary that good soldiers winced at the slight cast on the prime purpose of infantry, i.e.—taking and holding territory. The Admiralty was instructed "to prepare for a naval expedition in February, 1915 to bombard and take Gallipoli Peninsula with Constantinople as its objective." Kitchener approved the plan because he interpreted the silence of the professional naval advisers to mean that they concurred in the wisdom of the undertaking. The attack was to be broken off in case unexpected resistance was encountered.

The naval attack, which seemed to promise so much at the outset, soon found the going difficult. Yet it was con-



*The problems involved in an attempt to force the straits were not insoluble*

trary to British traditions to withdraw after the die had been cast, and so Mr. Churchill used his great persuasive powers to convince Kitchener that troops were needed on Gallipoli. He was able to show that a relatively large number of troops could be hastily assembled if the War Minister was willing to employ the territorial divisions. Egypt appeared to be over-garrisoned. As Churchill said, "Lord Kitchener was always magnificent in adversity," and he showed an admirable but fatal willingness to assist the navy in its distress. Even before the English admiral on the spot was convinced that the fleet could not win a passage unassisted, Kitchener was quietly trying to conjure up a makeshift army to fling on the beaches of Gallipoli.

This was done without taking the Chief of the Imperial General Staff into his confidence. In his first rush from reality there was no restraining influence exerted on the War Minister. No sober staff officer raised those questions which always embarrass the military sleight-of-hand artists. Such as, how much artillery and ammunition can be provided for the force? What is the extent of enemy preparation in the theatre? What bases can be utilized for the force? Are landing provisions adequate? Can the troops be provisioned and watered on the peninsula? What is to be done in case of reverse? How will the contemplated operations effect the military program already agreed upon in France? Instead, Kitchener rang the bell for Sir Ian Hamilton one morning in March and told him he was to command an army which was being sent to help the fleet at the Dardanelles.

Sir Ian Hamilton was Kitchener's old comrade of South African days, his so-called chief of staff at Pretoria, a man of wide military experience. His arm had been shattered by a Boer bullet on Majuba Hill. He had fought with distinction in South Africa and had observed *grande guerre* in Manchuria, along with Pershing, Max Hoffmann and others. His temperament was of the sanguine type, and he was remarkable even among British officers for his boldness and personal courage. No one could interpret Kitchener's half sentences or unexpressed wishes with greater exactness. He had brought the Boer War to a conclusion by defeating General De La Rey at Roodewal. On this occasion Kitchener's instructions were simply "git going."

When Kitchener told Hamilton on March 12 that he was to command the army at the Dardanelles, he expected him to bow, leave the room, and make a start. But Hamilton's knowledge of the Turks and the terrain was exceedingly limited. He could not go off without a word as he had done at Roodewal, so he asked questions. Kitchener was curt at first, but gradually he became expansive. Hamilton's troops were to be the Anzacs under Birdwood, a French contingent from Tunis under d'Amade, the naval division under General Paris, and finally the 29th (regular) Division under Hunter-Weston. On paper this was a force of nearly 80,000 men. As Kitchener went on, he seemed to be defending himself in an argument. He said that nowhere could these forces be as effectively ap-

plied as in the Near East where each bayonet might serve to attract a hundred others to its side. "GHQ in France," he said, "does not agree. They think they only have to drive the Germans fifty miles nearer their bases in order to win the war."

So complete had been the eclipse of the general staff in England under Kitchener's regime, that although Sir James Wolfe Murray, Chief of the Imperial General Staff, came into the room during this conversation, he seemed to be surprised at Hamilton's mission and made no remarks about the projected operation. General Sir C. E. Callwell, Director of Military Operations, told Hamilton all he knew about the Greek plans for seizing Gallipoli. Kitchener seemed to think that the operations would take the form of a *coup de main* and would be instantly successful. At first he wanted to provide only three staff officers to assist Hamilton, but finally consented to twenty-one. Only 1,600 rounds of ammunition were allotted for the 4.5-inch howitzers, and the usual ten per cent reserve of men for casualty replacements was not included. Hamilton's instructions were:

1. The army was not to act until the admiral was certain that the fleet could not force a passage unaided.
2. No operations were to be undertaken until the whole force was concentrated on the spot.
3. Operations on a large scale in Asia were not to be considered.
4. Once the force was landed there could be no turning back.

When he left England, Hamilton carried with him only Kitchener's instructions, a pre-war report on the defenses of the Dardanelles, and an inaccurate map of Gallipoli.

At this point Mr. Churchill ceased to be the chief author of England's woes, and Kitchener took over the responsibility for a campaign in which the army and not the navy was destined to play the leading rôle. Until he received Hamilton's wire of March 18, after the latter had inspected the Turkish defenses of Gallipoli from the crow's-nest of the cruiser *Phaeton* and had seen the navy suffer heavy losses during the afternoon engagement in the narrows, Kitchener seemed to feel that the rôle of the army would be a purely subsidiary one and that Turkish resistance would not be great. By this time he had come to regard the war in the west as a stalemate, and he did not expect the forthcoming French offensive to succeed. His strategic instincts told him to seek out a flank of the enemy coalition, but he was not ready in January, 1915, when the Russian request came. Now that the navy needed a lift, and while it still appeared likely that a *coup* at the Dardanelles would force Italy, Greece, and Bulgaria into the war on the Allied side, he decided to risk improvising an expeditionary force out of scraps of England's manpower. Such a force could be spared without compromising operations in France, and might, with luck, prove decisive in the Near East. Then came Hamilton's wire of March 18.

After having seen broad belts of Turkish wire at Bulair and Cape Teke, and having seen the *Irresistible*, *Gaulois*,

*Ocean*, *Bowvet*, and *Inflexible* sunk or badly mauled on the afternoon of March 18, Hamilton wired:

I am being most reluctantly driven to the conclusion that the straits are not likely to be forced by battleships as at one time seemed probable and that, if my troops are to take part, it will not take the subsidiary form anticipated.

Apparently this wire did not alarm Kitchener or change his views, for he replied in bold, clear terms:

You know my view that the Dardanelles passage must be forced and that if large military operations on Gallipoli Peninsula by your troops are necessary to clear the way, those operations must be undertaken after careful consideration of local defenses and must be carried through.

When this message arrived, the British admiral had concluded that he could not get through without the aid of all of Hamilton's troops. Accordingly Kitchener's strong wire was looked upon as a definite order to proceed with an operation which had not been envisaged when Hamilton left England. Thus, quietly and without taking his military associates into his confidence, Kitchener committed England to a second major campaign and created for himself the task of supporting two armies in widely separated theatres. Because the military direction of the war was vested in his single person, this decision passed at the time almost without notice. No one raised a question as to the relative importance of the two operations. The unforeseen but natural result was a constant conflict of demands from France and Gallipoli. Torn between these demands, Kitchener fell upon a series of tortuous half measures which led to a chain of heartbreaking failures.

### III

By giving his approval to large-scale operations on Gallipoli, the British War Minister began to desert the simple and secure military program which he set up at the beginning of the war. Yet his situation was by no means desperate or hopeless. He could still have saved himself and England. His duty in the new situation was simple but painful. He had to suspend offensive efforts in France, give prior claims to the Dardanelles army, and let the British staff in France say what they pleased. Kitchener did not believe in the success of their projected operations anyway. In South Africa he had shown himself capable of any kind of military brusqueness. He once answered the request of a column commander for reinforcements by taking half his command away from him. But somehow in 1915 he seemed to be afraid of hurting the feelings of the French staff, so he compromised and tried to carry out offensive operations in both France and Gallipoli.

Slowly the embarrassment of Lord Kitchener's position became apparent. He was fastened upon a rack and every day the agony of his position increased. Events forced him from one error to another. The Western Front advocates in England and France soon began to tighten the screws. At an inter-allied council at Chantilly on March 29 the Dardanelles matter was discussed. Sir Henry Wilson reports:

Millerand asked if there was any plan. Kitchener said not much of one; only plan to occupy heights on Gallipoli overlooking narrows. Sir John French hoped no more troops would be sent. Kitchener said *none*, there were already 67,000 men available down there.

The German gas attack at Ypres on April 22-23 gave the British staff another opportunity to warn against a weakening of the forces in France. Two days of tense waiting. Then the army of Sir Ian Hamilton was flung on the beaches of Gallipoli.

As is so often the case with large-scale operations, the first news from the peninsula after the landing was good and bad. The troops had landed with heavy losses at some points, and with practically no loss at others. Unfortunately the principal landing at "V" beach near the ruined fort of Sedd el Bahr sustained a costly check and no advance was possible until late the second day. When at last the full weight of Hamilton's troops could be directed against Achi Baba, it encountered an enemy reinforced by Liman von Sanders, who courageously denuded Bulair while warships and transports were still feinting an attack on that area. The British troops, fighting by day and transporting wounded and supplies at night, did all that high-spirited volunteers could do under circumstances of incredible confusion to wrest a victory from an intrepid adversary. But the limits of human flesh and spirit were reached. Hamilton's forces were brought to a halt short of their objective.

Liman von Sanders, quick to take advantage of this pause, launched a series of vigorous counterattacks which shook the British and the French, but which failed with heavy losses. Then, on May 6, the reorganized Allied army took the offensive again in a determined effort to reach the high ground before the Turkish army was well entrenched. These attacks were made on a three-mile front by 20,000 troops. 18,500 rounds of shell, principally shrapnel, were fired in support of these attacks. A gain of only 600 yards was made at the cost of 6,500 casualties. Night fell on May 9 with the coveted positions still in the hands of the Turks. The initial stroke had failed.

With the failure of this attempt Kitchener's hopes of an easy victory passed away. After that date success could only be achieved by a prompt and large scale reinforcement of the army on Gallipoli and by the employment of artillery on a scale comparable to that on the Western Front. On the heels of this disappointment came news of the dismal failure at Aubers Ridge where the British First Army sustained 11,000 casualties without gaining a yard of German trenches. On May 17 Hamilton wired that to attain his objectives he required at least two new corps or an ally. Then, to add to Lord Kitchener's distress, a political crisis developed and the government was overthrown.

Hamilton's request of May 17 arrived in England in the midst of a tense and complex political situation. Lord John Fisher, the First Sea Lord, had resigned with a flourish and, in spite of all entreaty, had sullenly headed for Scotland. His dramatic resignation broke down the

government. Churchill, who was publicly held responsible for Fisher's resignation and the failure of the navy at the Dardanelles, was removed from the Admiralty and relegated to the Duchy of Lancaster. Colonel Repington took this occasion to publish his famous "Shell Scandal Letter" in the *Times*, and Kitchener found himself under heavy political fire. Mr. Asquith, however, did not dare to leave him out of the cabinet when it was reconstituted. The net result of this confusion was that Hamilton's request of May 17 was not formally considered by the new Dardanelles committee of the cabinet until June 7.

A decision was made on that date to reënforce Hamilton with three divisions and to replace valuable naval units with "blistered" ships and monitors. Between May 17 and June 7, however, the Turkish positions were appreciably strengthened. Deep trenches were dug by both sides, and operations took on the form of those in France. In these circumstances Kitchener did not wish to commit the new troops to the costly business of piercing Turkish trench lines. A plan was formulated for a surprise landing at Suvla Bay. Troops for this operation were organized into the IXth Army Corps. Their movement was to be supported by an attack from Anzac toward Sari Bair and by a holding attack at Helles. The stroke was set for August 6th.

New blunders by Kitchener diminished whatever chances the IXth Corps might have had. Hamilton asked repeatedly for rugged, fighting officers to lead the new forces. Operations on Gallipoli called for great stamina, drive, and hardiness. He asked for Generals Bruce Hamilton, Rawlinson, Byng, and Horne, but Kitchener said these men could not be spared in France. Since Lieutenant General Sir Bryan Mahon, commanding the 10th (Irish) Division, was the only officer with that rank in charge of a division, Kitchener felt that the IXth Corps commander had to be senior to him. Had he been willing to replace Mahon, who had trained the 10th Division, it would have been possible to have selected a younger officer for the IXth Corps. Not having the heart to replace Mahon or hurt his feelings, Kitchener appointed Sir Frederick Stopford to the command of the IXth Corps. Stopford had a long, non-fighting record in India. Hamilton protested but loyally agreed to do his best with what was sent.

On August 6 the new divisions were landed at Suvla Bay almost without loss. The only enemy forces in the immediate vicinity were two gendarmierie battalions. Local surprise was complete; the attacks at Anzac and Helles were made on schedule, and success at first seemed certain. But Stopford showed astonishing lack of energy. Troops were allowed to loiter around the beaches and in the foothills without securing the high ground. The enemy commander described the inactivity of the IXth Corps after the landing as "incomprehensible." Hamilton ultimately replaced Stopford with General de Lisle, who said that the want of grip shown throughout the higher command at Suvla was worse than he dared put on paper.

After the Suvla operation failed with very heavy losses,

Kitchener hurriedly sent out Generals Byng, Fanshawe, and Maude. So, after it was too late, Hamilton had a group of strong, energetic commanders. These blunders were so elementary that even a politician could see through them.

#### IV

With the failure at Suvla Bay the Gallipoli campaign was lost. It dragged on for months absorbing troops, supplies, and shipping, but it was without meaning or significance. Bulgaria, sensing this, drew closer to the German camp and openly prepared to attack Serbia. The British offensives in France failed to produce results compatible to the losses sustained. The army in France felt that their success had been compromised by the drain of the Dardanelles operation. The forces at Gallipoli, it might be argued, could have succeeded had they been allowed to expend the high explosive shells which were "wasted" in France. A heavy fire of criticism was directed at Lord Kitchener. His self-confidence withered and he became confused. He even went so far as to ask advice from Sir Henry Wilson, a man he had hitherto despised. He could not make up his mind to evacuate Gallipoli. Instead he adopted a policy of drift and waited for something to happen. According to Wilson:

Kitchener's attitude is that we can't get out of the Dardanelles without appalling disasters there and all over the East, without some success. . . . I asked him if he proposed to go on to Constantinople, and he said, "By God no! By God no! I have been let into the thing, and never again. Out I come the first moment I can!" He realizes that it is bleeding him white and dreads the whole thing, but favours further operations ending in success and then withdrawal.

The man who used to speed his train beyond the range of safety in South Africa now took every measure possible to delay the decision to evacuate. Meantime Sir Ian Hamilton dangled on the end of a wire at Imbros.

During the period of drift misunderstandings occurred between Hamilton and Kitchener. Although Egypt was a separate command under General Sir John Maxwell, the War Minister expected Hamilton to look upon the forces in Egypt as his own. When the latter tried to act on this assumption, Maxwell always had some good excuse to prevent a large transfer of troops from Egypt to the Dardanelles. Had Kitchener wanted Hamilton to draw on Egypt, he should have placed both areas under one commander. In time of war it is better to order than to ask for troops. Soon Hamilton and Kitchener were quarreling over such simple matters as numbers of effectives. The War Minister became deeply concerned over unofficial reports on the Dardanelles operation. He allowed the celebrated "Murdoch letter" to be circulated in England neatly printed on the stationery of the Committee of Imperial Defence. This letter sharply criticised the British headquarters staff. When Hamilton loyally defended General Braithwaite, Kitchener's own choice for his chief of staff, he signed his own recall. On October 17 the inevitable wire arrived saying:

Though the Government fully appreciate your work and

the gallant manner in which you personally have struggled to make the enterprise a success in the face of the terrible difficulties you have had to contend against, they, all the same, wish to make a change in command, which will give them an opportunity of seeing you.

New commitments were made necessary for England by the intervention of Bulgaria. The Salonika force drained strength from the army on Gallipoli. Even in this circumstance Kitchener could not make up his mind to evacuate. General Sir Charles Monro, Hamilton's successor, sent in a strong recommendation for evacuation, placing the probable losses in such an operation at forty per cent of the effectives. This wire jarred Lord Kitchener into a brief spasm of action. He wired General Birdwood, who was in local charge on Gallipoli:

You know the report sent in by Monro. I shall come out to you; am leaving tomorrow night. I have seen Captain Keyes, and I believe that the Admiralty will agree to make a naval attempt to force the passage. We must do all we can to support them. Examine carefully the best position for landing near the marsh at the head of the Gulf of Xeros, so that we could get a line across the isthmus, with ships at both sides. I absolutely refuse to sign orders for evacuation, which I think would be a grave disaster and would condemn a large percentage of our men to death or imprisonment.

"This," said Winston Churchill, "was the true Kitchener. Here in this flaming telegram—whether Bulair was the best place or not—was the Man the Empire believed him to be—resolute, self-reliant, creative, lion-hearted." But Kitchener no longer had the power to bring off the brave stroke intended. He lamely wired the next day that he had changed his mind.

The obvious blunders of Kitchener in the administration of the Gallipoli campaign caused widespread demand for his removal from office. Prime Minister Asquith, as usual, compromised by sending him off to examine the situation at first hand. After having visited Gallipoli, Salonika, and Athens, Kitchener agreed in principle to the evacuation of Anzac and Suvla but urged the retention of Helles. On December 7 the British cabinet approved this decision. Immense care and foresight in the preparation for the evacuation made it possible to withdraw from Anzac and Suvla on December 20 almost without loss. Kitchener's relief was immense. On December 23 Sir William Robertson, who had been brought from France as the new Chief of the Imperial General Staff with greatly augmented powers, recommended the complete evacuation of the peninsula. Equally astonishing success attended the evacuation of Helles on January

8, 1916. One can only wistfully conjecture as to what might have happened if the original landing had been as carefully planned and executed. Thus, the British army closed the ill-fated campaign with two difficult but brilliantly executed movements.

## V

Lord Kitchener's contributions to the Gallipoli disaster were unique. His position in the cabinet was both political and military in character, and this enabled him to ignore the general staff in England and to carry out a personal military program. He alone had the power to transform the lagging naval attack into a major effort by the army on Gallipoli. As a consequence his personal responsibility for the military débâcle must be regarded as complete. The assumption of large-scale operations on Gallipoli meant the abandonment of his simple and safe program of building up the British army for a decisive campaign in France. His strategic instinct for seeking a flank of the enemy coalition was sound, but he allowed his hand to be forced. Once committed to the operation, he lacked the courage to suspend offensive operations in France. This made it impossible for him to provide the necessary margin of strength to win at Gallipoli. His choice of subordinate commanders for the Suvla thrust was bad, and he advertised this by sending out the required men *after the failure had occurred*. He rather inconsistently considered the troops in Egypt as belonging to the Gallipoli army but maintained Maxwell in the position of an independent command. Once failure was apparent, he did not consent to evacuation of the peninsula until after three and a half months of delay and drift. Thus, at every step in the campaign, he demonstrated a singular inability to make the *right decision at the right time*.

The vacillating and tortuous conduct of Lord Kitchener in the Dardanelles affair destroyed whatever remained of his influence in political circles. He was stripped of the vast powers he enjoyed early in the war. Lloyd George took over the control of munitions, and Sir William Robertson assumed control of the strategical direction of the war. Kitchener retained only those functions performed by the War Minister in time of peace. Such was his station when he undertook his mission to Russia in June, 1916. From this journey he did not return. His soldier's death at the hands of the enemy caused England to forget his failures, and in the succeeding years the long sweeps of the north Atlantic have slowly washed away his shortcomings.



# Manassas Maneuvers

By Colonel Earl W. Thomson, Coast Artillery Corps Reserve

"Are there any questions, gentlemen?"

The chief umpire from Third Corps Area Headquarters had finished his final instructions to the two hundred or more umpires before the opening of the Fourth Battle of Bull Run and had poised the usual rhetorical question. But something was not understood. A heavy voice, backed by the insignia of eagles, asked: "How are we to know when hostilities are to cease?"

The chief was slightly nonplussed, but cleared his throat and answered: "That has been covered, but I shall repeat it for those who did not understand. A neutral telephone will fly between the lines trailing red-and-white streamers."

The assembled umpires first chuckled, then remembered their military training, and silently correct the mental aberration of the chief.

Frankly, though, to the individual soldier in the opening phase of the First Army Maneuvers at Manassas from August 14 to 17, it appeared that anything was liable to fly up and down between the opposing lines. Officers with white armbands and hatbands of umpires were hopping, running and jumping between the lines of combatants, calling off the war or penalizing the over-zealous. Others with the green bands of claim agents were prohibiting

travel through unleased cornfields or along private roads. And still others with the yellow "quarantine" insignia of correspondents were trying to find out what was happening so that the folks back home would know who had won the war.

The participants reached the obvious conclusion that no one but the umpires could have won this theoretical war of maneuver.

The Third Corps phase of the First Army Maneuvers pitted the "Blues" consisting of 16,000 National Guardsmen of the 28th and 29th Divisions, reinforced by the 213th Coast Artillery (AA), Pennsylvania National Guard and the 260th Coast Artillery (AA), District of Columbia National Guard, a provisional air group, tank battalion, and an engineer bridge train, against the 5,800 Regular Army men of the provisional streamlined division called the "Blacks."

The 28th Division, of the Pennsylvania National Guard and the 29th Division from Maryland, Virginia and the District of Columbia, were each organized with two brigades of infantry and one brigade of field artillery, with engineer, medical and quartermaster regiments. This was essentially the bulky, slow-moving, foot-plodding, infantry division of World War days, built up for a war of position.

The enemy, on the other hand, was a hard hitting, highly mobile force of combat teams, furnished with some of the Army's new motorized equipment and the faster

The Umpires Won  
the War

A 3-inch antiaircraft gun in action "somewhere in Virginia."





*The National Guard antiaircraft artillery goes into action at night.*

firing weapons. With armored cars for scouting, reconnaissance and combat, with high-speed tanks capable of travelling fifty-five miles per hour, and with some horse cavalry and horse-drawn field artillery in addition to the motorized artillery, infantry and cavalry, this highly mobile Black division harassed the flanks of the Blues. It worried the staff G-2's almost to distraction, captured outposts, a whole medical battalion, and a whole brigade staff. With the agility of a fencer this compact organization thrust and parried, attacked and counter-attacked, first to the right, then to the left, until the umpires stopped the war.

On the opening day of the maneuvers the Black motorized brigade and mechanized force moved from its base at Quantico so fast that the 121st Engineers and the 103d Engineers had difficulty in stopping them with demolitions, tank traps, road blocks, mines and concertina wire. Before the umpires ruled that they had been stopped after five hours of fighting, the 66th Infantry (Light Tanks) had pushed sixty-five tanks across Broad Run, into the area of the Blue corps. The umpires then rearranged the lines so that the troops would fight on property which had been leased.

To meet this speedy attack both the 28th and 29th Di-

visions organized highly mobile division reserves, each loaded on thirty trucks. These reserves consisted of two companies of infantry and two batteries of 75's. These detachments made flanking raids, and counter-attacks against the tanks. They blocked the roads with the trucks at all angles and fired dismounted from the woods and walls, and succeeded in counterbalancing the lightning attacks and high-speed maneuvers of the motorized division.

There was no doubt that the hit-and-run tactics of the highly mobile provisional Regular division was very demoralizing to the communications and supply of the larger, slower divisions. But when contact was actually made and maintained, the machine guns and fire power of the infantry and field artillery came into their own, tanks and armored cars were disabled and outflanked, and the force with the greater numbers won. This poses the old problem: Which is better, a small, fast man, or a slow, heavy man? And the answer depends always upon whether the contest is running or wrestling.

Both of the Coast Artillery (antiaircraft) regiments had a fixed mission during the maneuvers, that of the protection of the railheads. The 213th was at Manassas, and the 216th at Gainesville. The shortage of equipment placed strict limitations on the employment and function-



*The .30-caliber machine gun did its bit in warding off the attack of low-flying aircraft.*

ing of these two regiments. There were but three 3-inch guns and one director per regiment, and there were not enough prime movers for that equipment. The 260th had but four portable searchlights with no sound locators, and the 213th had only two mobile lights with one locator. Machine-gun batteries had but four .30-caliber guns, and gun batteries had no machine guns. Because of this shortage of guns and transportation the mission of the regiments was not changed during the maneuver. However, the regiments functioned to their capacity, and within the rules and regulations of the umpires.

In the first week of training the 213th and 260th combined for night firing against the fifteen planes (observation, attack, and bombing) of the 103d Observation Squadron. The planes illuminated the gun positions with flares; the guns, aided by the searchlights, fired many a dummy round at the planes. One of the searchlights distinguished itself by picking up a plane instantly without any searching or hunting.

The 260th Coast Artillery (AA) was well out at the right flank of the Blues, in a network of roads running in all directions, even down into the country of the Blacks. Gun batteries were sited at the vertices of a 6,000-yard triangle; with the primary mission of repelling bombing and observation planes. They had also the secondary mission of placing interdiction fire on the passes through the Bull Run Mountains, on the bridges over Broad and Cedar Runs, and on long stretches of roads over which the Blacks would advance if a wide circling movement was attempted. All batteries bivouacked in wooded areas, all gun positions were camouflaged, positions were frequently changed, and dummy guns left in old positions. The high point of the maneuvers for one of the batteries was when a bombing plane flew over one day and bombed their dummy.

On Sunday night before the opening of hostilities the regimental commander gave his orders at 9:30 P.M. for the change of position. At 11:00 P.M. Battery D reported in position; at 11:20 Battery C was in position; and at

2:10 A.M. Battery B was in position, after a second trip of one of the prime movers. At 6:30 all of the antiaircraft batteries were camouflaged, had fired their first rounds, and were placed on a 24-hour alert basis. On this day the umpires allowed the 260th nine planes, the regiment having fired a theoretical 2,460 rounds of 3-inch, and 42,000 rounds of machine-gun ammunition. Two of the batteries were camouflaged by placing them under the pyramidal tents that had been occupied during the previous week; it being assumed that the Black observation planes would think the Coast Artillerymen were too dumb to know that a theoretical war was in progress along the streams to the southeast. Suffice it to say that the photographing planes got no good pictures of the emplacements until 11:00 A.M.—the last day of the war. This was the exact time of the armistice and the cessation of hostilities.

The 29th Division protected its right flank with the 116th Virginia Infantry and a battalion of the 111th Field Artillery. In addition the 121st Engineers mined all the bridges in the area for demolition, maintained road blocks, and operated outposts against the swift-moving armored cars and tanks. This did not seem protection enough for the various components of the 260th, spread as they were in about twenty-five different positions over an area of fifteen square miles. The commanding officer therefore gave each gun battery one machine gun for protection and had the various machine guns sited along roads, in fence corners, and on knolls so that they would sweep the circling roads and act as antitank guns. This was fine tactics for local defense until the umpires announced that .30-caliber guns were .50-caliber guns, and not .30-caliber, and as such could not be used for antitank defense. In addition "the machine guns of the regiment must be so disposed as to provide a coordinated all around defense of the GAINESVILLE RAILHEAD against attack avi-



*Lieutenant General Hugh A. Drum, army commander (left) surveys the maneuver map with Major General James K. Parsons, corps area commander.*



*The foreign military attaches showed keen interest in the progress of the maneuvers.*

ation, and will be mutually supporting with maximum distances between platoons of 1,500 yards." Again the regiment was hindered by the lack of equipment, although not by a lack of imagination; why couldn't we assume or simulate a few machine guns and searchlights in a theoretical war? In spite of this limitation, one of the batteries brought in two prisoners and a motorcycle on the first day of the war, unshaven and unsung fugitives from an armored car squadron.

The communication system of the 260th functioned extremely well during the maneuvers. The regiment laid about 158 miles of wire. The searchlight battery had sixty-miles of wire out to the various platoon and observation posts, for although there were only four lights the positions were changed nightly and the outer advanced positions were manned as observation posts.

In moving into a new position there is an extremely heavy load upon the searchlight battery, the service battery and the headquarters battery during the first few days. Some of this could be obviated by having short wave radio sets for communication to the outer searchlights and the advanced observation posts, and by having the various batteries do much of their own hauling during the initial phases. Probably with the 154 vehicles allowed by the

table of organization for an antiaircraft regiment in peacetime the 260th would have got along much better than with the forty-nine vehicles actually present. Particularly missed were the 7½-ton 6 x 6 prime movers, only two of which were on hand instead of the twelve allotted. With the increase of guns to twelve, and of machine guns to sixty the presence of prime movers will be a prime necessity.

The 260th was not the only organization at the maneuvers whose equipment was deficient. Throughout the area very little modern equipment was noted. The guns of the antiaircraft regiments were old; the guns and mounts of the field artillery regiments were the old type hybrid 75's; there were practically no antitank guns, either .50-caliber or 37-mm.; there were no new automatic rifles; there was such a deficiency in aircraft that all planes were regarded as hostile so that the antiaircraft would get a chance to fire at something.

Even with our claim of producing automobiles and trucks in the greatest numbers and in the best quality, there was lack of transportation for the motorized troops. Troop movements had to be on by shuttle system, so that the available trucks made several trips. In the battery officers' critique after "Cease Firing" had been given, the

chief complaint was: "Why can't headquarters leave our assigned trucks alone? Why do we have to furnish transportation for everybody else in the maneuver?"

In spite of these criticisms, the most striking part of the maneuver was the mobilization on Saturday, August 5th, and the demobilization on Saturday, August 19. With well planned march tables 1,700 trucks in sixty-six convoys of from four to forty trucks each poured into the maneuver area, unloaded their equipment and personnel, and the training period commenced.

In spite of the large number of recruits in the National Guard regiments, the battery organization and training progressed at normal speed. The individual soldier, with his American adaptability, soon learned to sleep in wall- or pup-tents, to eat out of a mess-kit, and to obey orders. Discipline has never been as strict in the Guard as the Regular Army instructors would like to have it; there remains always a rugged individualism which cannot and should not be curbed. For example, camouflage discipline was difficult to maintain because the soldier could not understand why he should not read his Sunday paper, remove his khaki shirt, take the same path to the latrine, or remain stationary when planes were overhead, particularly in a war which was purely theoretical, and in which the planes were probably friendly anyway. It evidently takes a few live shells to convince the American private of the need for camouflage discipline.

During the maneuver all types of communications were tested: commercial and service telephones, teletype, telegraph, short and medium wave radio, fast motorcycles, foot messengers, and even homing pigeons. Code was used in calling various regiments and stations; conversations were usually carried on without using the proper names of organizations. The communications seemed to work quite well, although they could have worked better. Although flash messages cluttered up the lines of regimental and battalion headquarters, when an airplane was headed toward a certain battery it usually was seen by the local spotters and fire had been opened before the message got through.

The need for pure water in large quantities was soon evident in the Manassas-Gainesville area. Advanced detachments of the engineers dug eleven wells, the water being tested and pumped to gravity tanks. As no limitation was placed on water, the consumption was about 800,000 gallons per day, or forty gallons per man, this of course being excessive for a simulated war. Among the new equipment was noted a mobile purification and filtration unit from the Engineer School at Fort Belvoir. This took the muddy water of Little Bull Run, filtered and chlorinated it, and pumped it out at 110 gallons per minute. Large stainless steel and porcelain-lined tank trucks of capacities up to 3,000 gallons were supplied from this unit and its 3,000-gallon portable water-tower.

At the beginning of the training, in spite of the fact that the maneuver had been planned for months, there was a shortage of good maps. The 121st Engineers brought down a 3-ton multilith machine from Washington, set it

up at Gainesville, and started turning out 17 x 19 inch maps at a rate of 4,000 per hour. Soon even the captains had a map apiece.

The health and safety record of the troops on this training and maneuver period probably never has been equalled. In spite of the fact that 21,000 men were moved in trucks; that hundreds of trucks, tanks, and motorcycles were chasing over narrow, dusty, back roads; that new problems of messing, water supply and sanitation had to be met; there were very few severe accidents or sicknesses, and no fatalities. Part of the credit for this goes to the military police, part to the medical organizations, and part to the increased education of the American in the problems of personal sanitation.

A number of problems could not be or were not solved during this Fourth Battle of Bull Run. No gas was used and no gas masks were issued; there was no actual contact between the opposing sides, and hence no bayonet work or personal combat. Prisoners were taken, but were immediately returned after being fed and kidded about their plight. There were no grand charges of infantry and cavalry; there was no far-flung antiaircraft intelligence service; units remained at their starting strength; there were no killed, wounded and missing.

One of the greatest limitations was the lack of leases to land owing to growing crops. Several times the claims agents stopped hostilities so that the combatants could be returned to the limits of the "playing field." The Bill of Rights guarantees the American farmer the right to deny the army the use of land, even for maneuvers essential to the development of the national security. Although 75,000 acres were leased many a desirable plot was withheld because the farmers remembered the missing chickens of the Battle of 1903. Many of the Regular Army umpires complained that the war games were so well planned and so restricted as to territory that they took little account of the situations that momentarily developed.

However, there were a number of conclusions reached. The main mission was the intensive training of large groups of soldiers. The battalions seemed to be well trained in their tactical duties, and their smaller staffs seemed to function well. This could not be said for the larger staffs, which bogged down, particularly after darkness, fog and bad weather had grounded the observation planes. Because of the high speed division opposing the Blues, information was often stale and useless before it could be used, and the time factor to get orders to the lower echelons and to execute orders, was longer than the situation allowed.

Motorization allows a greater freedom and a wider front to the offense, and limits the defense. The defense must have some means of local protection with power weapons for all command posts, particularly for the lines of supply and communication on the flanks and in the rear. This was seen in the 260th Coast Artillery when part of the few available machine guns had to be used for

local ground defense, a mission which the anti-aircraft should not have to accomplish. Distant searchlights and outlying guns must be given protection, and not have to supply their own. This is a problem of organization.

The American Army should take a lesson from foreign powers and have more large scale maneuvers. Few of our officers see in peacetime anything larger than a battalion in action, certainly few have seen a division working as a unit since the World War. There is a lack of trained coordinated staffs for the larger organizations, partly due to a large personnel turnover, and partly due to the lack of training. Map problems are not enough—the time factors for the execution of orders, the accuracy of information, and the problems of terrain and movement, are vastly different in practice than on a map. We must have better trained and more permanent staffs in the divisions and the armies.

Eight hundred and seventy-three Reserve officers were attached to the participating units for the period of the maneuvers. Some of these were given commands, many

were attached to staffs, and all secured a different type of training. Teamwork was developed between the three components of the Army, and members of all components respected the others after "two weeks of intimate daily contact."

The senior officer, Lieutenant General Hugh A. Drum, summed up the results most succinctly: "These maneuvers were the best tactical exercises in which American troops have ever engaged in peacetime. However they proved that the Army needs more men, more officers, more equipment and more training."

At 11:30 A.M. on August 17th the umpires waved the white flags that signalled the end of hostilities and green-banded claims agents of the Judge Advocate went forth to appease the farmers who claimed broken fences and scared cows. The yellow-banded correspondents filed their last dispatches, and 16,000 National Guardsmen and attached two-week soldiers returned to their homes, hoping that they had helped prove something of benefit to the American Army and the American people.



#### NEW GERMAN CRUISER

*This is the 10,000-ton Admiral Hipper recently commissioned. The main battery contains eight 8-inch guns; the secondary armament has twelve 4.1-inch rifles. Twelve AA guns and twelve torpedo tubes complete the cruiser's armament.*



The army's first mine planter, the steam tug *General Alexander*, which first went into action in 1906.

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# History of Army Mine Planters

By Warrant Officer Henry L. Jones

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The new streamlined Diesel electric mine planter *Ellery W. Niles*, which arrived for station in the harbor defenses of San Francisco in the summer of 1938, is a far cry from the old steam tug *General Alexander* which was the first vessel used for mine planting in San Francisco harbor.

The *General Alexander* was turned over to the Quartermaster Corps by the Corps of Engineers in 1906 and was assigned to duty in the harbor defenses of San Francisco as a Quartermaster tug. As there was no mine planter

stationed at San Francisco at that time, she was requisitioned by the Coast Artillery Corps for training the mine companies stationed at the Presidio of San Francisco, which was then a Coast Artillery post.

The *Alexander* was a small vessel, approximately ninety feet long and eighteen feet in beam. She had very lofty masts and a high deckhouse which made her extremely tender with a moderate deck load. Her tenderness, together with her small main deck, limited the number of mines that could be put aboard. It was possible to load seven No. 32 mine cases, anchors, and so on, by leaving part of the crew ashore and hoisting the skipper into the pilot house with a crane.

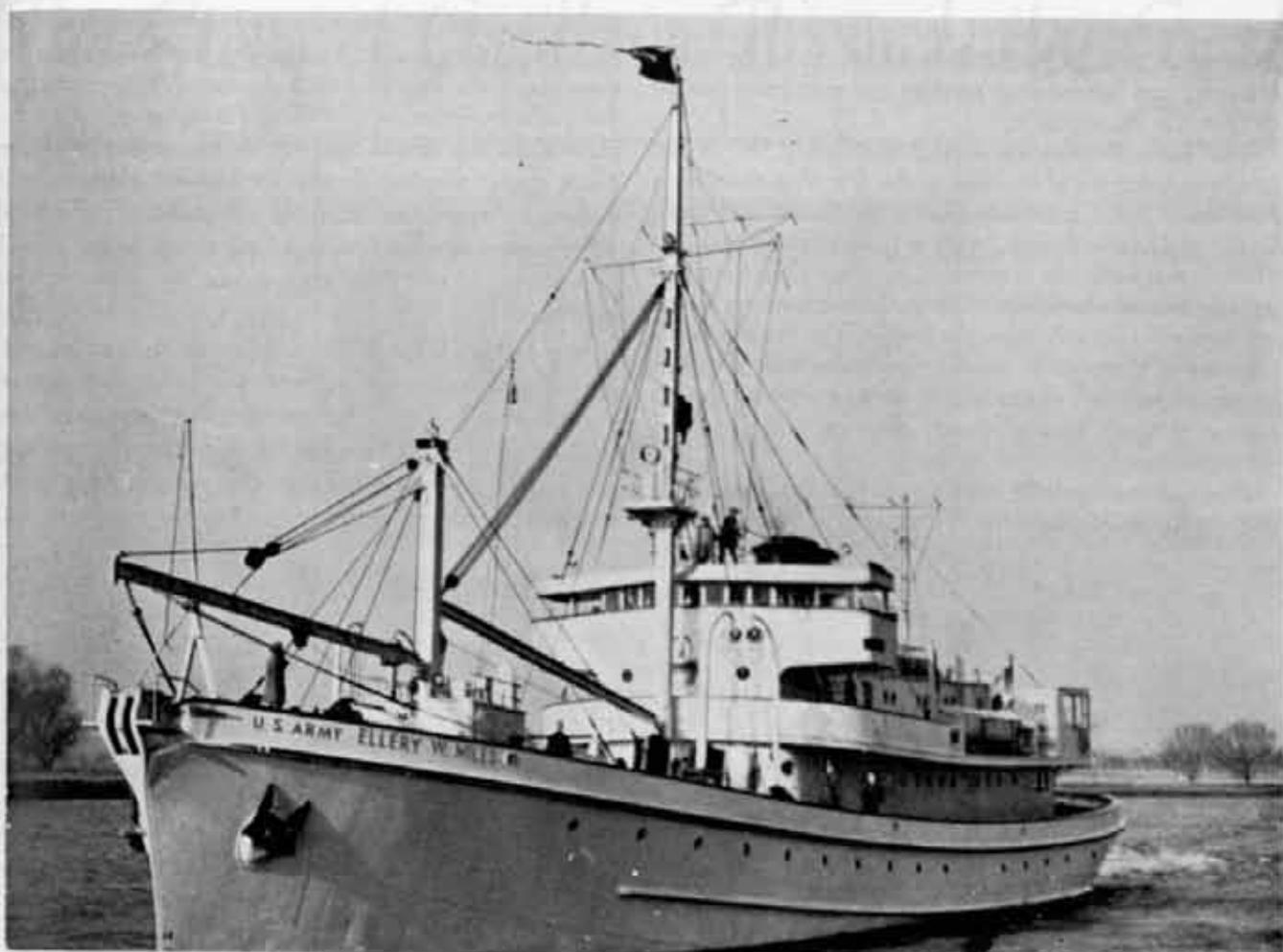
Mine planting was a fearsome undertaking with the *Alexander* and to be assayed only after the mine planting detachment had been diligently trained in dodging flying articles and stepping nimbly out of the bights of the single conductor cable.

She had no mine planting equipment such as mine and anchor davits, cable jacks, catheads, etc. Ways and means of getting the mine and anchor overboard somewhere in the vicinity of the position was no small problem. One mine commander solved it by constructing two wooden platforms about four feet wide and twelve feet long. These platforms were placed across the bulwarks with about four feet projecting over the side. A number of men were stationed at the inboard end to steady the platform while another group loaded the mine and anchor on the outboard end. When the vessel arrived in the planting position the planting officer gave the command "let go," at the same time offering a silent prayer that part of the planting detail would not follow the mine overboard. The men stationed at the planks raised them smartly, and mine and anchor slid overboard.

In 1908 the junior mine planter *Captain Gregory Barrett* was built. It replaced the *General Alexander*. While primarily designed for the harbor boat service, this vessel was also equipped to function as a junior mine planter, that is she was fitted with mine and anchor davits, catheads, and so on. Mine planting from the *Barrett* was a much less arduous and considerably more efficient proceeding; although she shared the disadvantages of the *Alexander* of not having enough deck space to load a complete group of mines. She was a single screw vessel, which made her difficult to maneuver in the mine field.

Submarine mining received a new impetus in 1909. At that time four 165-foot twin screw, steam-powered mine planters, the *General Schofield*, *Ord*, *Frank*, and *Mills* were built for the Coast Artillery Corps. These vessels were assigned to stations on the East Coast. However, when they were commissioned, two somewhat smaller mine planters, the *Ringold* and *Armistead* which had previously been stationed in the East were assigned to stations on the West Coast.

The *Armistead* and *Ringold* arrived in San Francisco from New York in 1910, after a 15,000 mile voyage via the Straits of Magellan. The *Armistead* took station in the harbor defenses of San Francisco and the *Ringold* in the harbor defenses of Puget Sound. The *Armistead's* principal advantages over the *Barrett* were her increased



*The last word in mine planters, the streamlined Ellery W. Niles.*

deck space and greater stability owing to her greater size. Her twin screws made her much easier to handle in the mine field. The capacity of her hoisting apparatus also made multiple-cable laying a much less laborious job. It was now possible for the first time to plant a complete group of mines in one operation in the harbor defenses of San Francisco.

In 1918 came a change in the personnel that manned army mine planters. Formerly, deck and engineer officers were licensed civilian ships' officers and both deck and engine room crews were civilian employees. The commanding officer, a Coast Artillery officer, was assigned from the harbor defense in which the mine planter was stationed, and the planting section consisted of soldiers of the Coast Artillery Corps.

This mixture of army and civilian personnel working in the close proximity necessary aboard ship caused endless friction, especially among the deck and engineer officers. These men who had come from the merchant service, without military training, were in many instances unable to adjust themselves to the routine and discipline of the military service.

To remedy the condition, the grade of warrant officer, Army Mine Planter Service, was created in July, 1918 and the deck and engineer officers were given this rank. Al-

though they were designated warrant officers, Army Mine Planter Service, they were divided into five grades: master, chief engineer, first mate, assistant engineer and second mate.

At Fort Montoe, a school was established under the direction of Captain Henry F. Grimm, Coast Artillery Corps, a graduate of the United States Naval Academy, to train candidates for the warrant officer grade, in navigation, seamanship and marine engineering.

In 1920, nine new 172-foot twin-screw steam-powered mine planters were built and the number of ships in the service increased to twenty. But this increase was short-lived for in the subsequent reduction of the army in 1921 the number was reduced to seven mine planters and one cable ship. Only three of the new ships were retained in the service, the *Bell*, *Baird* and *Harrison*. The remainder, with the exception of the *Frank* which is now stationed in Hawaii as an inter-island transport, were turned over to the U. S. Coast Guard and the Lighthouse Service.

Coincident with the reduction of the service, the navigation school at Fort Monroe was discontinued. To fill vacancies in the deck and engine departments after the supply of graduates of the school was exhausted regulations were issued permitting enlisted men of the Coast Artillery Corps to take competitive examinations for as-

sistant engineer and second mate. This regulation was changed in 1936 to permit licensed officers of the army transport and harbor boat services and merchant marine to take the examination.

The latest ship in the service the *Ellery W. Niles*, which replaced the *Armistead*, is the first ship of its kind ever built. She is a combination mine planter and cable layer; 185 feet in length, with a 35-foot beam, and displaces 1,200 tons. She is powered by three Diesel engines driving two 560-horsepower direct-current motors, which are controlled directly from the bridge. The instantaneous response of the engines together with the wide range of speeds offered by direct-current motors enables her to maneuver much more efficiently than the older types of mine planters.

Another outstanding improvement is the loudspeaking system installed on the *Niles*. This consists of a 17-

station two-way communication system with selector located in the pilot house. It makes communication possible throughout the ship and for a distance of approximately 700 yards from the ship. With this equipment, the planting officer can maintain two-way communication with the entire mine planting flotilla throughout planting and picking-up operations. Ex-mine commanders, who have all at some time nearly burst a lung trying to get a yawl boat alongside will readily appreciate the worth of this innovation.

In many ways the *Niles*, with its multiplicity of gadgets, is as great an improvement over the *Armistead* type as these were over the old *Alexander*. But those older ones still remain in the service and are still efficiently planting and picking up mines and doubtless will continue to do so for some years to come.

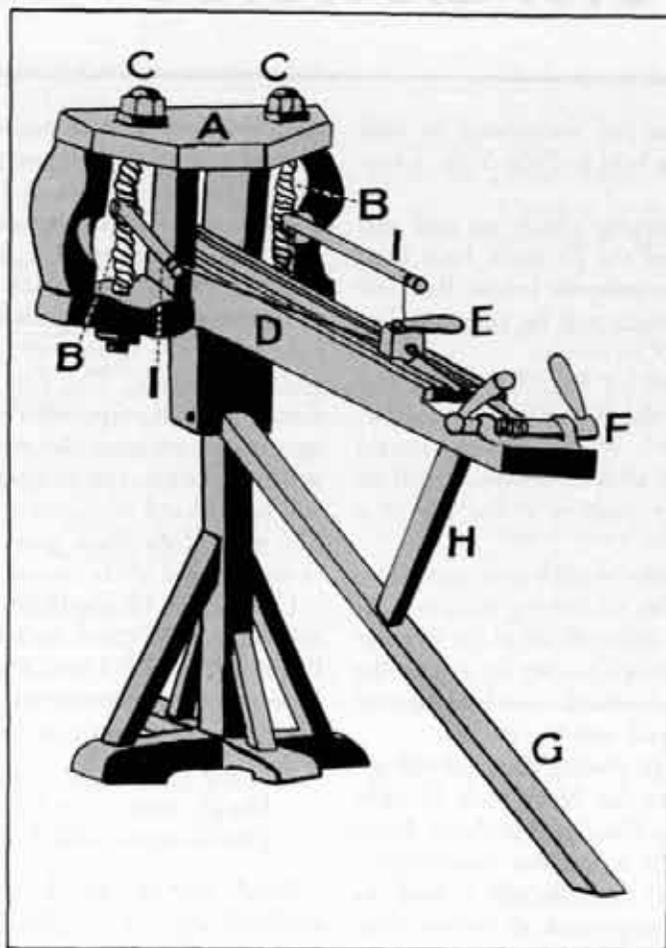


*One of the new Turkish anti-aircraft guns mounted for the defense of Istanbul.*

# The Story of Artillery Through the Ages

## Chapter 4: THE ROMAN CATAPULT

By W. A. WINDAS



The early artillery of Rome was less perfect than that of Greek armies, but in time the artillery of the legion reached a high state of efficiency. The Romans separated their weapons into three groups: arrow-throwers, light stone-throwers, and heavy stone-throwers.

The arrow-thrower, or catapult, is pictured. It accompanied Caesar in his campaigns against the savage tribes of Gaul and Germany.

The frame A consisted of two horizontal blocks with four mortised uprights. The outer two openings contained tightly twisted rope-skeins BB which gave propelling power. This catapult is of the torsion type. The skeins are held and adjusted by the large lock-nuts CC at top and bottom of the frame. The trough D through the center opening of the frame, is attached by a hinge at that point. The trough holds a trigger-block and trigger E. A strong cord is attached to the rear of the trigger-block, from which point it goes to and around the reel F at the rear of the trough. The pedestal mount is fitted with a pivot, which carries the frame. From the rear of the mount extends a trail G. The prop H is hinged to the under side of the trough and rests on (but is not attached to) the trail. Two stiff arms (II) are thrust through the rope-skeins, the force exerted tends to keep them spread

their widest. The "bowstring" is fastened to the ends of these arms.

To lay the piece for direction, simply turn the frame on its pivot. In laying for elevation, the lower end of the prop is moved up or down the trail, thus raising or lowering the rear end of the trough, to which the prop is hinged. The piece was fired by engaging the bowstring in the trigger-block. Turning the reel-handles pulled back the block until it seated into the deep cut near the rear of the trough. (A small horizontal pin retained it.) The arrow was placed in the trough, with its notch engaged in the bowstring. Striking the trigger with a mallet released the bowstring from the trigger-block, and the arrow sped through the center of the frame.

The weight of the catapult was about 85-pounds. It could be easily handled and operated by two men.

The projectile it discharged was a 26-inch arrow, weighing one-half pound. At a range of 400-yards it was accurate and velocity enough to kill a man even though in armor.

Its handiness, light weight, range and power, made the catapult a formidable weapon to the rude Gallic tribesmen when they tried to withstand the legions.

# The Convention Program

The Convention Committee has announced its final plans for the Convention to be held in New York, October 12 to 15.

The high points of the meeting which we told you about in the preceding issue of the JOURNAL have been amplified and are shown in the program below. But, still further events are planned, which will be announced at various zero hours during the Convention.

The dinner-dance, scheduled for Saturday night, October 14, undoubtedly will be the largest and most colorful Coast Artillery party given in recent years and should long remain in the memory of all who attend. It will be held in the amply large club quarters at the top of a Park Avenue skyscraper.

Reservations already have been made by an exceptionally large number of officers who are coming from considerable distances. The great group of officers of the Regular Army, National Guard, and Reserve units located in the metropolitan area who have expressed their intention of attending insures a brilliant and striking event.

It looks very much as though visiting Coast Artillerymen will completely take over the New York World's Fair on the night of the 15th. That day has been designated Coast Artillery Day. At a spacious headquarters (open from morning to night) conveniently located on the Court of Peace, a complete service of information, maps, and guides will be maintained. Details of an informal luncheon will be available at an early hour, and those who are interested in joining that party may get directions by calling at Fair Headquarters in person or by telephone on the morning of the 15th.

New antiaircraft matériel will arrive at the Court of Peace early in the afternoon and will be displayed and demonstrated by National Guardsmen. At 4:30 P.M., following a Coast Artillery band concert, the public and our convention visitors will learn the details of the first blackout and air raid to be staged within New York City. This performance is scheduled to take place at the Fair just after nightfall. Addresses at this meeting will be given by distinguished guests including Major General Sunderland, Chief of Coast Artillery, and the Mayor of the City of New York, Honorable Fiorello H. LaGuardia. Immediately thereafter, the combined Army, Navy, and Marine detachments stationed at Camp Washington will parade in honor of the Association.

From then on, antiaircraft units of the National Guard and Regular Army are going to be busy getting equipment into positions in readiness for what promises to be a most spectacular show: the complete blackout of the Fair's brilliant illumination. The blackout will be preceded by air raid warning messages which will come by

telephone and radio to antiaircraft headquarters from an extensive net of civilian listening posts. The warning service will be established over a wide area and will cover all possible routes of the pursuit planes which will take off from Miller Field and the bombers who will come from Mitchel Field. These ships will head for the Fair with the mission of dropping illuminating flares over Fountain Lake before the antiaircraft forces can get their lights and guns into action. The Fair management is giving this show thorough cooperation and it should be of tremendous interest to even the most seasoned and hard-boiled antiaircraftsmen, not to speak of the general public who will be on hand in numbers up to a quarter of a million. The story of the show goes on the air through the mikes of one or more of the important broadcasters.

Convention Headquarters will be established and remain open at all times during the convention at the Hotel Piccadilly, just off Times Square at 227 West 45th Street. Here the most advantageous living arrangements may be made. The low rates extended to our members are:

|  |        |
|--|--------|
| Single room, with bath .....           | \$2.50 |
| Double room, with bath (double bed) .. | 4.00   |
| Double room, with bath (twin beds) ..  | 5.00   |

Meals will be served to wearers of Association convention badges at a comfortably reduced rate. The Hotel Pennsylvania has agreed to give a discount of 25% to our members from their standard rates of: single room with bath, \$3.50 to \$8.00 and double room with bath, \$5.00 to \$10.00.

Please note these special hotel arrangements, for other popular hotels may not have space available except on *reservations made well in advance*. The Hospitality Committee is organized to take care of all visitors, but the earlier you make your reservation—either direct with hotels or the committee—the easier will be the task for all concerned.

Transportation to Fort Totten from New York will be available Saturday morning, subject to reservations made by guests upon registering up to 7:00 P.M. Friday. The trains of the Long Island Railroad from the Pennsylvania Station that arrive at Bayside between 10:00 and 11:30 Saturday morning will be met by transportation from Fort Totten. Public buses run regularly from the Main Street Station, Flushing, of the BMT and IRT subways, direct to Fort Totten, at a fare of ten cents.

From the program you will see that the committee has left a goodly share of time open for your sight-seeing and pleasure. There is no doubt that the combined attractions of Fair and Convention will provide a very full and most outstanding week-end for all visitors. You are urged to reg-

ister at Convention Headquarters in the Hotel Piccadilly, or elsewhere as shown in the program, at the earliest moment in order to receive badges. These will serve as the countersign for all formations other than those for which tickets will be issued upon registration. There will be no registration fee and no charges for listed events except those indicated on the program below.

If you have not already returned the coupon sent you by mail, please do so at once. No Coast Artilleryman will regret attending the Convention.

Let's all go.

## PROGRAM

### U. S. COAST ARTILLERY ASSOCIATION CONVENTION

*October 12-15, 1939*

NEW YORK

*Convention Headquarters*—Hotel Piccadilly—227 West 45th St.—open continuously for the period of the Convention.

#### *Thursday—October 12—Columbus Day*

11:00 A.M. Registration at headquarters. Recording of to reservations. Issuance of badges and tickets.  
midnight Distribution of programs, maps, and data.  
No meetings. Time free for Fair visits.

#### *Friday—October 13*

5:00 P.M. Registration—244th Coast Artillery Armory, 125 West 14th Street.

5:30 P.M. Reception for visitors—244th Coast Artillery Armory. Greetings and welcome by:  
Colonel Charles S. Gleim, commanding 244th Coast Artillery and President, Manhattan Chapter U. S. Coast Artillery Association; and  
Brigadier General William Ottman, commanding Coast Artillery Brigade, New York National Guard.

Evening open for informal entertainment.

#### *Saturday—October 14*

10:00 A.M. Registration at Ft. Totten, Bayside, Long Island—Post Theatre.

10:30 A.M. Association Meeting, Fort Totten, Post Theatre. (Program to be supplied by National Secretary.)

1:00 P.M. Reception and luncheon—Fort Totten Officers' Club, under auspices of 62d Coast Artillery (Cost 50c).

2:30 P.M. Display of antiaircraft equipment, by 62d to Coast Artillery—Parade Ground, Fort Totten. Tour of post and old fortifications.

7:30 P.M. Reception to Major General A. H. Sunderland, Chief of Coast Artillery and President, U. S. Coast Artillery Association. Rooms of Building Trades Employers Association—25th floor, 2 Park Avenue, New York.

8:30 P.M. Dinner-dance, 25th Floor, 2 Park Avenue. Dancing begins at 10:30. (Charge, dinner and dance: \$2.50 per person.)

#### *Sunday—October 15*

#### *Coast Artillery Day—World's Fair*

10:30 A.M. Opening of Convention and antiaircraft headquarters at Fair, Court of Peace. Registration. Information service. Fair maps. Guides. Details of informal luncheon.

2:00 P.M. Arrival of 212th Coast Artillery at Court of Peace. New antiaircraft equipment to be set up for display and demonstration. To be followed by selection of positions for searchlights throughout Fair and for guns and machine guns around Fountain Lake.

4:00 P.M. Band Concert, Court of Peace, 62d Coast Artillery.

4:30 P.M. Address—Major General A. H. Sunderland. "Antiaircraft Defense."

Address—Mayor Fiorello H. LaGuardia.

"Civilian Cooperation with Antiaircraft Defense."

Speakers introduced by Colonel Avery J. Cooper.

5:00 P.M. Retreat Parade, Army, Navy, and Marine detachments, Court of Peace. In honor of Major General A. H. Sunderland.

5:30 P.M. Occupation of positions by antiaircraft units for blackout and firing, Fountain Lake.

8:00 P.M. Air raid alert, over loud-speaker system and broadcast, following receipt of warning messages from civilian listening posts throughout western Long Island and Borough of Richmond.

8:01 P.M. Blackout and air raid by bombers and pursuit ships equipped with illuminating flares. To be fired upon by guns and machine guns of antiaircraft units.

9:30 P.M. Departure of antiaircraft troops.



# Coast Artillery Board Notes

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

## THE COAST ARTILLERY BOARD

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*General.* Since the publication of the July-August issue of the COAST ARTILLERY JOURNAL, the Board has been engaged in studying all available 1939 target practice reports and comparing the results with those of 1936, 1937, and 1938. Data extracted were used in the preparation of Training Memorandum No. 1, Instructions for Coast Artillery Target Practice—1940. Numerous other subjects studied by the Board during the past two months, because of their secret or confidential nature, cannot be reported at this time.

NEW SCORING FORMULAE FOR ANTI-AIRCRAFT MACHINE GUN AND SEARCHLIGHT TARGET PRACTICES (PROJECT 1158). The Coast Artillery Board has for some time been engaged in a study of the feasibility of modifying the present scoring formulae for antiaircraft machine-gun and searchlight target practices in a manner similar to that recently done in the case of antiaircraft guns. The simplified formula for 3-inch antiaircraft guns was discussed at length in the March-April, 1939, issue of the COAST ARTILLERY JOURNAL. It has been in effect throughout the present target practice season and appears to be serving its purpose well. The new machine-gun and searchlight formulae, developed along similar lines, have recently been approved by the Chief of Coast Artillery and will, it is expected, be published to the service in Training Memorandum No. 1, Instructions for Coast Artillery Target Practice—1940. Important characteristics of these formulae are discussed below.

### *a. Formula for machine-gun target practices.*

(1) The new formula for both caliber .30 and caliber .50 machine-gun target practices is:

$$C = \left[ \frac{15 + S_g}{25} \right] \left[ \frac{\text{HGM}}{\text{H}'\text{G}'\text{M}'} \right] \text{ where } C \text{ is the score}$$

for each course,  $S_g$  the ground speed in miles per hour, and HGM the hits per gun per minute attained on the course.  $\text{H}'\text{G}'\text{M}'$  is taken from the curve, Figure 1, using average slant range as argument. This curve is a "normal expectancy curve," based on previous target

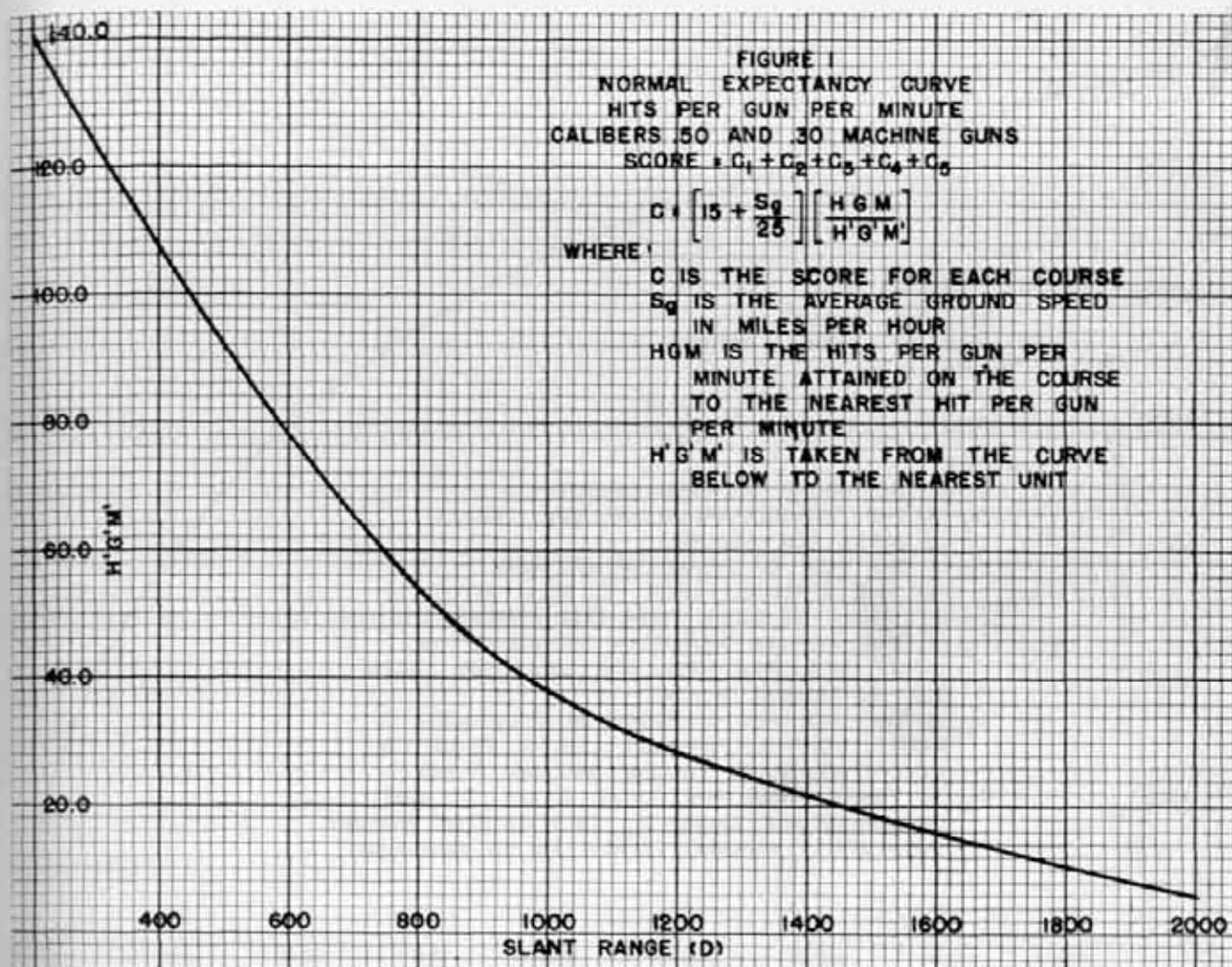
practices and on Coast Artillery Board firings.

(2) As in the case of the 3-inch gun formula, an important characteristic of the new machine-gun formula is that the primary index of the proficiency of a fire unit is the ratio of hits per gun per minute actually attained to the number of hits per gun per minute considered normal, or "par," for the particular slant range at which fire was conducted. This it is believed provides the simplest and yet most satisfactory means of judging relative performances of various fire units. A slight bonus has been added for higher-than-average target speeds.

(3) Unlike the gun formula, the machine-gun formula offers no inducement for firing at any particular slant range or altitude. In other words, the normal expectancy curve coincides with the scoring (par value) curve at all slant ranges. To insure thorough training at all normal ranges, Training Memorandum No. 1—1940, will, it is expected, prescribe certain range and altitude bands for certain courses of each practice. Since, with the advent of the intermediate caliber automatic cannon, the primary mission of the machine gun has become that of providing for the close-in defense of the area or installation defended, the majority of such courses will be limited to slant ranges of less than 1,000 yards.

(4) The same formula and the same scoring curve (Figure 1) will be used for both caliber .30 and caliber .50 machine guns. While there may be a considerable difference in the scores made with the two weapons, comparison of individual practices will be valid nevertheless. Furthermore, the scoring of both calibers on the same basis will permit of a comparison of these weapons not possible heretofore.

(5) The scoring curve, Figure 1, assumes a rate of fire of 600 rounds per gun per minute. It is recognized that by the use of special bolts, springs, or other non-standard equipment it is possible to attain a rate considerably in excess of this "normal" value, particularly in the case of the caliber .30 gun. Training Memorandum



dum No. 1—1940 will include a prohibition of this practice, since a higher rate attained by any such means obviously would give an unfair scoring advantage to the fire unit concerned. If and when a higher rate of fire is considered desirable, it is felt that the development of suitable matériel therefor should be a function of the Ordnance Department and not of the using service.

*b. Formula for searchlight target practice.*

(1) The new formula for searchlight practices is:

$$C = \left[ 20 + \frac{S_g}{20} + \frac{10}{\tau_p} \right] \left[ \frac{R_o - R_t + 12}{R_x} \right] \text{ where } C \text{ is}$$

the score for each course,  $S_g$  the ground speed in yards per second,  $\tau_p$  the pick-up time in seconds (but not less than one second),  $R_o$  and  $R_t$  horizontal ranges in thousands of yards from the objective to the pick-up point and the outer ring of lights, respectively.  $R_x$  is taken from the curve, Figure 2, using altitude at pick-up as an argument.

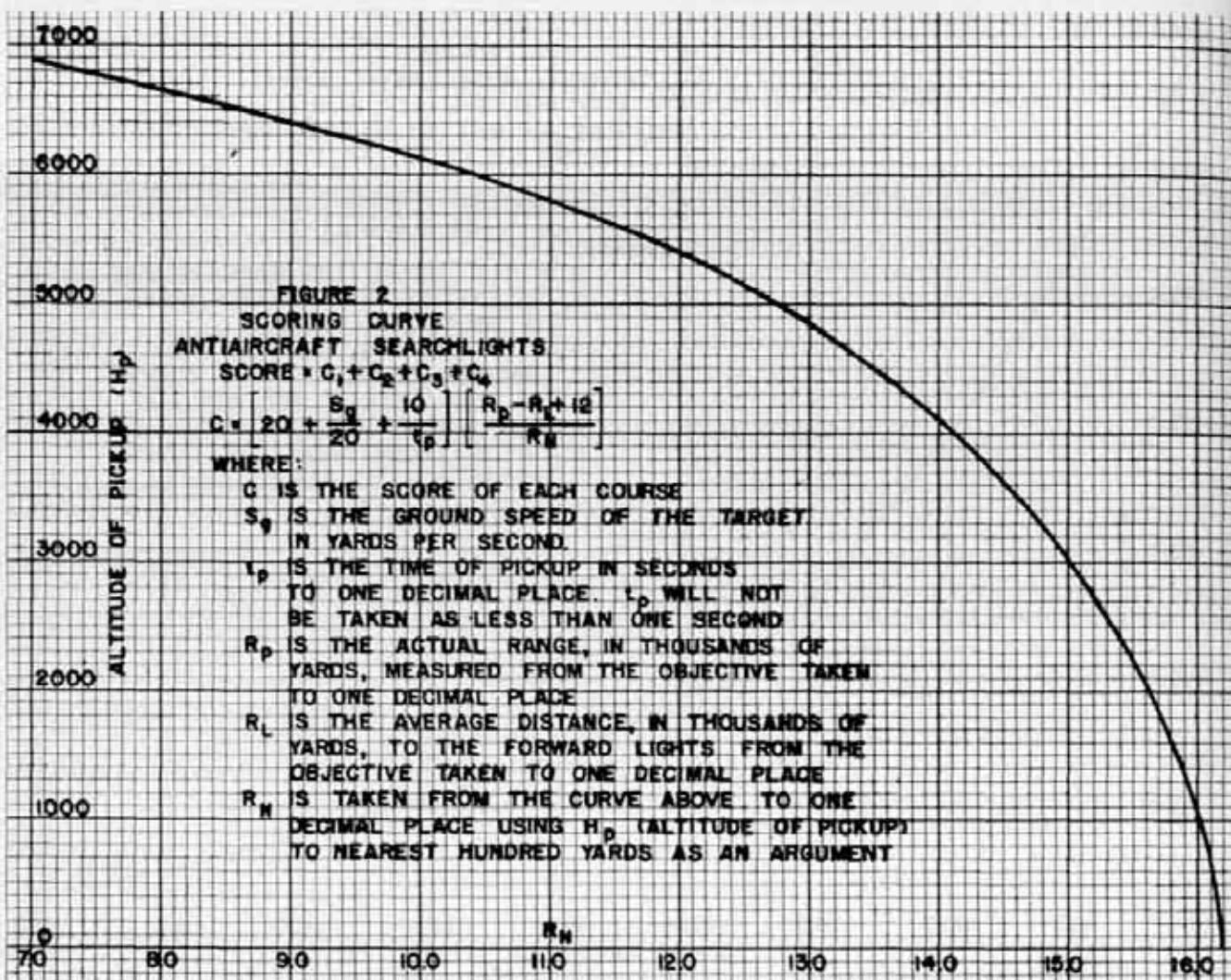
(2) In arriving at this formula the Coast Artillery Board concluded that the primary consideration in determining the effectiveness of a searchlight platoon was whether or not it picked up and illuminated the target early enough to permit gun batteries to take it

under fire at maximum range. A limiting curve is shown on Figure 3. This limiting curve shows, for various altitudes, the horizontal range from the objective at which pick-ups must be made if 3-inch antiaircraft guns, normally disposed, are to take the target under fire at or near maximum range. It will be noted that the horizontal range to the point where the pick-up must be made decreases as altitude increases.

(3) Experience has indicated that the difficulty in making quick pick-ups (and hence making pick-ups well forward of the outer ring of lights) increases considerably as altitude increases. To offset this difficulty and to encourage the use of high altitude targets a second curve has been drawn, successive abscissae of which have been decreased as altitude increases. This latter curve then becomes the scoring curve.

(4) Thus the primary index of performance on any one curve is the ratio of distance of actual pick-up beyond the outer ring of light to a normal, or "par," value of this distance as determined from past performances at a corresponding altitude.

(5) While the time of pick-up is not of primary importance as long as the target is illuminated at sufficient range to accommodate the guns, it should carry some



weight. The term  $10/t_p$  is included therefore to encourage quick pick-ups. Likewise the term  $S_g/20$  is included to encourage high target speeds.

(6) No carry component appears in the new formula. It is felt that the problem of carrying a target once it has been picked up should present no difficulties even to an indifferently trained organization and that, therefore, no credit should be given for this part of the course.

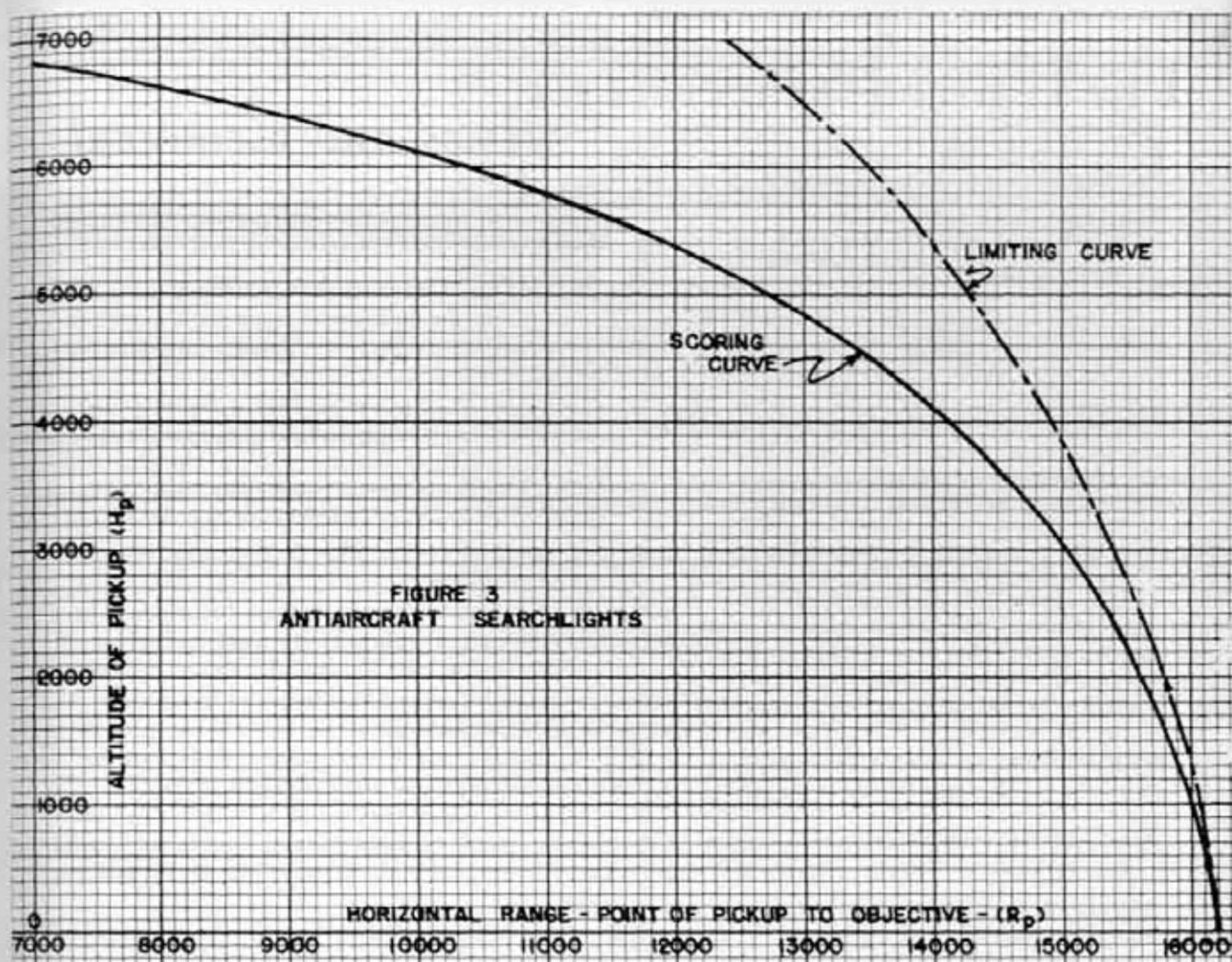
**VAPOR LOCK—ANTIAIRCRAFT PRIME MOVERS.** As a result of a number of reports from the using service concerning operational troubles experienced with 7½-ton Clydesdale prime movers for 3-inch antiaircraft guns, the Quartermaster General has been experimenting with various means for improving field performance of these vehicles. The chief difficulty appears to have been caused by vapor lock, which has frequently occurred in warm weather or under heavy load. In cool weather, when the vapor lock is not present, the operating personnel have found these trucks to have capabilities far beyond any previous equipment.

To remedy this condition various expedients have been tried with more or less success. Electric fuel pumps cured

the vapor lock but were of themselves subject to failure. Chrome plating of the gasoline lines, the use of baffles, the rerouting of the gasoline lines, and modification of the carburetors and fuel pumps all helped but did not cure the trouble at halts. Heat at the fuel pump was the underlying cause of the vapor lock and from the basic design of the engine the fuel pump could not be moved from the hot exhaust manifold side of the engine.

In June, 1939, the Hercules Engine Company developed a left-hand drive (cool side of engine) for the fuel pump and sent their engineer to Fort Monroe, Virginia, to install it on one of the Clydesdale trucks. The tests of this equipment were conducted by the Motor Transport Officer, Fort Monroe, and observed by members of the Coast Artillery Board. The new drive uses the conventional AC mechanical fuel pump by incorporating a cam on the shaft between the distributor and the air compressor. This shaft revolves 10 per cent faster than the conventional cam shaft and thus the added advantage of more pump strokes for a given engine speed is gained. The installation of this unit is very simple; it can be accomplished in the field by a mechanic with simple hand tools in about four hours.

On the recommendation of the Holabird Quartermaster



Depot and the AC fuel pump engineer, the fuel lines were simplified and rerouted. Under the new arrangement a line passes from the right-hand tank to a tee on the left-hand tank via a frame member. Another line leads from this tee on the outside of the frame to the fuel pump—a short piece of flexible line being incorporated therein adjacent to the fuel pump. This line is shielded from stones where it passes under the fender. Another line leads from the fuel pump across the top of the engine to the carburetor. All lines are as short as possible and are free from kinks. Generally speaking, the problem is one of keeping the pump and vacuum line as cool as possible.

The test given this equipment is briefly as follows: The truck was loaded with eight tons and a seven-ton trailer load was towed. The course selected for the towing was a sandy fill, the pull being such that the driver was rarely able to shift from first direct, in which gear the speed of the truck is about  $3\frac{1}{2}$  miles when the engine turns up

1,800 r.p.m. Due to soft ground, it was frequently necessary to winch the trailer out of the sand. The test was continued until the water temperature and oil viscosity stabilized. Then the vehicle was halted for from two to five minutes and the test resumed. These were the approximate conditions under which vapor lock troubles had been experienced.

Results of the tests were generally satisfactory. Without the new fuel pump and with gas lines in their original locations, vapor lock occurred frequently. After the new pump was installed and the gas lines rerouted no trouble was experienced from this cause.

A report of results thus far obtained has been forwarded to the Quartermaster General. It is expected that similar installations will be applied to selected prime movers (Clydesdale) assigned to various organizations so that performances of these modified vehicles under a variety of operating conditions may be carefully studied.

# The United States Coast Artillery Association



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

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## *The Coast Artillery Journal*

MAJOR AARON BRADSHAW, JR., Editor

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

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

## News and Comment

### German AA Artillery

Just before the outbreak of the current European War the antiaircraft artillery of Germany appeared to have been reorganized.

The antiaircraft was to be divided into two parts—mobile units to operate with the field army, and a combination of mobile and fixed portions to protect the zone of the interior. The designation "light" and "heavy" battalion was to be discontinued and all gun battalions were to have the same composition. Here is a tentative outline of the new organization.

Each regiment consists of three battalions. The regularly constituted regiments are numbered from 1 to 69 and the battalions are indicated by Roman numerals. Battalions I and II are gun battalions and III is the searchlight-sound locator battalion.

Battalions I and II each consist of six batteries: three heavy, two light and one searchlight battery.

The three heavy batteries each contain three platoons: two heavy and one light platoon. Each heavy platoon has two 8.8-cm. guns and each light platoon has two 2.0-cm. guns.

The two light batteries have five platoons each: four gun platoons of three 2.0-cm. guns each and one searchlight (60-cm.) platoon of four searchlights.

The searchlight battery consists of five platoons: three platoons each having three 150-cm. searchlights and two platoons each having three sound locators.

The III (searchlight) Battalion consists of three batteries. Each battery has six platoons: three searchlight platoons each with three 150-cm. searchlights and three sound locator platoons each having three sound locators. All of the 3.7-cm. guns which formerly were used in the light antiaircraft battery, are to be used by the separately constituted regiments numbered from 70 to 99 and these are to be stationed at several points in Germany for defense of the zone of the interior. These regiments now have one gun battalion only.

The total number of guns of these battalions are to be the same as the mobile units but the ratio of lights to heavies is not known. The fortification regiments (one battalion each, only) are organized in the same manner as the permanent separate regiments.

### *Type and Characteristics of Equipment:*

The heavy antiaircraft weapon is the 8.8-cm. gun with a range up to 9,000 meters and vertical range up to 5,000 meters. The maximum pitch of the tube is 85°. The tube is nearly five meters long and the projectile has an

(Please turn to page 468)



## JOHN W. GULICK: 1874-1939

Our country on August 18 lost a distinguished soldier with the passing of Major General John W. Gulick, former Chief of Coast Artillery.

The career of General Gulick spanned the lives of a generation of present day members of our Corps. For years he was intimately connected with the problems of the National Defense. His wise counsel and ability contributed much to the building of an adequate Army. He strove for a modern Coast Artillery Corps. It is not too much to say that our arm will bear the impress of his mind and spirit for years to come.

One of the many achievements of General Gulick was founding the United States Coast Artillery Association in January, 1931. He served as its first President and always gave freely of his time—even to the detriment of his personal affairs—to further its progress. That our association is in such a strong position today is chiefly due to his energy and constant participation in its affairs.

From the time he entered the service as a lieutenant of the 1st North Carolina Infantry in May of '98 until his retirement in November last he worked tirelessly and effectively for the Army he loved so well.

We who were privileged to serve with him knew him as a sympathetic, understanding and able soldier, with a rare combination of tolerance and ability to get things done. It was a rare privilege indeed to have served with him and to have known John W. Gulick.

## News and Comment

(Continued from page 466)

initial velocity of 820 meters per second. The maximum rate of fire is twenty-five rounds per minute. The 8.8-cm. gun weighs eight tons. The rapid fire 2.0-cm. and the 3.7-cm. guns weigh approximately 1500 pounds and have a rate of fire up to 200 rounds per minute and a range of 3,000 meters.

Two types of searchlights are used, the 60-cm. and the 150-cm. The 60-cm. searchlight is 150 million candle-power and the 150-cm. is over one billion candle-power and is said to have a range of 13,000 meters. The antiaircraft is completely motorized. A heavy battery has twenty-three main vehicles and the light battery thirty-five, while the searchlight battery has forty-two vehicles. These numbers are exclusive of trailers and motorcycles. All cannoners are armed with a rifle and are trained in its use.

### Imperial Defense College

The Imperial Defense College of Great Britain, which corresponds roughly to our Army War College, has a capacity of thirty-six students, but in practice has never filled more than thirty-two vacancies owing to the limits of size of the building housing the college.

The allotment of students is as follows:

|                       |                                     |
|-----------------------|-------------------------------------|
| Navy .....            | 6 captains                          |
| Army .....            | 6 lieutenant colonels or colonels   |
| Royal Air Force ....  | 6 wing commanders or group captains |
| Territorials .....    | 1                                   |
| Home Civil Service .. | 6                                   |
| Indian Army .....     | 3                                   |
| Australia .....       | 2                                   |
| Canada .....          | 2                                   |
| South Africa .....    | 2                                   |
| New Zealand .....     | 2                                   |

The official announcement of the Imperial Defense College gives its main function as "The training of a body of officers and civilian officials in the broadest aspects of Imperial strategy." Broadly speaking, the course offered comprises the following:

(1) Studies of the higher direction of war, strategic and administrative.

(2) Study of organization of the fighting forces, civil home defense, and of the influence of politics on the conduct of war.

(3) Study of the economic, social, industrial, and financial resources of the nation.

(4) Study of questions of foreign policy and relations with foreign powers.

(5) Visits to important naval, military and air establishments, the Port of London, and railroad and industrial centers.

It is interesting to note that the Government of Great Britain deems it necessary that civilian officials get practical

knowledge of the higher conduct of war. The representatives of the Home Civil Service detailed to the one-year course come from any of the ministries—the Ministry of Health, Ministry of Labour, the Admiralty, and so on. A former commandant of the College, Air Marshal Sir Arthur Longmore, KCB, DSO, has said in this connection that the training of civil officials in the school "is very valuable, not only to the Imperial Defense College, but to the officers themselves. Officers at the College want to get the outlook of the Civil Servant on all our problems, and they can give them something in return of the Service outlook. You will find that many of the Civil Servants who have been trained at the Imperial Defense College are now in very responsible positions at their own Ministries where they are coming up against defense problems all the time—sometimes active defense, sometimes passive defense. Nearly all of them are used in some such very useful capacity afterwards."

### Employment of AA Artillery Against Ground Objectives

(Digest from an article by General Rudel in the *Volksischer Beobachter*, 22 July, 1939, and *La France Militaire*, 10 August, 1939.)

Antiaircraft defense opposes an invincible rampart of diverse obstacles to enemy aerial attack from whatever direction it may come. But in the frame of an antiaircraft defense organization, antiaircraft artillery has the chief rôle. This statement is confirmed by experience in Spain. Compared to the aviation elements, artillery was the principal force of the Condor Legion. An antiaircraft artillery group, with five heavy batteries (88-mm.) and two light batteries (20-mm. and 37-mm.) and a light antiaircraft column were included in the troops of the Condor Legion. The antiaircraft troops in the ranks from 1936 to 1939 included 128 officers and 4,717 men.

In Spain the antiaircraft artillery was used in extremely difficult geographical and climatic conditions but was able, nevertheless, to prove its fighting efficiency.

The first battery debarked was used at Seville and Madrid against Red aerial attacks. This organization was so successful that thereafter the Red aviators kept out of the radius of action of the Condor Legion batteries. On the occasions that Red aviation obtained a temporary air superiority, German antiaircraft artillery caused severe losses, and amply proved its effectiveness in the domains of matériel, training, and combat.

The motors of the artillery met all the exigencies of the situation. Long marches beyond all expectance were made successfully. Even at Bilbao and Teruel, in spite of serious difficulties due to terrain and low temperatures, the artillery was always in place and ready to work.

At Bilbao a new and unexpected problem was presented to the antiaircraft artillery. The Spanish Corps with which the Condor Legion was operating lacked artillery to prepare the attacks against the heights and fortified mountain positions. Therefore the aviation and the

antiaircraft artillery of the Condor Legion replaced the light and heavy artillery that was lacking. This is certainly not the rôle of this artillery, but it was available for this purpose since no Red aviation was seen.

The employment of antiaircraft artillery against terrestrial objectives caused no difficulty for the personnel knew its arm well. It was successful against both distant and close objectives, against Red artillery and against Red tanks. *Because of its fire-power, one heavy antiaircraft battery was able to replace from three to six normal batteries of field artillery.* The moral effect produced by the antiaircraft batteries was particularly great because of the surprise when the fire reached the enemy. The approach of projectiles was imperceptible owing to their high muzzle velocity.

The enemy were never able to hold against the fire of the antiaircraft batteries, although they fought bravely. As for the light batteries, they were used with success against machine-gun nests, tanks, and the loopholes of shelters. The decisive success of the antiaircraft artillery against terrestrial objectives at Bilbao resulted in subsequently giving it preference in this employment. It fought with almost all the Spanish brigades at Madrid, Jarama, Brunete, Belchite, Teruel, and Lerida. It supported the Moroccan and the Navarrese Corps in this manner in Catalonia.

Thanks to this performance and success in battle, General Rudel concludes that German antiaircraft artillery has shown its worth in Spain, has proved the high quality of German matériel, and has demonstrated its excellent instruction as well as the high spirit of its serving personnel.

### R.O.T.C. Machine Gun Firings

*By Captain John E. Reierson, C.A.C.*

Students from Virginia Polytechnic Institute, Massachusetts Institute of Technology and the University of New Hampshire, Pittsburgh and Maine attained outstanding results in their machine-gun firings during the 1939 camp period at Fort Monroe. These students accomplished more in less time with machine guns than any untrained group of men that I have ever observed.

The only preparations for the firings were about twenty minutes' drill and two and one-half hours of preliminary firings on sleeve targets. No ammunition was expended on balloons.

The conditions under which the firings were held were far from ideal. The guns had to be so located that the center of the field of fire was never safe which necessitated firing from unfavorable sectors. All courses were divided owing to interference from fishing boats, other shipping and airplanes. Slant ranges averaged approximately 1,100 yards. Ranges for the various courses were varied. The speed of the plane varied from 110 to 150 miles per hour. During the firings in the mornings the sun was directly in line with the guns and this made spotting difficult as few of the tracers could be seen.

The results attained in the record practices are tabulated below:

| Organization   | Holes            |
|----------------|------------------|
| B <sub>1</sub> | 8.33             |
| B <sub>2</sub> | 7.04             |
| C <sub>1</sub> | 5.13             |
| C <sub>2</sub> | 4.50             |
| A <sub>1</sub> | 4.33             |
| A <sub>2</sub> | Target shot down |
| Average        | 5.9              |

The above percentages compare favorably with those normally attained by Regular Army organizations. Half of these practices were fired at about 900-mils angular heights and they were held in the mornings when the sun was directly in front of the firing line. Speeds of the plane varied as much as forty miles per hour on consecutive courses. All firings were on crossing courses. The total training of each organization prior to record practice averaged less than three hours.

### Czech Maginot Line—From Inside

The growth of those steel-and-concrete boundary barriers, the French Maginot Line and the German Limes Line, has resulted in much free speculation as to their ultimate value in war. In point of fact, very little is known about these fortifications and what information is released is clearly of the inspired "official" variety designed to bolster home morale or inspire fear in a potential enemy.

But the fall of Czechoslovakia last autumn brings in its train some interesting revelations regarding the Czech frontier fortifications that had been designed to repel a German attack. In as much as Czech national defense ideas had been heavily influenced by French policy and subsidies, it was natural to expect that from the Czech fortifications one might learn much about the Maginot Line. Here is what one German officer reports on the Czech border defenses.

This officer—Colonel Biermann of the Reich's Engineers—discussed his findings in a recent number of the *German Engineer Quarterly*. He remarks, in opening, that after seeing the vast girdle of works that surrounded Czechoslovakia and calculating the immense manpower necessary to hold them, one might well wonder if the Czechs had not run counter to the principle that fortifications should economize in personnel in order to release troops for a war of maneuver.

After this bit of preliminary headshaking, Colonel Biermann gets down to business to describe the various types of works that made up the Czech "Maginot" Line. As the German troops streamed across the border they found that the fortifications grew progressively stronger as they penetrated the country. There were some exceptions to this rule, which will be discussed later. The border outposts on the roads consisted in the main of concrete-wall barricades, loopholed for rifle fire. Extending halfway across the road, alternately right and left, these

barricades were designed to slow down traffic which was to be halted altogether by a final road barrier that extended wholly across the highway.

On the little-traveled country and farmroads, lengths of steel rails imbedded in concrete were supplemented by improvised vehicle-delaying arrangements. There is no mention of road mines, although Colonel Biermann says that many bridges were destroyed. There was little evidence along the highways of blockhouses or pillboxes from which fire could be brought to bear upon the barricades; apparently there had not been time enough to construct these.

In the Bohemian Basin, light fortifications extended in a line of outposts and showed evidence of hasty preparation. These outposts, of which Colonel Biermann estimates some 2,000 were prepared, were designed primarily for shelter against rifle fire and shell splinters.

Behind the outer line of light defenses, the Germans came upon the medium fortifications known as "ear" posts, so called because of a pair of concrete flanges (ears) visible when approaching the works frontally. Behind the ears were loopholes for machine-gun and antitank fire. Because of this peculiar construction the pillboxes could fire only to the flanks; very few had provision for frontal fire and then only when situated on a reverse slope secure from long-range observed fire. In areas of tactical importance the ear-post groupments were stiffened by heavy works sited among the pillboxes.

Along some sections of the Czech-German boundary northwest of Moravia the heavy works were the only line of defense. As in the case of the ear posts these were designed to furnish only flanking fire, but their armament was, of course, much heavier.

Colonel Biermann estimates that the heavy works could withstand the fire of guns up to about twelve-inch caliber. The roofs and walls were of reinforced concrete up to eight inches in thickness. Here he observes that the tactical principle seemed to differ from the French doctrine of meeting the enemy with weakness that grows progressively stronger. In the Moravian valleys the Czechs expected to give an invader the stiffest of resistance from the very beginning.

At keypoints in the Moravian position several fortifications were combined in one massive strong point that was proof against the heaviest metal. The roofs and walls approximated eleven feet in thickness; the turret armor averages twelve inches.

Colonel Biermann's verdict is that in October, 1938, one could only say with respect to the Czech forts: "Everything still incomplete." The defensive belt could hardly be called a continuous front and a penetration in a few weak spots would have resulted in a collapse of the entire system. But, had the European political situation given the Czechs additional breathing space—then, says Colonel Biermann, that would have been another story. In fact, he judges that given another year in which to prepare—say until this October—the Czechs could have held out behind their fortifications long enough to justify

major assistance from other European powers.

There appears to have been only one item lacking in the little country's national defense system: Time. And of that desperate need, the Czechs may well echo Napoleon's dictum: "Ask me for anything—except time."

### National Defense in Australia

Unsettled conditions in the Orient have convinced the Australian citizen that it is high time to look to his defenses in time of peace rather than to hastily improvise in time of war. The Commonwealth of Australia, it is interesting to note, spends more on armament than any other portion of the British nation with the exception, of course, of the mother country. The 1937 defense budget of Australia was approximately sixty million dollars; five years previously it had been sixteen millions.

About one-third of the budget is devoted to the Navy for modernization and new construction. Several destroyers and torpedo boats are being laid down in Australian yards, a new departure for the Commonwealth. Within a short period of time Australia will have the following vessels afloat: 5 cruisers, 4 service-type ships, 2 destroyers, 12 motor torpedo boats, and 1 survey ship. The construction of a capital ship was rejected by the Australian government on the grounds that such a vessel would take too long to construct and that the large money outlay could be far better invested in smaller type vessels more suited to the special defense problems of the Commonwealth.

In the department of air defense it is interesting to note that a few years ago there was sharp disagreement as to the proper function of an air corps in Australia. One faction advocated a huge air force to the detriment of the ground arms, basing its contention on the theory that the air arm was the best method of defense for the Commonwealth. The issue was decided at a general election and the nation overwhelmingly decided in favor of a policy of balanced defense with somewhat of a bias toward a strong naval policy.

Hence the present doctrine of the Australian Air Force is chiefly cooperation with the Navy and Army. The following is the order of priority of wartime missions for the Royal Australian Air Force:

1. To fight and destroy enemy aircraft
2. To scout seawards in search of raiders
3. To assist and supplement the various fixed defenses
4. To provide aircraft for naval cruisers and for the troops in the field
5. To take independent offensive action in special circumstances

### German Naval Views on Coast Defense

A retired German naval officer recently commented on the worth of coastal fortifications in the *Werbtechnische Monatshefte*. This officer, Fregattenkapitan a. D. Rehder, has this to say:

"After the Great War, the opinion was frequently expressed that the day of heavy battleships was over, and

that their problems could be equally well, and at the same time more economically solved by heavy bombing airplanes. This same untenable opinion is now finding its way into considerations regarding coast fortresses, where it is imagined, on grounds of economy, that heavy artillery can be dispensed with. Nevertheless, as the rearmament of coasts throughout the world shows, this heavy artillery continues to be the backbone of coast defense; it is of course, supplemented by medium, light and antiaircraft artillery. Minefields will make it more difficult for an enemy to approach the coast, while hawser, net and baulk booms will safeguard the lighter fighting vessels and submarines in harbor.

"In the future, as in the past, it can be taken that coast fortresses will have superiority over ships. In their layout they will differ from those built hitherto in that, instead of presenting an extensive frontage, they will be characterized by depth, and their land front will be protected by special forts, field fortifications and prepared machine-gun nests.

"Ships have normally a limited life, and have therefore to be replaced. The life of coast defense fortresses is a great deal longer. In their design, it will not only be necessary to consider present requirements, but to take as long a view as possible of future developments in coast defense armament and in the measures necessary for its protection. The main condition for success lies in the smooth cooperation between the navy, the air force, and the army."

### Warding Off Low-Flying Aircraft

The static light batteries of the antiaircraft divisions will be in training through the summer. This artillery is a new idea and is specially designed to ward off low-flying attack and danger from the dive-bomber. In the recent air exercise hedge-hopping tactics were tried out with considerable success, and our French allies think that the "*vol rase*," as they call it, may not be the least of menaces from above.

This AA gun is in effect our old friend the Bren gun on a super scale and fires a 2-lb. shell. Being such, sub-calibre practice is the best method of preliminary instruction for untrained personnel, the real Bren mounted on the AA gun and the handling of the latter accurately reproduced. In this way a towed target can be fired at,

with a percentage of tracer ammunition to point out errors of direction and the difficulty of laying-on a fleeting object which passes closely overhead.

—*The United Services Review*—Aug. 31, 1939.

### Wartime News Photography

During the Manassas phase of the First Army Maneuvers this summer the acquisition of newspictures under wartime conditions received a test from two enterprising photographers representing a pair of Eastern dailies. The two newsmen accompanied the troops not only for the purpose of taking pictures but also to find out just how little photographic impedimenta was necessary when operating with troops in the field.

In addition to miniature cameras the photographers carried field darkrooms utilizing daylight developing tanks. The entire assortment of cameras, seven additional lenses, chemicals, bulbs, flashguns, and film, were carried in two 18-inch fiber cases. The bulb and flashgun equipment was held to a minimum owing to its bulk and the impracticability of carrying such items in wartime. Under bad light conditions high-speed lenses (*f:1.5*) compensated for the lack of flashguns.

Pint thermos bottles carried chemicals while two larger bottles carried water. The use of thermos bottles enabled the photographers to secure temperature control of the liquids in spite of the summer heat.

Pigeons, borrowed from a homing-pigeon club, carried developed film to the newspapers two hundred miles away.

The equipment bore a similarity to that carried by correspondent photographers when operating in Ethiopia, Spain, and China.

### Back Numbers

The Hawaiian Separate Coast Artillery Brigade has no back numbers of the COAST ARTILLERY JOURNAL prior to January 1, 1939, in its official file. Since a complete file of JOURNALS would be invaluable for reference, it is hoped that officers having no further use for back numbers will be willing to donate copies.

Anyone who is willing to donate back numbers is requested to write to the Commanding General, H.S.C. A.B., Fort DeRussv, T.H. Arrangements will be made for shipment at no expense to the donor.



# Coast Artillery Activities

## OFFICE OF CHIEF OF COAST ARTILLERY

*Chief of Coast Artillery*

MAJOR GENERAL A. H. SUNDERLAND

*Executive*

COLONEL JOSEPH A. GREEN

*Matériel and Finance Section*

LIEUTENANT COLONEL H. B. HOLMES, JR.

MAJOR J. T. LEWIS

MAJOR S. L. McCROSKEY

*Plans and Projects Section*

LIEUTENANT COLONEL A. G. STRONG

MAJOR L. L. DAVIS

*Organization and Training Section*

LIEUTENANT COLONEL D. D. HINMAN

MAJOR AARON BRADSHAW, JR.

CAPTAIN J. E. HARRIMAN

*Personnel*

LIEUTENANT COLONEL K. T. BLOOD



## Hawaiian Separate Coast Artillery Brigade

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

LIEUTENANT COLONEL C. M. S. SKENE, *Chief of Staff*

MAJOR F. A. MACON, *Adjutant General & S-1*

LIEUTENANT MILAN G. WEBER, *Acting S-2 & Gunnery*

LIEUTENANT COLONEL J. H. LINDY, *S-3*

LIEUTENANT COLONEL H. R. BEHRENS, *S-4 & War Plans*

CAPTAIN I. H. RITCHIE  
*Com. and Engineer Officer*

CAPTAIN W. H. KENDALL  
*Sec. Ath. Officer*

CAPTAIN S. E. WHITESIDES, JR.  
*Chemical Warfare Officer*

LIEUTENANT W. A. CALL  
*Ordnance Officer*

COLONEL H. C. MERRIAM

*Commanding Harbor Defenses of Pearl Harbor*

COLONEL CHARLES K. WING  
*Commanding 64th Coast Artillery (AA)*

COLONEL W. D. FRAZER  
*Commanding Harbor Defenses of Honolulu*

*By Lieutenant Milan G. Weber*

### SEARCHLIGHT PRACTICES

The 64th Coast Artillery's searchlight battalion, Major C. R. Roberts, commanding, after an extended series of night missions, conducted their second record practices for the year in the vicinity of Hickam Field.

Battery A and E, commanded by Captain D. S. Ellorhorpe and Lieutenant F. T. Folk, respectively, conducted advanced searchlight practices on the night of July 21. Each practice was conducted against planes at about 15,000 feet altitude with two planes in each attack. Each practice consisted of the following attacks:

- Three attacks with airplanes in tandem formation with an interval of from 30 to 90 seconds.
- Two simultaneous attacks with airplanes about 60° apart.
- One gliding attack.

Each of these two batteries is conducting three advanced practices during the present calendar year. The first pair of practices conducted in April were similar to the above except that in April a normal target practice setup was used whereas in July the setup closely approximated local service conditions. In the July practices, the first information furnished to the battery as to the approach of airplanes came from the sound locators. In many cases the planes were tracked through clouds. As these practices were designed to solve some of our local wartime problems they have been most instructive to all.

### ANTI-AIRCRAFT PRACTICES

The 64th Coast Artillery took to the field in July for its second series of target practices. In this series stereoscopic height finders were used for spotting as well as for altitude determination. In the previous series the fuze

range pattern method had been used. While considerably higher scores are resulting, it is believed that these are largely due to the fact that the personnel are now becoming better trained against targets appearing suddenly from behind cloud banks and from unexpected directions at various altitudes.

Of special note was the special high explosive practice fired by Battery B under the direction of Captain G. F. Heaney, Jr. In this practice sixty-five rounds of high explosive were fired at two crossing, one approaching, and one diving target. The sight of the small black bursts gradually changing to a barely visible light brown puff was indeed unusual.

With Major W. R. Goodrich, in charge of the plane direction, Battery I (machine gun), Captain R. I. Glasgow, commanding, fired its second series of practices. In the night practices, night glasses were tried out. These glasses functioned quite well against unilluminated targets. If longer barrels for the .50 caliber guns are secured, there will be more experimentation to determine if the illumination afforded by the .50-caliber tracers is enough for night firing against unilluminated targets.

In the day practices, the ranges varied from 743 to 2,081 yards, altitude from 247 to 889 yards, and speeds from 94 to 190 miles per hour. In addition the courses were all varied in direction.

Three additional assignment practices of the harbor defenses of Pearl Harbor were fired from the firing point used by the gun batteries of the 64th Coast Artillery. This firing point, about a mile and a half northwest of Barber's Point, was cleared of Algeroba trees this year and steps are now under way toward making it the permanent target practice ground for all mobile antiaircraft units of this brigade. Other additional assignment practices are now being fired from Fort Kamehameha.

#### MODIFIED 155-MM. PRACTICES

Battery A and C, 16th Coast Artillery, commanded by Captain Donald B. Herron and Lieutenant James T. Darrah, each fired two modified 155-mm. gun practices in July from the beach at Fort DeRussy. For these practices, the fire-control and position-finding apparatus for fixed armament were used, thus affording the firing battery all its essential drill except for the actual firing.

#### COAST ARTILLERY ASSOCIATION TROPHY

On August 26th, at a review at Fort Shafter, Brigadier General Gardner presented the Coast Artillery Association Trophy to the 64th Coast Artillery. This is the second time that this trophy, awarded annually to the outstanding Coast Artillery Regiment in the Regular Army on the basis of Excellence in target practice, has been won by a regiment of this brigade, the 15th Coast Artillery having received the trophy in 1932.

The award this year is based upon the target practice performance of the 64th Coast Artillery in 1938 when it was commanded by Colonel R. M. Mitchell. Seven of the nine lettered batteries earned the rating of Excellent:

Battery A, (AA Searchlights) commanded by Captain D. S. Ellerthorpe.

Battery B, (3-inch AA guns) commanded by Captain G. F. Heaney, Jr.

Battery C, (3-inch AA guns) commanded by Captain M. L. Skinner.

Battery E, (AA Searchlights) commanded by Lieutenant F. T. Folk.

Battery G, (3-inch AA guns) commanded by Captain C. E. Rothgeb.

Battery I, (AA Machine guns) commanded by Captain F. L. Hayden.

Battery K, (3-inch AA guns) commanded by Captain P. B. Denson.

#### FIELD MANEUVERS

The Honolulu Groupment held a three-day field exercise on August 9, 10 and 11. In addition to the usual naval defense problem, an infantry phase was conducted. In this phase, troops camped at Bellows Field on the windward side of Oahu and began a march at 4:00 A.M. without prior warning.

#### PERSONNEL CHANGES

Colonel Charles K. Wing took over the command of the 64th Coast Artillery on July 1 from Lieutenant Colonel F. F. Gallagher who had commanded the regiment since the departure of General Jarman in March.

Lieutenant Colonel A. F. Englehart and Major L. L. Davis, Coast Artillery officers who had been assigned to Department Headquarters, left in August for new duties at Fort Worden and the office of the Chief of Coast Artillery, respectively. Captain W. H. Dunham, brigade S-2 and gunnery officer, left in July for his new assignment as a student at the Command and General Staff School.

#### ATHLETIC NOTES

Lieutenant Henry J. Katz won the department golf championship in competition with all of the officer golfers in the Islands.

The 64th Coast Artillery baseball team coached by Lieutenant Oren Swain and First Sergeant William C. Ghan, won the sector championship and went on to defeat the 21st Infantry for the Army championship of the Islands. This is the first time since 1936 that the All-Army trophy has left Schofield. The 64th team will play the Fleet Air Base shortly to decide the Army-Navy Championship.

The tennis team of the Harbor Defenses of Honolulu is leading in the Sector-Navy tennis league. The doubles team composed of Lieutenant William A. Call and Lieutenant William S. Coit and that composed of Private Everette Stockstill and Private Ray Trepte were undefeated during the first round of play. Lieutenant Coit, coach of the Honolulu team, has been named coach of the Sector team which will play against the Schofield team in September.

# First Coast Artillery District

COLONEL RODNEY H. SMITH, *Commanding*

MAJOR ROBERT T. CHAPLIN, *Adjutant*

COLONEL OTTO H. SCHRADER  
*Commanding Harbor Defenses of Portland and Portsmouth*

COLONEL T. H. JONES  
*Commanding Harbor Defenses of Long Island Sound*

CAPTAIN CHARLES N. BRANHAM  
*Commanding Harbor Defenses of New Bedford*

COLONEL MONTE J. HICKOK  
*Commanding Harbor Defenses of Boston*

MAJOR EDWARD L. SUPPLE  
*Commanding Harbor Defenses of Narragansett Bay*

During the past few months the First Army maneuvers have dominated the training activities of the district and have provided an extremely busy and highly instructive period for all Coast Artillery personnel in New England.

The district commander, Colonel Smith, was G-2 of the I Corps, and his adjutant, Major Chaplin, was adjutant general of the same corps, for the duration of the maneuvers.

## HARBOR DEFENSES OF PORTLAND AND PORTSMOUTH

The general exodus of enlisted men detailed for the maneuvers made the defenses rather forlorn looking with so few men left. "Maneuver widows" predominated. The clean-up after service practice and in preparation for the annual ordnance inspection is under way.

Major Imperatori has returned from the hospital and is again on duty.

Major Hudgins was ordered to Walter Reed and left this station to report to the hospital on August 7th.

Staff Sergeant Harry J. Dawe has arrived in Manila and is assigned to the harbor defenses of Manila and Subic Bays, Fort Mills.

## HARBOR DEFENSES OF BOSTON

*By Colonel Monte J. Hickok*

On July 21st Battery A, 9th Coast Artillery finished its record practice with the excellent score of 150. Wind and weather were mild during the entire mine season and conducive to good work on the water. Portable radios solved inter-boat communication. This innovation obviated the necessity of transmitting reports and messages by voice.

A portable radio was placed on the bridge of the mine planter and each of the small mine boats was furnished with an individual set. All sets were tuned to a given wave length, allowing an officer on the planter, or L-boat, to easily control, instruct, and direct all of the small boats operated. Much valuable time was saved in mine planting and orders were transmitted with accuracy. The sets were obtained through the courtesy of several officers who loaned their privately owned instruments for the practice.

After hours of regular duty the portable radios furnished much entertainment for the detachment sent out in small boats to guard the mine field. Every thirty minutes they tuned in with a shore station for any reports or necessary instructions.

The contingent from the Harbor Defenses of Boston

absent on duties incident to the First Army maneuvers included one officer, forty-eight enlisted men and one civilian ordnance machinist. Captain Norman A. Congdon, who had been scheduled for participation in the maneuvers was in the station hospital recovering from an operation.

The lower or west parade ground at Fort Banks has been raised and leveled. It now presents an excellent appearance and is more in keeping with the rest of the post.

On Friday evening, August 11th, a farewell dinner was given to Master Sergeant Lec M. King, 9th Coast Artillery, on his retirement after thirty years' service.

## HARBOR DEFENSES OF LONG ISLAND SOUND

*By Captain Frank T. Ostenberg*

During the last three months Fort H. G. Wright has been a beehive of activity. The 11th Coast Artillery moved to Fort Adams, Rhode Island, and to the First Army maneuver area; the post was preparing for the arrival of the National Guard; the constructing quartermaster was starting the new construction; and the 11th Coast Artillery was reorganized. Numerous inspectors and visitors arrived and departed in connection with these activities.

*O.R.C. and C.M.T. Camps:* On June 8, 1939, Lieutenants W. Bruce Logan, Lafar Lipscomb, Jr., George T. Weitzel and Francis M. McGoldrick and a detachment of forty-nine men of the 11th Coast Artillery left on the U.S.M.S. *Greene* for Fort Adams, for temporary duty in connection with the ORC and CMTC. This detachment was joined by the band on July 6th, 1939. All except Lieutenants Logan, Weitzel, and McGoldrick—who went to Plattsburg for the maneuvers—returned to Fort H. G. Wright by boat on August 10, 1939.

*Reorganization:* On July 1, 1939, the 11th Coast Artillery was reorganized in compliance with orders from the War Department. Headquarters Battery, Battery A, B, and C became Headquarters Battery, 11th Coast Artillery; Headquarters Battery, 1st Battalion; Battery A, B, and C; Headquarters Battery, 2d Battalion; Battery D and E. There was no change in the band. Headquarters Battery was reduced from 195 men to 80 men, each battalion headquarters battery has 20 men and each line battery 104 men.

*National Guard:* On July 1, 1939 the 242d Coast Artillery, Connecticut National Guard, commanded by Lieutenant Colonel Russell Y. Moore, arrived for two



*Colonel Earl C. Webster commanding the 243d Coast Artillery, Rhode Island National Guard and his staff passing in review before Governor William H. Vanderbilt of Rhode Island on Visitors Day, at Fort H. G. Wright, New York.*

weeks' training. Brigadier General William F. Ladd, Adjutant General of Connecticut, four State staff officers and seven Reserve officers received training with the regiment.

Major William Hesketh, unit instructor, accompanied the regiment and Major Russell T. George, unit instructor of the 243d Coast Artillery, Rhode Island National Guard, made the annual field inspection of the 242d.

The Honorable Raymond E. Baldwin, Governor of Connecticut, was a guest of the 242d on Visitors' Day, and was tendered a review and inspected the regiment. Governor Baldwin was accompanied by his staff. Major General James A. Woodruff, First Corps Area commander, accompanied by Colonel Pierre V. Kieffer, National Guard Officer, First Corps Area, Lieutenant John J. Stark, ADC, and Major General Morris B. Payne, Connecticut National Guard, in command of the 43d Division, inspected the 242d Coast Artillery on July 13. General Payne was treading on familiar ground, which brought back memories of the time in December, 1917 when as a major he helped organize the 56th Artillery for service overseas. General Payne is a Senator in the Connecticut Legislature.

The Connecticut National Guard had an extremely successful camp, firing all their assigned target practices.

On July 15, 1939, the Connecticut National Guard was replaced by the 243d Coast Artillery, Rhode Island National Guard, commanded by Colonel Earl C. Webster. Brigadier General Herbert R. Dean, Adjutant General of Rhode Island, nine State staff officers and eight Reserve officers received training with the regiment.

Majors Russell T. George and Ellsworth Young, the unit instructors, accompanied the regiment. Major William Hesketh, made the annual field inspection of the 243d.

The Rhode Island regiment had excellent firing weather during the first week. However "old man fog" was against

them during the last week and only the 6-inch battery was able to fire its target practice.

On July 29th the Rhode Island National Guard was replaced by the 241st Coast Artillery Massachusetts National Guard, commanded by Colonel Harry A. Skinner. Six Reserve officers received training with the regiment.

Lieutenant Colonel Berthold Vogel, unit instructor, accompanied the regiment to camp but left on July 31st for the maneuvers. Majors Russell T. George and Harry W. Lins, conducted the annual field inspection of the 241st.

Colonel Emmanuel Lombard, military attaché, French Army, observed the training of the 241st Coast Artillery and visited the posts of Fort H. G. Wright and Fort Michie.

Major General James A. Woodruff, accompanied by Colonel Benjamin F. Miller, Chief of Staff, and Lieutenant John J. Stark, ADC, inspected the 241st.

The Massachusetts National Guard had an extremely successful camp completing all target practices with a few days to spare. However, to the members of the regiment the camp's ending was a sorrowful one as this is the last camp Colonel Skinner will attend as their commanding officer. Colonel Skinner retires for age on May 11, 1940, having entered the military service in 1896. He is the only veteran of the Spanish-American War remaining in the Massachusetts National Guard. We all wish Colonel Skinner peace, contentment, and a long life, with the realization of a job well done. May he catch all the fish he wants.

*First Army Maneuvers:* On August 1st, Captain Charles E. Dunham, Lieutenants Yale H. Wolfe and Frank F. Tenney, and Battery C, 11th Coast Artillery, with attached personnel, numbering 293 enlisted men left for Plattsburg Barracks, for duty with the First Army maneuvers. The detachment took up duties as army military police company, First Army; police and billeting detail; telephone orderlies, and duty with contact um-

pires. The movement from New London to the maneuver area was made by truck.

On August 3d, Captains John M. Moore and Andrew Samuels, Jr. and Lieutenant Maurice J. Palizza, left for Plattsburg with 74 enlisted men for duty as Headquarters Company, I Corps. Captain James T. Barber and Lieutenant William V. N. Grace, left for Saranac Camp with 75 enlisted men for duty as Headquarters Company Provisional Corps.

A detachment of 19 enlisted men of the 11th Coast Artillery and Ordnance Detachment left on August 7th for the maneuver area.

We look forward to the return of the troops on or about September 1st.

*Quartermaster Activities:* The constructing quartermaster has begun work at Fort H. G. Wright and Fort Michie. Buildings are being salvaged, foundations laid; a utility storehouse has been moved to its new location and the old oil tank on our dock has been sold as scrap iron.

Staff Sergeant Andrew Skvancek, Jr. has arrived from Fort Mills. Sergeant Lylas W. Lynch has arrived from Fort Kamehameha.

Six Reserve officers are receiving training at Fort H. G. Wright under the Thomason Act.

*Recruits for Foreign Service:* Fort H. G. Wright has been designated as a casual center for recruits enlisted at Springfield, Massachusetts, for foreign service. The replacements are shipped to Fort Slocum as soon as there are accommodations for them there.

#### HARBOR DEFENSES OF NARRAGANSETT BAY

*By Captain Virgil M. Kimm*

In company with other Coast Artillery regiments the 10th Coast Artillery took another step in its growth toward a full active regiment. On July 1st, the Headquarters Battery, 10th Coast Artillery gave place to an active firing battery, Battery A and a Headquarters and Headquarters Battery.

The month of July saw the annual Fort Adams C.M. T. Camp become active. There was visible the usual lineup of suitcase-carrying "cits" being transformed into awkward-looking soldiers, and then later developing into the smart appearing "Reds," "Whites" and "Blues" who provided the principal interest on Governor's Day. The camp, all factors considered, was one of the most efficient ever conducted at Fort Adams. The newly opened officers' club provided a nightly gathering place for the officers attending the camp.

In August, the 10th Coast Artillery provided personnel for the First Army Maneuvers, supplying telephone operators for the umpire group and administrative personnel for the casual camp. The 400-mile ride from Fort Adams to the maneuver area via such historic battlefields

as Bennington and Ticonderoga proved of great interest and instruction to the men fortunate enough to be selected for the trip. The regiment provided personnel for the post guard of Fort Adams in the absence of the 2d Battalion, 13th Infantry.

The erection of a new boathouse at Fort Adams, replacing that damaged by the hurricane, is still progressing. The building, located ashore, instead of on piling as heretofore, will receive mine yawls via a marine railway thereby simplifying many operations, including the elimination of the old "heave ho"; as, in the new structure, a power winch will draw the yawl to the floor level.

September will see the annual submarine mine training period of the 10th Coast Artillery. The command looks for better weather this year than in 1938, when the hurricane disrupted operations shortly after the planting of the test group.

Technical Sergeant Harry Ebbert, Ordnance, joined early in September from the Savanna, Illinois Ordnance Depot.

The month of September marks the departure of First Sergeant Shadwell, Battery A, for the tropics, with station at Fort Randolph, Canal Zone. First Sergeant Shadwell has been a popular president of the Fort Adams NCO club since the last election. We wish him a pleasant trip and continued success at his future station. He will be replaced by First Sergeant Dominic Miglino from Fort Randolph.

Private William D. O'Neil, Battery A has been detailed as a student at the Coast Artillery School, (Electrical Course), beginning September 15, 1939.

#### HARBOR DEFENSES OF NEW BEDFORD

*By Captain Charles N. Branham*

New Bedford was host to three visiting warships last summer. Following the Portuguese destroyer *Tejo* came the U.S.S. *Leary* in time for the local celebration of the 4th of July. The *Leary* was followed by H.M.S. *Penzance*. The visits of these warships were occasions for numerous official and social affairs in which civic, military, and naval organizations in the vicinity participated and cooperated. The expressions of appreciation by the commanders of these warships for the many courtesies extended to them and their officers and crews while in port, and the pleasant memories of those whose privilege it was to welcome them, are real evidences of the value of such good-will visits.

Almost all of the evidence of the severe damage caused by the 1938 storm has been removed, and in many instances, pre-hurricane facilities have been removed. So much so that a common remark of casual visitors now is to the effect that, "Well, I see that the storm didn't hurt you much!"

# Harbor Defenses of Puget Sound

COLONEL JAMES H. CUNNINGHAM, *Commanding*

*By Lieutenant Frederic H. Fairchild*

An important and interesting activity during the past months was the recent test of the Seattle area aircraft warning service. One hundred and forty-four observers were used, a large number (64) of whom were employees of the Puget Sound Power and Light Company. In addition, fourteen other sources of information were used including the National Forest Service, the National Park Service, the Coast Guard, the Washington State Highway Patrol and others. The center was in Seattle in a room provided by the Puget Sound Power and Light Company, whose officials, as did all others concerned in the test, gave unusual cooperation and assistance. The photograph shows the plotting board and other equipment used in the test. This was all manufactured locally at Fort Worden.

The test was a great success in every way; the flights were carried out as scheduled and each flight was picked up by a large majority of the observers concerned. Great interest was shown by civilians and the information center was full of interested spectators a good deal of the time. Special attention was devoted to publicity. A press release was issued before the test and two radio broadcasts were made, one by Captain Myers and one by Captain McGraw, before and during the exercises.

The annual C.M.T. Camp closed on July 30. For the first time at Fort Worden, the trainees fired both seacoast

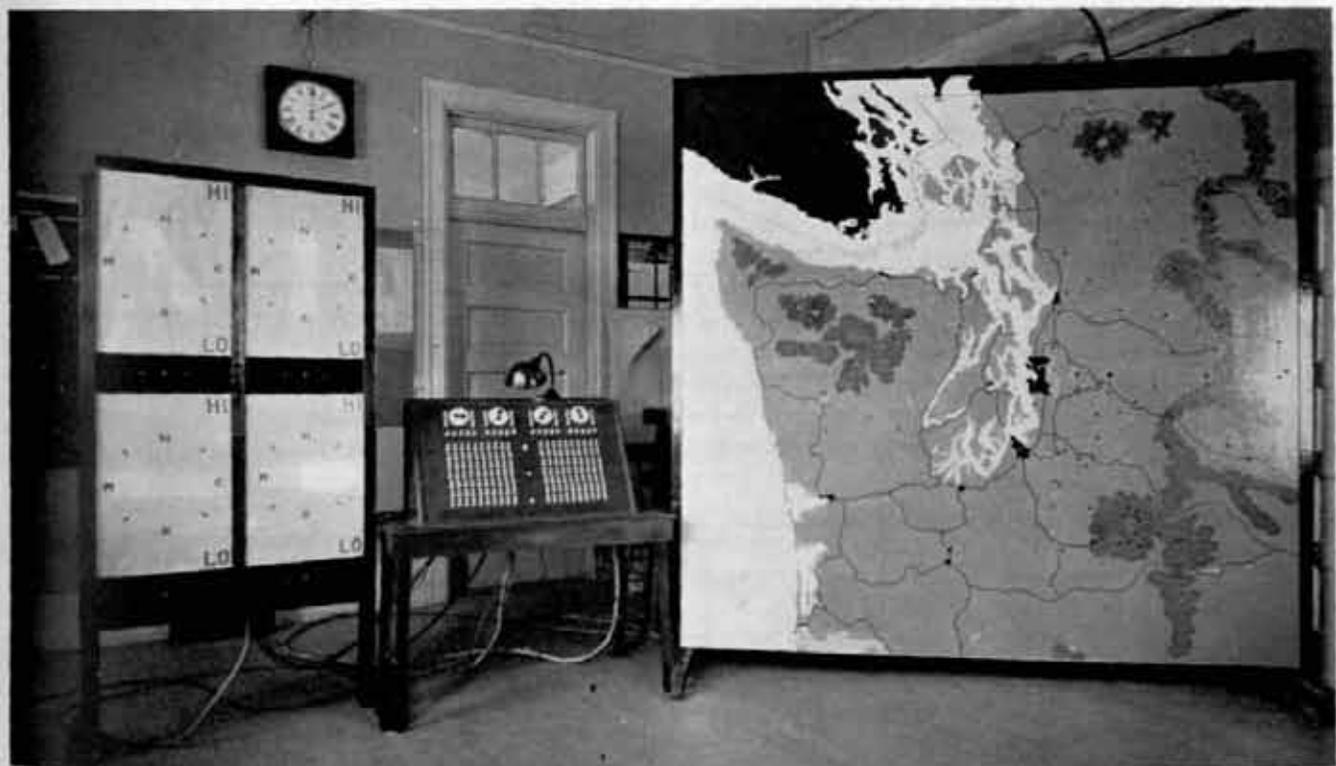
and antiaircraft armament which added great interest to the month's training.

Thirty officers of the 529th Coast Artillery (AA) Organized Reserves, arrived from Oregon for a two-week training period. Other visitors included the mine planter *Niles* from Fort Scott and two Navy submarines, the *Perch* and *Stingray*.

Lieutenant and Mrs. R. J. Lawlor have left for Fort Monroe and the Coast Artillery School. His command, the mine planter *Bell*, now at Fort Scott, is to be turned over to one of our new arrivals, Lieutenant L. C. Ratcliffe. Other new arrivals are Lieutenant and Mrs. Thomas Mifflin, from Fort Douglas. During the next month we look forward to the arrival of three officers, Major A. F. Englehart, from Hawaii, who is to be executive, Lieutenant F. T. Berg from Panama, and Lieutenant Odom, now on graduation leave from West Point.

At this time of the year the most popular sport is fishing for trout and salmon. It is well known to all who have been stationed here that Fort Worden is a fisherman's paradise. The salmon run is at its height and the entire area in front of the wharf is full of small boats trolling back and forth.

Other activities included a dance at the club for each group of Reserve officers and for the National Guard, as well as many private parties and picnics at old Fort Townsend.



*Plotting board and equipment used in Seattle area warning service test.*

# Corregidor

BRIGADIER GENERAL WALTER K. WILSON, *Commanding*

COLONEL FREDERIC A. PRICE, *Executive*

LIEUTENANT COLONEL R. B. PATTERSON, *Adjutant General & S-1*

LIEUTENANT COLONEL E. O. HALBERT, *S-2*

LIEUTENANT COLONEL C. E. COTTER, *S-3*

CAPTAIN PAUL W. COLE, *S-4*

COLONEL R. P. GLASSBURN,  
*Commanding 59th Coast Artillery (HD)*

COLONEL WILLIAM C. KOENIG  
*Commanding 60th Coast Artillery (AA)*

COLONEL WILLIS SHIPPAM  
*Commanding 91st Coast Artillery (PS) (HD)*

LIEUTENANT COLONEL J. B. CRAWFORD  
*Commanding 92d Coast Artillery (PS) (TD)*

*By Lieutenant Colonel R. E. Phillips*

This command has been engaged in the garrison training period since June first. Gunners' instruction occupies the attention of the troops while schools and conferences furnish additional activity for the officers. The 23d Infantry Brigade (PS), from Fort McKinley, dared the weather-man long enough for each of their battalions to spend a few days at Corregidor in antiaircraft and anti-marinecraft firing with small arms. The rains finally made good their threats and sent down a series of showers that made the infantry camp site look like a memento of "Sunny France." Once these showers were over, the sun came out and treated us to an extra month of dry (and extra hot) season. Following which, the typhoons staged a belated entrance in July but, nevertheless, managed to pour down enough rain to lack only one quarter of an inch of breaking the all-time record for any one month.

The *Grant* reached Manila on her July trip without untoward event, other than being one day behind schedule owing to typhoon weather. The leaving of the *Grant* was a sad one for the garrison owing to the sudden death of Major Kenneth C. Bonnev, who died in Sternberg Hospital on July 20th. The command mourns the loss of a faithful officer.

On the Fourth of July, the 59th and 60th Regiments made a trip to Manila to take part in the Independence Day Exercises, arranged for the occasion. Acting United States High Commissioner J. Weldon Jones, delivered the principal address after the troops of the Department, together with representative units from the Philippine Army, had passed in review before the department commander, Major General John H. Hughes.

Bowling is the principal sport as long as the typhoons blow. Two staff teams struggled with the officers' teams from the regiments but failed to get better than second in the duck pin league. The ladies of the staff, did better and won their section of the duck pin league. Basketball men are warming up by interbattery games in preparation for some fast work in the inter-regimental and inter-post games to follow.

A diversion from the indoor training occurred early in June when one of the Bilibids slipped away from a sentry and caused a general search with all units combing the brush for the missing prisoner.

New officers were elected by the Corregidor Club at the annual meeting, immediately after the arrival of the

*Grant*. Colonel Price is the new president. With him, on the board of governors, are Captain Conzelman, Captain Elmes, and Captain Amoroso.

The officers of the harbor defenses were treated to a tour of inspection at Nichols Field and Fort McKinley on June 22d and 23d. A most instructive demonstration was staged at Fort McKinley by the 23d Infantry Brigade and the 4th Chemical Company. A battalion problem in the defense, an attack problem, and demonstration firings with chemical mortars were conducted by troops. Following these events, the 14th Engineers exhibited their skill by throwing pontoon and assault bridges across an arm of the Pasig River.

## 59TH COAST ARTILLERY

*By Major Louis H. Thompson*

On July 19th Colonel George Ruhlen relinquished command of the 59th Coast Artillery to Colonel Robert P. Glassburn. Colonel Ruhlen and Major James T. Campbell, both of whom have served for the past two years with the 59th, returned to the States on the July 24th transport. A farewell dinner dance was given by the officers and ladies of the regiment at the Corregidor Club on July 8th in honor of Colonel Ruhlen and Major and Mrs. Campbell. All members of the regiment regret the loss of these two able and efficient officers and we send with them our best wishes for success and happiness in their new duties. During the two years that Colonel Ruhlen has been in command the regiment has gone to new heights of achievement both in artillery firing and athletic supremacy.

Captain William L. McNamee, former commanding officer of Battery A, who has been on leave of absence and detached service since June 7th, also sailed on the July 24th transport.

Lieutenant Leland R. Drake returned to the United States via Suez on July 3d. Captain Harold A. Brusher, who has been on detached service at Camp John Hay during his tour of duty in the Philippines, sailed on July 24th for the United States.

In addition to Colonel Glassburn, Captains Norman B. Simmonds and William B. Short arrived on July 19th for duty with the regiment. Captain Simmonds was assigned to command Battery A at Fort Mills and Captain Short to Battery E at Fort Drum.

Master Sergeant Oscar Younce, who retires with over thirty years' service on August 31, 1939, heads the list of the departing noncommissioned staff. On July 14th Headquarters Battery gave a farewell dinner for Sergeant Younce, at which time various speakers, including Colonel Ruhlen, extolled the long and honorable service of Sergeant Younce, who in turn gave some excellent and sound advice to the younger soldiers of the battery. Included among other departing members of the noncommissioned staff are First Sergeants Cason and Dwyer, and Staff Sergeant Messick.

The inter-battery duck pin tournament ended on July 3d with the Ordnance detachment winner of a close finish with forty-nine points won to twenty-three points lost. Battery B was second with forty-eight wins and twenty-four losses. The 59th regimental duck pin team took the decision and the American title from the 60th Coast Artillery team by winning five out of nine games.

#### 60TH COAST ARTILLERY

*By Major Allison W. Jones*

The *Grant* brought Captain Girvelle L. Field and Captain Howard E. C. Breitung to the 60th on July 19th. Captain Field was assigned to Battery D, but Captain Breitung was, at least temporarily, lost to us, being assigned to Fort Wint and command of the Trainee Camp of the Philippine Army. On her outgoing trip, the *Grant* took two of our old timers who had spent their entire tour with the 60th: Captain J. T. Wrean and Lieutenant John W. Romlein. The loss of these old-timers leaves a hole the newcomers will have to work hard to plug. Captain Wrean goes to Mississippi State College and Lieutenant Romlein to the 51st Coast Artillery, Fort Monroe. A paper transaction gave Major Delbert Ausmus to the 60th, but he stays on his present duties at Fort Wint.

The regimental softball series ended just in time to beat the rainy season, Battery F defeating Battery E in a tie play off.

The inter-battery duck pin tournament found Battery B on top of the heap. Softball and duck pins ended the fight for the regimental commander's trophy, won again this year by Battery A, with Battery D a strong second.

In the inter-regimental duck pin match the 60th dropped a tough one to the 59th, losing 5 points to 4 on the final night of play.

In the officers' duck pin league the 60th team got off to a shaky start with a team largely composed of new bowlers but finished with a strong sprint that just missed 3d place.

The inter-battery ten pin tournament is now under way with inter-battery basketball just around the corner. Teams seem more closely matched than usual and competition should be hot.

During the period May 24-July 24, the 60th Coast Artillery concentrated on care and maintenance of matériel and armament which consumes a great deal of time during the rainy season. Gunners' instruction and officers' schools got under way and are now proceeding

satisfactorily. Air missions for tracking were scheduled several times each month in hopes that range sections could get some pre-season experience. However, every mission but one was rained out. The searchlight battery is undergoing a complete tuning up under Captain Arnold D. Amoroso, 60th Coast Artillery who hopes to hold a target practice this November and another one next March.

#### 91ST COAST ARTILLERY (PS)

*By Major V. P. Foster*

Gunners' instruction for enlisted men and troop schools for officers have been conducted during the past two months.

The regiment lost two field officers and one captain last month—Major Arthur L. Lavery, regimental adjutant, who left en route to his new assignment with Organized Reserves, 2d Corps Area at Buffalo, New York via Europe; Major Benjamin Bowering, 2d Battalion commander who left on last transport, assigned to duty with Organized Reserves, 7th Corps Area at Topeka, Kansas; and Captain Lee A. Denson, Jr., who commanded Battery D, 91st and who subsequently became regimental adjutant is assigned to duty as student at Army Industrial College, Washington.

The last transport brought to the 91st a former officer in this regiment—Major Valentine P. Foster, who is assigned to 2d Battalion and as regimental adjutant.

Spurred on by its supremacy in the regimental volleyball tournament, Battery A—Captain Newman, commanding—defeated the 92d Coast Artillery (PS) to capture the post scout volley ball championship, 1939.

The ducks flew south and in every other direction during the scout duck pin tournament which was launched early in May. Competition was keen and close matches featuring exceptional individual and team performances earmarked the entire tournament. Battery E—Captain Rousseau, commanding, took the lead early in the race and kept toppling over all opposition to finally win the top-notch position.

Hardened by the first rate competition in the inter-battery duck pin tournament, the 91st led by able, veteran bowlers Sergeants Juntilla and Macadaeg, won the scout post duck pin championship, 1939, by sweeping five out of eight matches.

On July 17th, the inter-battery ten pin tournament began and at present, at beginning of second half, last year's champions, Battery G—Captain Luce, commanding—seems quite determined to hold an already comfortable lead. However, with Batteries C and D flying close behind, the top-flight G Battery topplers may see a set back. Batteries E, A, B and Headquarters Battery follow in order.

The loss of mainstays, due to departure on the July transport, was keenly felt by the 91st officers' duck pin team. However, led by able toppler Captain Caluya, the 91st fought to third place in the post-wide officers' duck pin tournament. The officers' ten pin team faced an un-

expected reverse through loss of high scoring Major Lohmann—out with an injured knee.

On August 1st, the inter-battery basketball league had a "fire-works debut." The batteries this year have plenty of fast, capable newcomers and should have no difficulty in producing teams which will draw capacity crowds at the two gymnasiums.

At present the 91st regimental boxing team, made up mainly from last year's squad, is undergoing a preliminary period of intensive training for the boxing season to open early in September.

#### 92D COAST ARTILLERY (PS)

By Captain Olaf H. Kyster, Jr.

The past two months have been devoted to gunners' instruction schools for officers and enlisted men, and preparation for secondary assignment target practices with caliber-.30 machine guns.

The inter-battery softball tournament was completed June 22d and Battery C won without losing a single game. The final standing gave battery C the first place with no defeats. The Guard Battalion tied with Battery B for second position.

In the inter-battery bowling tournament, the duck pin series was completed June 28th. Batteries C and D were tied for first place so that it was necessary to play three

extra matches. Battery D won the play-off. The Guard Battalion held third place.

The 92d lost to the 91st in the inter-regimental duck pin tournament, but Corporal Calora, Battery D, 92d made the high single game score of 147.

In the officers' duck pin bowling, the 92d officers won the championship by defeating Staff B in the play-off of a first place tie.

The inter-battery ten pin bowlers started July 25th and as usual Headquarters Battery team started strong, taking every game so far. The inter-battery basketball tournament has just opened. During the past several years, Battery C always won the championship without much competition but it is believed that there will be a different story this year. Battery A has a promising team which has the championship look.

The 92d Regiment was pleased to welcome Major and Mrs. W. C. Braly and their nephew Bill Braly to Kindley Field. Major Braly has been on duty since 1934 as an ROTC Instructor at the University of California. He begins his second tour of duty at Fort Mills as executive and adjutant of the regiment.

The regiment regrets the departure on the last transport of two officers and families, Major McMorrow going on duty with Organized Reserves in Minnesota, while Lieutenant Cordes went to the 52d Coast Artillery, at Fort Hancock.



## With the Planters

The *Ellery W. Niles* is in Puget Sound, engaged in cable work. It is believed that she will be up north until around the last of the year. The warrant officers on the *Niles* should have some good fish stories when they return south. Salmon fishing is always good on the Sound.

The *Gen. J. Franklin Bell* is down in San Francisco taking care of the mine work while the *Niles* is up north. She is expected to return to Fort Worden when the *Niles* returns to her home port at San Francisco.

The *Col. Geo. E. Harrison* will have a new master, Mr. J. E. Murray, and a new chief engineer, Mr. W. O. Topham, very soon. They are on their way to the vessel now.

The *Gen. Absalom Baird* has been working up in the New England states the past few months and has had a very busy summer. She expects to plant mines at Newport in September. Since both mates are ordered to Panama, Mr. Trahey will be short of deck officers until their replacements arrive. Warrant Officers John P. Brady, first mate, and Laurence Careau, second mate, are ordered to the *Baird* from Panama.

The *Joseph Henry* has also been up in New England on cable work this summer. Warrant Officer R. M. Ashwell is reporting to the *Henry* as master. Mr. V. B. McClain, assistant engineer, looks for a promotion to chief engineer the last of this year.

The *Gen. E. O. C. Ord* has had a very busy summer around Fort Hancock. Warrant Officer Chester B. Maxim is reporting to the *Ord* as master. Warrant Officer Wm. J. McCartney is now on leave and expects to retire in a few months.

The *Gen. Wm. H. Graham* will have a new master, Warrant Officer Irving S. Hansen. Mr. Hansen has been visiting his home in California on leave before reporting to the *Graham*. Warrant Officers Edward A. Preutz, first mate, and J. B. Southworth, second mate, are also to sail for Panama for duty on the *Graham* very soon.

The *Gen. J. M. Schofield* has been busy with the summer work and camps at Fort Monroe. She has been towing targets off the Virginia Capes and expects to start mine planting very soon after the camps close.

# Panama Canal Department

COLONEL WILLIAM R. NICHOLS  
*Department Artillery Officer*

COLONEL EDWARD W. PUTNEY  
*Commanding Harbor Defenses of Balboa and  
4th Coast Artillery (AA & HD)*

COLONEL RUFUS F. MADDUX  
*Commanding Harbor Defenses of Cristobal and  
1st Coast Artillery (AA & HD)*

## FORT AMADOR

During the first week of August the 4th Coast Artillery enjoyed the brief visit of Secretary of War Woodring and General Sunderland. General Sunderland spoke to the assembled officers of the regiment on the problems and policies of his office in connection with the increase of the Coast Artillery garrison in Panama.

The 4th Coast Artillery believes that the examination for second class gunner should include a section on the use of the bolo. For as we push back the jungle to make room for the new construction, this tool becomes more important to the regiment than even the mimeograph machine, and we think that its value as a Coast Artillery weapon should be recognized.

The rain brought the target practice season to an end. Battery E fired their primary assignment antiaircraft machine-gun practices with good results, Batteries D, G, and I, have completed secondary assignment machine-gun practices with creditable scores. Intensive work on communications, gunners' examinations, and maintenance, will keep us busy for the next few months.

The 4th Coast Artillery celebrated Organization Day on August 21. Major Joseph F. Stiley was in charge of the activities, which included presentation of athletic awards, a mass track meet, basketball, boxing bouts, and a regimental dance.

## ATHLETICS

Battery I won the inter-battery basketball league for the second year in a row, losing only one game in the two years. The inter-battery boxing season is well under way, and promises to be as successful as last year, with much new material showing up.

## ARRIVALS AND DEPARTURES

The transports continue to take their toll of old friends and bring us new ones.

Captain Mallory C. Jones, Dental Corps, left for Fort Sill on the June 28 boat. The same transport brought Captain Stanley F. Steele, Dental Corps, and Captain James T. McGiboney, Medical Corps, for duty at Fort Amador.

Chaplain James L. Blakeney arrived July 7.

The July 30 transport took Major John T. deCamp to Fort Hancock, and Captain John H. Kochevar to the University of Delaware. Warrant Officer Charles V. Banner arrived and assumed leadership of the band. Lieutenant Colonel A. D. Chipman has taken over the plans and training office, and Major Joseph F. Stiley has added the post exchange and the athletic and recreation offices to his other duties.

The August 8 transport brought Captain J. F. Sturman, assigned to Battery D, and Lieutenant Carl E. Green, assigned as antiaircraft communications officer. Captain Thomas J. Randolph, Cavalry, and Lieutenant Joseph E. Bastion, Jr., Cavalry, arrived as aides-de-camp to Major General Lear.

Lieutenant Joseph H. Twyman left for Fort MacArthur, and Lieutenant C. L. MacLachlan for Fort Preble on August 14.

On August 30 we lost Lieutenant Alden P. Taber to the Ordnance Department at Aberdeen. Lieutenant Francis A. Liwski took over the mine property.

## FORT RANDOLPH

With the completion of maneuvers and target practices, the garrison has settled down to routine duties. Training of recruits, firing on the small-arms range, troop and of-



*Stephen C. Lipot of Kulpmont, Pennsylvania. Formerly a Private, of Battery A, 4th Coast Artillery, Fort Amador, Canal Zone, won the Soldier's Medal and the Silver Life Saving Medal of the Treasury Department. While stationed with the 2d Recruit Company at Fort Slocum he heroically attempted to rescue two boys from drowning in Long Island Sound.*

ficer schools, and occasional alerts occupied the major portion of the training schedule.

The basketball season has ended with Battery A winning the post championship. The boxing team, coached by Captain Charles W. Gettys, is already holding practices and many exciting inter-battery and inter-post bouts are promised.

Much construction and remodeling has been taking place on the garrison during the past two months. A new picket gate, new sets of quarters, and extensive gardening are some of the many jobs undertaken by the quartermaster.

Since the last report the following officers have joined the garrison: Major H. G. Archibald, Captain H. S. Harpole, Chaplain S. E. Decker, Lieutenants S. E. Hays and W. H. Harris.

The following officers recently departed: Major Roland T. Fenton, Major F. L. Christian, Captain George A. Ford, 1st Lieutenants P. C. Borup, Carl H. Fernstrom and Chaplain Charles I. Carpenter.

## FORT SHERMAN

Recent arrivals at Fort Sherman include Colonel Rufus F. Maddux, Lieutenant Colonel Edgar H. Underwood, Captains Ernest B. Thompson, Ralph W. Russell, Arthur N. Kracht, and Lieutenant Roger W. Moore. Colonel Maddux takes command of the 1st Coast Artillery and the harbor defenses of Cristobal, replacing Colonel William T. Carpenter who returned to the United States in July.

A great deal of interest has been shown in the weekly boxing smokers that are being held in the Fort Sherman playshed. Some excellent talent is being demonstrated, and it is expected that the members of the post boxing team to be chosen as a result of the smokers will give a good account of themselves in the sector matches which are to follow.

Officers who have departed recently, or who are to depart for new stations in the near future are Lieutenant Colonel William C. Washington, and Lieutenants Charles J. Odenweller, Jr. and Frederick T. Berg.

# Coast Artillery Orders

(July 1 to August 31, 1939)

Colonel M. A. Cross, from Org. Res. 5th Corps Area, to Utah State Agric. College, Logan, Utah.

Colonel H. C. Merriam, from Hawaii, to Inspector General's Dept., Sixth Corps Area, Chicago.

Colonel J. P. Smith, from Hawaii, to 4th Corps Area, Atlanta.

Colonel E. B. Walker, to Hawaii, sailing New York, Sept. 9. Previous orders amended.

Colonel B. H. L. Williams to retire upon his own application, Dec. 31.

Lieutenant Colonel E. B. Colladay promoted Colonel Aug. 1.

Lieutenant Colonel W. K. Dunn promoted Colonel June 12.

Lieutenant Colonel G. W. Easterday promoted Colonel July 14.

Lieutenant Colonel A. G. Frick promoted Colonel Aug. 1.

Lieutenant Colonel R. E. Haines promoted Colonel July 1.

Lieutenant Colonel I. B. Hill, from Org. Res. Duluth, to 11th, Ft. H. G. Wright.

Lieutenant Colonel Charles Hines promoted Colonel June 12.

Lieutenant Colonel T. H. Jones promoted Colonel July 1.

Lieutenant Colonel J. T. H. O'Rear promoted Colonel July 1.

Lieutenant Colonel E. W. Turner, retired Aug. 31.

Major E. L. Barr, from Ft. Slocum, to the Philippines, sailing New York, Dec. 27.

Major H. R. Behrens promoted Lieutenant Colonel Aug. 15.

Major R. M. Carswell promoted Lieutenant Colonel July 1.

Major C. E. Cotter promoted Lieutenant Colonel July 1.

Major L. L. Davis, from Hawaii, to office Chief of Coast Artillery. Previous orders amended.

Major Nelson Dingley, 3d, promoted Lieutenant Colonel Aug. 15.

Major A. F. Englehart promoted Lieutenant Colonel Aug. 15.

Major C. A. Gillette, from 9th, Ft. Banks to Org. Res. 4th Corps Area, Jackson, Miss.

Major J. H. Harrington, from St. Ignatius High School, San Francisco, to 9th C.A. Dist., Presidio of San Francisco.

Major I. B. Hill promoted Lieutenant Colonel June 12.

Major A. M. Jackson, from 65th, Ft. Winfield Scott, to 61st, Ft. Sheridan.

Major W. L. McMorris, from Loras Academy, Dubuque, to Hawaii, sailing New York, Sept. 9.

Major C. Q. Shelton, detailed as member of the General Staff Corps, War Department General Staff.

Major V. C. Snell, from Logan Senior High School, Logan, Utah, to 3d, Ft. MacArthur.

Major G. M. O'Connell, from Panama, to 62d, Ft. Totten.

Major C. R. Roberts, from Hawaii, to 52d, Ft. Hancock.

Major H. H. Slicer, from Ft. Slocum,

to Hawaii, sailing New York, Nov. 7.

Major E. L. Supple, from 10th, Ft. Adams, to Org. Res. Seventh Corps Area, Duluth.

Major Berthold Vogel promoted Lt. Col. June 12.

Captain A. D. Amoroso promoted Major Aug. 15.

Captain C. O. Bell promoted Major Aug. 15.

Captain F. R. Chamberlain, Jr., promoted Major Aug. 15.

Captain P. T. Gregory, from Hawaii, to 3d, Ft. Stevens.

Captain E. P. Jolls promoted Major Aug. 15.

Captain W. L. McCormick promoted Major Aug. 15.

Captain C. M. Mendenhall, Jr., from 3d, Ft. MacArthur, to The Citadel, Charleston.

Captain J. D. Moss, from Adjutant General's Department, Aug. 15.

Captain C. M. Myers promoted Major Aug. 15.

Captain M. B. Raymond, to Panama, sailing New York, Sept. 12. Previous orders amended.

Captain W. K. Stennis, to Hawaii sailing New York, Aug. 15, then to the Philippines, Oct. 11.

Captain F. B. Waters promoted Major Aug. 15.

Captain L. A. White promoted Major Aug. 15.

Captain A. E. Wilson, to Panama, sailing New York, Sept. 12. Previous orders amended.

First Lieutenant F. P. Corbin, Jr., from 52d, Ft. Monroe, to Judge Advocate General's Dept., as student, Columbia University.

First Lieutenant J. M. Donohue, from Hawaii, to 13th, Ft. Barrancas.

First Lieutenant J. C. East, from 6th, Ft. Baker, to the Philippines, sailing San Francisco, Jan. 17.

First Lieutenant L. J. Ellert, from Hawaii, to 62d, Ft. Totten.

First Lieutenant J. W. Romlein, from the Philippines, to 52d, Ft. Monroe.

First Lieutenant Peter Schmick, from Hawaii, to 14th, Ft. Worden.

First Lieutenant A. P. Taber, from Panama, to Ordnance Department, Aberdeen Proving Ground. Previous orders revoked.

First Lieutenant B. M. Warfield, from Hawaii, to 69th, Ft. Crockett.

Second Lieutenant J. C. Bane, to Panama, sailing New York, Sept. 27.

Second Lieutenant J. M. Banks, to 2d, Ft. Monroe.

Second Lieutenant W. H. Barnett, to 13th, Ft. Barrancas.

Second Lieutenant R. J. Belardi, to Panama, sailing New York, Sept. 27.

Second Lieutenant D. R. Ross, to Spartan School of Aeronautics, Tulsa Municipal Airport, Tulsa, Okla., Oct. 7.

Second Lieutenant R. W. Boughton, Jr., to 63d, Ft. MacArthur.

Second Lieutenant J. A. Bowman, to 69th, Ft. Crockett.

Second Lieutenant W. D. Chadwick, Jr., to Alabama Inst. of Aeronautics, Inc., Municipal Airport, Tuscaloosa, Alabama, Oct. 7.

Second Lieutenant R. S. Chester, to 13th, Ft. Barrancas.

Second Lieutenant R. deF. Cleverly, to 13th, Ft. Barrancas.

Second Lieutenant J. M. Cochran, to 2d, Ft. Monroe.

Second Lieutenant R. D. Curtin, to 62d, Ft. Totten.

Second Lieutenant J. H. Davis, Jr., to the Philippines, sailing New York, Sept. 12.

Second Lieutenant T. W. Davis, 3d, to Parks Air College, Parks Airport, East St. Louis, Ill., Oct. 7.

Second Lieutenant H. deMetropolis, to 52d, Ft. Hancock.

Second Lieutenant L. B. DeVille, to 69th, Ft. Crockett.

Second Lieutenant W. G. Easton, from Hawaii, to 61st, Ft. Sheridan.

Second Lieutenant G. P. Eaton, to 65th, Ft. Winfield Scott.

Second Lieutenant A. I. Evans, Jr., to Spartan School of Aeronautics, Tulsa Municipal Airport, Tulsa, Okla., Oct. 7.

Second Lieutenant B. S. Evans, Jr., to Hawaii, sailing New York, Nov. 7.

Second Lieutenant S. C. Farris, to Parks Air College, Parks Airport, East St. Louis, Ill., Oct. 7.

Second Lieutenant W. J. Fling, to Parks Air College, Parks Airport, East St. Louis, Ill., Oct. 7.

Second Lieutenant F. H. Foerster, Jr., to

Spartan School of Aeronautics, Tulsa Municipal Airport, Tulsa, Okla., Oct. 7.

Second Lieutenant J. D. Garcia, to Lincoln Airplane and Flying School, Lincoln, Nebr., Oct. 7.

Second Lieutenant R. E. Greer, to Grand Central Flying School, Glendale, California, Oct. 7.

Second Lieutenant J. R. Gifford, to Hawaii, sailing New York, Nov. 7.

Second Lieutenant M. F. Gilchrist, Jr., to 2d, Ft. Monroe.

Second Lieutenant C. J. Hackett, to Parks Air College, Parks Airport, East St. Louis, Ill., Oct. 7.

Second Lieutenant L. W. Hendricks, to Dallas Aviation School and Air College, Love Field, Dallas, Texas, Oct. 7.

Second Lieutenant W. J. Henry, to 62d, Ft. Totten.

Second Lieutenant J. B. Herboth, Jr., to Kelly Field. Previous orders amended.

Second Lieutenant J. O. Herstad, to Panama, sailing San Francisco, Oct. 10.

Second Lieutenant M. J. Hickok, Jr., from 62d, Ft. Totten, to 2d, Ft. Monroe.

Second Lieutenant W. A. Hinternhoff, to 62d, Ft. Totten.

Second Lieutenant R. H. Holloway, to 13th, Ft. Barrancas.

Second Lieutenant S. F. Hudgins, to Spartan School of Aeronautics, Tulsa Municipal Airport, Tulsa, Okla., Oct. 7.

Second Lieutenant R. A. Janowski, to Hawaii, sailing New York, Nov. 7.

Second Lieutenant R. E. Jordan, to Hawaii, sailing New York, Nov. 7.

Second Lieutenant J. J. Kelly, Jr., to 11th, Ft. H. G. Wright.

Second Lieutenant J. P. A. Kelly, from Panama, to 62d, Ft. Totten.

Second Lieutenant J. T. Kingsley, Jr., to Dallas Aviation School and Air College, Love Field, Dallas, Texas, Oct. 7.

Second Lieutenant A. J. Kinney, to Spartan School of Aeronautics, Tulsa Municipal Airport, Tulsa, Okla., Oct. 7.

Second Lieutenant L. M. Kirby, to Panama, sailing Charleston, Sept. 29.

Second Lieutenant M. J. Krisman, to Panama, sailing San Francisco, Oct. 10.

Second Lieutenant Geoffrey Lavell, to 6th, Ft. Winfield Scott.

Second Lieutenant P. H. Lehr, to Chicago School of Aeronautics, Glenview, Ill., Oct. 7.

Second Lieutenant C. D. T. Lennhoff, to 63d, Ft. MacArthur.

Second Lieutenant Carl Lentz, 2d, to Alabama Inst. of Aeronautics, Inc., Municipal Airport, Tuscaloosa, Alabama, Oct. 7.

Second Lieutenant C. J. Long, 3d, to Chicago School of Aeronautics, Glenview, Ill., Oct. 7.

Second Lieutenant J. L. McBride, Jr., to Ryan School of Aeronautics, Ltd., San Diego, California, Oct. 7.

Second Lieutenant N. J. McGowan, to Chicago School of Aeronautics, Glenview, Ill., Oct. 7.

Second Lieutenant S. A. Madison, to 65th, Ft. Winfield Scott.

Second Lieutenant S. J. Mancusco, to 62d, Ft. Totten.

Second Lieutenant E. O. Meals, to Parks

Air College, Parks Airport, East St. Louis, Ill., Oct. 7.

Second Lieutenant C. L. P. Medinnis, to 61st, Ft. Sheridan.

Second Lieutenant M. G. Megica, to 63d, Ft. MacArthur.

Second Lieutenant J. P. Mial, to 69th, Ft. Crockett.

Second Lieutenant R. B. Miller, to Parks Air College, Parks Airport, East St. Louis, Ill., Oct. 7.

Second Lieutenant D. Y. Nanney, to 2d, Ft. Monroe.

Second Lieutenant F. K. Newcomer, Jr., to 2d, Ft. Monroe.

Second Lieutenant D. K. Nickerson, to Spartan School of Aeronautics, Tulsa Municipal Airport, Tulsa, Okla., Oct. 7.

Second Lieutenant H. R. Odom, to 14th, Ft. Worden.

Second Lieutenant J. J. Pavick, to Panama, sailing San Francisco, Oct. 10.

Second Lieutenant J. G. Pickard, to Chicago School of Aeronautics, Glenview, Ill., Oct. 7.

Second Lieutenant W. H. Price, Jr., to 13th, Ft. Barrancas.

Second Lieutenant C. C. Pulliam, to 2d, Ft. Monroe.

Second Lieutenant J. A. Roosa, to 13th, Ft. Barrancas.

Second Lieutenant P. M. Royce, assigned to 61st, Ft. Sheridan. Previous orders amended.

Second Lieutenant J. R. Schrader, Jr., to 62d, Ft. Totten.

Second Lieutenant P. R. Seaver, to Panama, sailing New York, Sept. 27.

Second Lieutenant L. A. Simon, to Hawaii, sailing New York, Nov. 7.

Second Lieutenant H. T. Smith, to 13th, Ft. Barrancas.

Second Lieutenant W. T. Smith, to Chicago School of Aeronautics, Glenview, Ill., Oct. 7.

Second Lieutenant D. R. Snoko, to 6th, Ft. Winfield Scott.

Second Lieutenant W. MacR. Vann, to Panama, sailing Charleston, Sept. 29.

Second Lieutenant J. J. Wald, to 62d, Ft. Totten.

Second Lieutenant J. T. Walker, to Spartan School of Aeronautics, Tulsa Municipal Airport, Tulsa, Okla., Oct. 7.

Second Lieutenant J. W. Walker, to 2d, Ft. Monroe.

Second Lieutenant Heinz Weisemann, to Hawaii, sailing New York, Nov. 7.

Second Lieutenant C. E. White, to 65th, Ft. Winfield Scott.

Second Lieutenant D. K. White, to Ryan School of Aeronautics, Ltd., San Diego, California, Oct. 7.

Second Lieutenant O. E. Wood, to 62d, Ft. Totten.

Second Lieutenant T. P. Wright, to Dallas Aviation School and Air College, Love Field, Dallas, Texas, Oct. 7.

Second Lieutenant P. D. Wynne, Jr., to Alabama Institute of Aeronautics, Inc., Municipal Airport, Tuscaloosa, Alabama, Oct. 7.

Second Lieutenant K. L. Yarnall, to Hawaii, sailing New York, Nov. 7.

Second Lieutenant V. L. Zoller, to Kelly Field. Previous orders amended.



# The Contributors

DOCTOR H. A. DEWEERD, is professor of history at Denison University, Granville, Ohio. In the spare time that he manages to salvage from that job, he is editor of the *Journal of the American Military History Institute*.



MAJOR GENERAL HANSON E. ELY, U. S. Army, retired, has had a forty-year military career that is known to every American soldier. As commander of the 3d Brigade (2d Division) and later of the 5th Division he demonstrated that he was a fighting leader of fighting men. For personally organizing and directing the attack on Vierzy on July 18, 1918, he won the DSC. For demonstrating "rare qualities of leadership"—the words are from the citation—he was later awarded the DSM. General Ely lives at Washington.



WARRANT OFFICER HENRY L. JONES (first mate, Army Mine Planter Service), is a native of California. His experience at sea runs back over thirty years and he has filled every deck post on shipboard ranging from apprentice to master. During the World War he was executive officer of several supply ships and troop transports of the U. S. Navy, relinquishing active duty in 1919 with the rank of lieutenant commander, U.S.N. R.F. After service as chief officer of the Army transports *Antigone* and *President Grant* (now the *Republic*) he was appointed a warrant officer, AMPS, in 1921. Mr. Jones is a graduate of the Seamen's Church Institute of New York and the Nautical School of California. At the moment he is stationed at Fort Monroe.



CAPTAIN ARTHUR B. NICHOLSON, Coast Artillery Corps, is a native of Michigan. Appointed a second lieutenant, Coast Artillery Corps, in 1923, all his subsequent service has been rendered with that arm. He is a graduate of the Coast Artillery School Battery Officers' Course, 1931, and the Air Corps Tactical School, 1939. Captain Nicholson holds the degrees of B.S.E. (C.E.) and M.S.E., University of Michigan, 1932. He is now on duty with the 52d Coast Artillery, Fort Monroe.

MAJOR THOMAS R. PHILLIPS, Coast Artillery Corps, is a prime favorite of JOURNAL readers. This is attested by the fan mail that his contributions inspire. He is stationed at Fort Leavenworth, where he is an instructor in the Department of Tactics, the Command and General Staff School.



FLETCHER PRATT is the well-known New York historian and a frequent contributor to The JOURNAL.



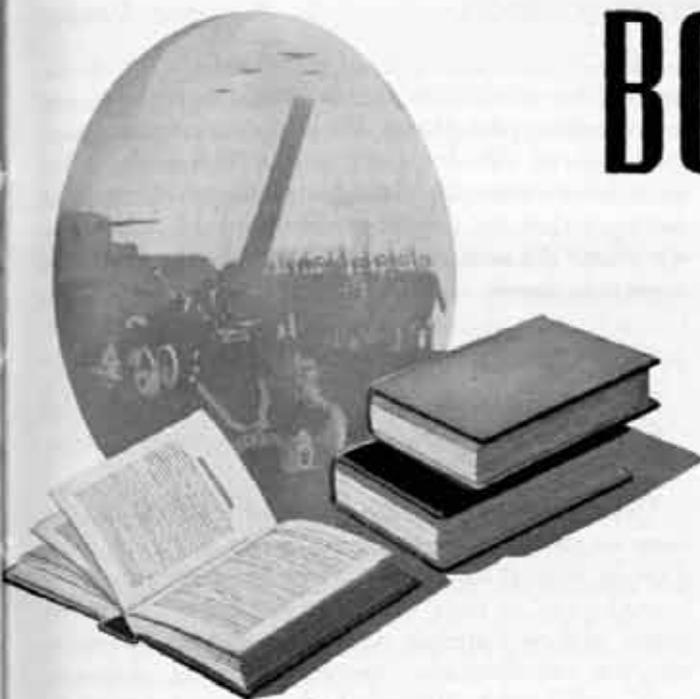
MAJOR GENERAL HENRY ROWAN-ROBINSON, C.B., C.M.G., D.S.O., will be recalled as the author of "Strategy in the Mediterranean" March-April, 1939, COAST ARTILLERY JOURNAL. This well known British soldier and author has written many magazine articles and a number of books that deal with military affairs. His latest book, *Imperial Defence: A Problem in Four Dimensions*, is receiving serious study by those interested in the current wartime problems of Great Britain. General Rowan-Robinson has held the posts of chief artillery instructor and second-in-command The Royal Military Academy, Military Governor of Libau, and Inspector-General of the Iraq Army. Although now on the retired list of the British Army, it is understood that General Rowan-Robinson is engaged in the training of the forces now being formed for the current European War.



COLONEL EARL W. THOMSON, Coast Artillery Corps Reserve commands the 916th Coast Artillery (AA), which has its headquarters at Richmond, Virginia. After service during the World War he has been active in Reserve affairs for the past two decades. He has served active duty periods at Forts Eustis, H. G. Wright, and Monroe, and also at the office, Chief of Coast Artillery. In the recent Manassas maneuvers he served on the staff of the 260th Coast Artillery, District of Columbia National Guard. In civil life Colonel Thomson is Professor of Physics at the United States Naval Academy, Annapolis, Maryland.



# BOOK REVIEWS



**GIBRALTAR AND THE MEDITERRANEAN.** By G. T. Garratt. New York: Coward-McCann, Inc., 1938. 351 Pages; Maps; \$2.50.

The Rock—the great Rock—the ancient symbol of impregnability—is probably impregnable as a fort, but that is all. It can defend itself but can do little else. This is only one of the many Mediterranean facts that Mr. Garratt seems to prove in his excellent book. And it is the chief burden of his history, a most readable account of Gibraltar and the great sea to its east from the time, many centuries ago, when the Rock was named. In 710 A.D. a Persian freedman, Tariq-ibn-Zeid, commander of an army of Berbers, invaded the region of the Rock. Soon it gained the name, *Jebel-Tariq*, which is Moorish for Tariq's Mountain, and time has gradually corrupted this named to Gibraltar.

Today, as Mr. Garratt says writing as a Britisher, "The physical grandeur of the Rock, added to vague memories of sieges and battles, makes it seem the concrete emblem of our power. To millions on the Continent, Gibraltar is the great and rather arrogant symbol of British Imperialism."

It is still a symbol, to be sure, but in reality it is little else than a symbol. Its guns do not by any means fully command the Straits of which it is the guardian. On the African shore now stand stout batteries of German-emplaced coast artillery which have a better sweep of the fifteen-mile-wide passage than the guns of the fort. The functioning of Gibraltar depends, moreover, too much upon the thousands of employees who live outside the fort at night and enter it by day to go to work. The fort may be proofed from bombs, and shelters may be made ready for these people in the town, but can their morale endure through air attacks? Or, worse yet, can it stand

the steady pounding of artillery from the Spanish hills just across the narrow Bay? For the hill-studded semicircular shore just opposite is only 10,000 yards away. A good ten miles of its length lies within this distance so that hundreds if not thousands of good gun positions command the Bay, the naval harbor, the town, and the fort itself at a range of 12,000 yards or less.

It may be possible, of course, to capture this vital area across the Bay and thus deny it to an enemy, but any sortie to accomplish this is liable to encounter, against a stout enemy, difficulties comparable to those of Gallipoli. It is not a job that can be done out of hand by a couple of battalions. It would take thousands of troops to get that ground and hold it against a vigorous opposition. And there is one other weakness—Gibraltar has no suitable ground for an airdrome and the nearest Spanish field is not five minutes' flight away.

But the Rock itself, Mr. Garratt thinks, can probably hold out against any attack simply as a fortress. It could also "to some extent . . . be used as a submarine base, and could cooperate with the Atlantic fleet to make the Straits impassable for enemy surface ships. The Spanish civil population would have to be expelled, and most of the remainder expatriated."

The Rock should be held for these uses, he believes, and though its continued occupation by Britain is especially offensive to a new and military Spain, no consideration can be given now to surrendering it to the nation from whose ground it rises. "Great Britain," he writes, "cannot merely look on the future of Gibraltar as a matter of strategy. Even if the key of the Mediterranean will hardly turn the lock, we should be at some pains to choose our successor. There have been, at various times in our occupation of the Rock, good and valid arguments for restoring Gibraltar to Spain, but there are none for surrendering it under duress to be controlled by some other non-Spanish power."

Mr. Garratt also suggests, in considering the whole problem of the inland sea, that Britain defend Malta like Gibraltar, defend Cyprus as an air and naval base, defend the Suez Canal area, withdraw all heavy warships from the Mediterranean, and operate upon that sea only with light types of ships. During the World War the few submarines of the Central Powers that operated in the Mediterranean did tremendous damage. A single U-boat "sank 500,000 tons of shipping including 2 war vessels, 5 troop-ships, 125 steamers, and 62 sailing boats." In all, nearly half of the ships lost by the Allies were sunk in the Mediterranean Sea, and by a very few hostile ships. For this reason, if for no other, it will be best for Britain to withdraw her major ships.

# Attend the CONVENTION!

On page 460 you will find further information concerning the plans for the convention of the United States Coast Artillery Association to be held at New York City, October 12, 13, 14, 15, 1939.

Not only will you have the opportunity of renewing old friendships but you will also see the World's Fair. Sunday, October 15, is Coast Artillery Day at the Fair with a special program devoted to our arm.

You won't want to miss these three days crammed with events. Let us know now if you plan to attend. Even if your plans are only tentative, we'd like to know about them. Full information on hotels, rates, and amusements will be sent you by the Hospitality Committee of which Captain Frank Coleman is chairman.

*Please fill out the blank below and mail it NOW.*

CAPTAIN FRANK COLEMAN,  
Chairman, Hospitality Committee,  
7040 Colonial Road,  
Brooklyn, New York.

I plan to attend the Convention of the United States Coast Artillery Association at New York, October 13, 14, 15, 1939. There will be (....) people in my party.

Please send information concerning hotels, rates, and activities.

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Mr. Garratt is one of those few British writers of the modern day whose souls are not bound by tradition and who therefore speak plainly. He writes most amusingly of those parts of Gibraltar's history that furnish matter for amusement—there are a number of them. His style of writing is clear and crisp of phrase—his book reads without effort. As another reviewer has said, Mr. Garratt is a writer to watch.

G. V.

/ / /

STRATEGIC MINERAL SUPPLIES. By Major G. A. Roush, Specialist Reserve. New York: McGraw-Hill Book Company, 1939. 485 Pages; Charts; Tables; Index. \$5.00.

This book is probably the last word for some time to come on the status of the United States as regards those strategic mineral materials of which our domestic supply is inadequate to meet the demands of war. There are twelve of these materials: manganese, nickel, chromium, tungsten, tin, aluminum, antimony, mercury, platinum, mica, iodine, and nitrogen. Each item is exhaustively treated from a standpoint of use, substitutes, reserves, domestic output, supply, prices, and the thousand and one other factors that affect the mineral sinews of war.

Major Roush has been actively interested in the field of mineral production for twenty-five years. He is editor of *The Mineral Industry* and has for years been in constant contact with production and consumption data from all over the world. He has received periodic details to active duty as a lecturer on strategic minerals before the Army Industrial College, and has also served on specialized assignments in the Office of the Assistant Secretary of War.

While *Strategic Mineral Supplies* is no book to be lightly skimmed it certainly has a place on the shelves of the thoughtful soldier. Moreover, no military library that calls itself complete can be without it.

/ / /

THE RISE AND FALL OF THE CONFEDERATE GOVERNMENT. By Jefferson Davis. (United Daughters of the Confederacy Memorial Edition.) Richmond: Garrett & Massie, Inc., 1938. Two volumes, 604-675 Pages. Illustrated. Maps. \$7.50.

More than ten years after the close of the Civil War, Jefferson Davis undertook this work, completing it mainly between the years 1877 and 1881. His object was, in his own words, "from historical data to show that the Southern States had rightfully the power to withdraw from a Union into which they had, as sovereign communities voluntarily entered; that the denial of that right was a violation of the spirit and letter of the compact between the States; and that the war waged by the Federal Government against the seceding States was in disregard of the limitations of the Constitution, and destructive of the principles of the Declaration of Independence." General Robert E. Lee advised Mr. Davis to omit, in writing his book, "all epithets or remarks calculated to excite bitterness or animosity between the different sections of the

country." It would have been a better book, as it has often been said, if this advice had been taken. But Jeff Davis, upright though he was, was not the gentle-spirited Lee; and there is much to be said for Mr. Davis's comment on his own book, made after its publication: "The other side has written and is writing their statement of the case. We wish to present ours also, that the future historian by considering both may deduce the unbiased statement which no contemporary could make. . . . I would distrust the man who served the Confederate cause and was capable of giving a disinterested account of it. . . . We want our side of the war so fully and exactly stated, that the men who come after us may compare and do justice in the case."

There is much, however, in these two volumes that is not pure controversy and that is of interest to the military student of the Civil War. Jeff Davis was not only the President of the Confederacy but also the commander-in-chief of its fighting army, and an active one. Hence this work is a primary source book.

Unfortunately, Mr. Davis keeps his part in military affairs somewhat in the background. The book has yet to be written that shows clearly his full influence in directing his generals in their campaigns.

*The Rise and Fall of the Confederate Government*, dedicated by its author to the women of the Confederacy, has long been out of print. The Daughters of the Confederacy have done history a genuine service in issuing this memorial edition. Garrett & Massie, who print *The COAST ARTILLERY JOURNAL*, have done fine work on this historically important reprint, both in printing and binding. The binding is in Confederate gray. T. J. L.

SO YOU'RE GOING TO BUY A BOAT. By H. A. Calahan. New York: The Macmillan Company, 1939. 269 pages; 29 illustrations, charts and designs; glossary; \$3.00.

Now boat owners will realize why boats do as they do—or rather, don't do as they should do. Moreover, prospective boat owners now have no excuse for not getting the best. And the best, says Mr. Calahan, must have stability, speed, sea-kindliness, good behavior and character. But, as he points out: "it is impossible to have all desirable characteristics in one boat, and they must exist only in the correct proportions."

The motorboat owner will complain that the book is devoted almost exclusively to sailboats; and the novice that the lack of enough diagrams makes some explanations difficult to understand. Although there is little on maintenance, there is much on yacht brokers, yards and purchase. Added to Calahan's other books, *Learning to Sail* and *The Ship's Husband*, this last will make a complete yachting library for seasoned yachtsman and novice as well. It is technical enough to be of value, but is toned down to make interesting reading. H. H. L.

## COAST ARTILLERY RING



The Coast Artillery Association has approved this ring, but it may be worn by any Coast Artilleryman, whether or not he is a member of the Association. The design, as shown in the illustration, has been worked out with great care. The other side is equally attractive, depicting a fort and the shield of the United States superimposed on a crossed saber and rifle above the letters U.S.A.

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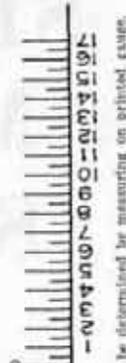
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An account  
of America's  
mineral shortages  
and what they  
mean in war



With lack of strategic materials leading to war, and with war making the lack more pronounced, we become enmeshed in a vicious cycle that has furnished ample reason for the increased interest in the subject of strategic mineral supplies in the United States as well as in other countries. Now, for the first time, the important subject is authoritatively discussed in this book.

"On the whole, the total United States imports of mineral origin in 1937 constituted about one-sixth of the total value of all imports but of this one-sixth more than 40 per cent was in the strategic group, and more than 20 per cent in the one metal tin. This illustrates rather pointedly the exaggerated importance of this small group of a dozen materials, and explains to some extent their indispensable character in our present-day industrial life."

# STRATEGIC MINERAL SUPPLIES

By G. A. ROUSH

Major, Staff Specialist Reserve, U. S. Army

473 pages, 6 x 9, \$5.00

This book presents for the benefit of all those interested a general survey of the more important strategic mineral commodities—those of which the domestic output is inadequate to meet the demand, forcing extensive dependence on imports from foreign sources.

In order to present to the reader a picture of the past, present and future status of these materials in everyday life, *Strategic Mineral Supplies* discusses each member of the group in some detail, covering such basic items as uses, substitutes, ore reserves, sources of supply (both domestic and foreign), imports, exports, stocks, tariff, and political and commercial control, as they affect the domestic situation.

The Coast Artillery Journal

1115 17th Street, N.W.

Washington, D. C.

STANDARD SEAMANSHIP FOR THE MERCHANT SERVICE. By Felix Riesenbergh. New York: D. Van Nostrand Company, Inc. 940 Pages; 350 Illustrations and Sketches; Index. \$7.50.

This new book on the sailor's art is an excellent adjunct to Admiral Knight's *Modern Seamanship* which is the accepted treatise on seamanship.

*Standard Seamanship for the Merchant Service* not only solves most of the problems that confront the deck warrant officer, Army Mine Planter Service, but it also covers many of the subjects required by the Steamboat Inspection Service.

Riesenbergh's book will be of value to the enlisted men who are being trained and prepared to take the examination for warrant officer, AMPS. The book should also be of assistance to those deck warrant officers who are preparing for examinations for increase in grade of license.

H. L. J.

THE THIRTY YEARS WAR. By C. V. Wedgwood. New Haven: Yale University Press, 1939. 545 pages. \$4.50.

This work supplies a long-felt need for an adequate one-volume history of the Thirty Years War in English. Its publication was made possible through the William McKean Brown Memorial Fund. The book is based upon careful research necessarily carried on in several languages and is admirably documented. Though the political developments of this tangled period tend to overshadow the purely military history of the war, Mr. Wedgwood has wisely allowed his important military personages to stand forth. There are interesting sketches of Gustavus Adolphus, Christian IV, Bernard of Saxe-Weimar, Tilly, Wallenstein, Pappenheim, Mansfeld, Cordoba, and others.

The military reader will regret that greater consideration could not be given to the make-up and organization of the mercenary armies, to the conduct of campaigns, and to the weapons and tactics of the period. The devastating effects of the prolonged war on German life is made clear, but the author discounts the earlier exaggerated accounts of losses suffered by soldiers and civilians. In some cities, through timely changes of political and religious front, these were piping times of trade in army supplies. To some military and political critics, it appears that the period of the Thirty Years War with its fanatical war of religious creeds, kept alive by periods of foreign intervention, may be paralleled in the future by a struggle of equal intensity and fanaticism in Europe between hostile political creeds—a struggle which may be in a like measure prolonged by intervention of foreign powers. The poor depressed people of central Europe found it exceedingly difficult to arrange a peace, even after the belligerents were exhausted, and after agreement had been reached on many points of difference—simply because of the complex interests of the foreign powers. This fact seems to contain a lesson and a warning.

H. A. D.

GENERAL WASHINGTON'S SPIES ON LONG ISLAND AND IN NEW YORK. By Morton Pennypacker. Brooklyn, New York: Long Island Historical Society, 1939. 302 Pages. \$3.50.

In a book somewhat clumsily put together, Mr. Pennypacker has made available to the general reader many deeply interesting letters and documents that show how Washington's spy service gathered and delivered intelligence for the Continental service. The author includes the old stories of Nathan Hale and John André, with new material on André. But of most interest to the modern military reader is his extensively documented account of the two Culpers, Culper Senior and Culper Junior.

The Culpers were two of General Washington's most efficient G-2 experts. They stayed in New York during the years the British held it, kept their ears cocked and their eyes wide open, and every so often dispatched their reports, usually written in secret ink, by secret messenger to the American commander in chief. But after the war was over, neither Culper Senior nor Culper Junior ever came forward to claim credit or glory. Both died without becoming garrulous of their Revolutionary exploits. And apparently the few others who knew their identities also passed to their final rewards respecting the silence of the Culpers.

Mr. Pennypacker tells how only recently it was discovered who these patriots were, though many had sought, in the course of a century and a half, to clear the mystery away, especially with regard to Culper Junior. Certain historians of the Revolution had guessed aright concerning Culper Senior. It was finally established through an accidental comparison of handwriting that these active patriots were two prominent men, well known in local history by their right names.

Notwithstanding the author's excursions into Long Island genealogy, his book will make fascinating reading to all who are interested in military intelligence, to all whose favorite period of American history is the Revolution, and especially to all who remember the exciting story that James Fenimore Cooper told in *The Spy*.

G. V.

† † †

LIFE OF AN IRISH SOLDIER: Reminiscences of General Sir Alexander Godley, G.C.B., K.C.M.G. London: John Murray, 1939. 345 Pages; Maps; Illustrated; \$3.75.

This is the account of one life, a long one and a soldierly one. But in the writing the soldierly part is often skimmed while the training and use of horses by an infantryman is chatted about. Certain of our infantry will delight in this. One learns of people who entertained, visited, and who were met in games, but far too little of the British Army. This last is all too sketchy, even though the Boer War is talked about by a participant.

There is something grimly humorous in calling the author an Irish soldier. He is a British soldier; that is about all. He ignores the Irish Revolution about which he

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# ESSAY COMPETITION 1940

## a. PERMISSIBLE COMPETITORS:

Any member of the Coast Artillery Association at date of submission of essay.

## b. SUBJECT:

To be selected by the author. Appropriateness of subject for Coast Artillery readers is a point to be considered in awarding prize.

## c. PRIZES:

### (1) Number:

(a) One First Prize—\$200.00. Not to be awarded if no essay submitted is outstanding.

(b) Not to exceed two Honorable Mention Prizes—\$100.00 each.

(2) Awarded by Chief of Coast Artillery upon recommendation of Board of Officers appointed by him. Membership of Committee to be published only after awards for the year have been made.

### (3) Time limit.

No essay received after September 30th, 1940, will be awarded a prize.

### (4) Payments.

Payments of prizes will be made immediately after awards are made. All essays submitted become the property of the COAST ARTILLERY JOURNAL. Any person receiving a prize for an essay will receive no other compensation. If any essay is published the author of which received no prize, such author will be paid at the usual rates.

## d. HOW SUBMITTED:

Essays will be submitted to the Editor of the COAST ARTILLERY JOURNAL in a sealed envelope bearing the notation "Prize Essay Contest." The copy submitted will contain nothing to indicate its authorship, will be signed by a "nom de plume," and will be accompanied by a separate sealed envelope containing the nom de plume and also the name of the writer. This latter envelope will be delivered to the Chief of Coast Artillery when received and will be opened in the presence of the Editor of the COAST ARTILLERY JOURNAL after the relative merits of the essays have been determined.

## e. FORM:

(1) Essays should be limited to approximately 8,000 words, but shorter articles will receive consideration.

(2) Three typewritten copies of each essay will be submitted on letter size paper (one original, two carbons) with double-spaced lines. At least one of any illustration will be a drawing, tracing, or photograph, not a blue print or brown print.

First Prize .....\$200.00

Honorable Mention Prizes . . 100.00

says little, except that it could have been won in the last few weeks by the British Army. An Irish soldier of the old school might have cast some light on this tragic affair, but the author passes over it all. Yet he is deeply mortified because he must enter Ireland in disguise. He must not wear a uniform! Yet the war could be ended in two weeks!

But if anyone wishes to know how a British officer moved from place to place, the people he meets, the hunts he rides to, the hunting that is done, the social affairs that are attended, the trips that were made, the positions that are held, then this is a proper book.

Actually, this is a picture of officer training and officer life in the old-time British Army. Lloyd George's story in his book of what that army produced and how he wished to appoint a World War British commander from another source is significant. There is something to think about there.

S. H. O.

✓ ✓ ✓

A SHORT OUTLINE OF MODERN TACTICS. By Brigadier A. B. Beauman, British Army. London: Hugh Rees, Ltd., 1939. 63 Pages. \$1.50.

Brigadier Beauman covers his subject concisely without dodging a single modern issue of warfare. In his foreword he writes: "It requires a certain amount of courage to write about tactics, for two reasons. The first is that judging by past experience all writers on tactics, both official and unofficial, have invariably been proved wrong in their deductions by the course of ensuing campaigns. The second is that in these days of bewilderingly rapid changes in organization and doctrine, any work is liable to become out of date between the time that it is written and the time that it is published."

Just the same, the author barges right ahead into discussion of air, chemical, and mechanized war and never forgets for a moment their effect on tactics. Though brief, this book is a bit on the solid side as to style. G. V.

✓ ✓ ✓

EUROPE—GOING, GOING, GONE! by Count Ferdinand Czernin. New York: The Greystone Press, 1939. 324 Pages; Illustrations; Tables.

The first manuscript of this book went up in smoke the day that Hitler entered Austria, and its author found himself an exile. In the light of new happenings he re-wrote his volume to tell us something of today's Europe: its history, national attributes, personalities, and the events current before September 3d.

Count Czernin is a light-hearted cynic, but one can detect a vein of seriousness beneath the outer surface of drollery. The flippant approach to "ideals" and "ideas" may appear labored at times but is perhaps the best method of dealing with a cracking civilization. And then again, the fact that one European still retains a sense of humor and the ability to jest as his world topples may be a hopeful sign for the future, despite the roar of bombers.

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Peirce, G. F.  
Johnson, W. L.

1ST LIEUTENANTS  
Moore, R. W.  
Spurgin, W. F.  
Buynoski, A. S.

2D LIEUTENANTS  
Scott, J. A., Jr.  
Hawke, J. W.

Michelet, H. E.  
Pattison, J. B., Jr.

Fort Randolph, C. Z.

LIEUTENANT COLONEL  
French, A. J.

MAJORS  
Gover, A. W.  
Archibald, H. G.

CAPTAINS  
Goodall, J. W.  
Gettys, C. W.

1ST LIEUTENANTS  
Harris, W. H.  
Adams, G. N.

2D LIEUTENANTS  
Nelson, J. G.  
George, M. S.  
Seff, A.

2d COAST ARTIL-  
LERY  
Fort Monroe

COLONEL  
Hardaway, F. P.

LIEUTENANT COLONEL  
French, P. H.

MAJORS  
Goepfert, L. W.  
Atkinson, C. E.  
Kerr, C.

CAPTAINS  
Ross, L. G.  
Tischbein, C. F.  
Reterson, J. E.  
Keeler, G. E., Jr.  
Parks, H. C.  
Wahle, C. B.  
Hincke, J. I.  
Martin, E. G.  
Ward, E. R. C.

1ST LIEUTENANTS  
Fuller, A. L., Jr.  
Cooper, H. B., Jr.  
Ebel, H. W.  
Matteson, R. L.  
Hackman, E. E.  
Stevens, J. DuV.

2D LIEUTENANTS  
Hickok, M. J., Jr.  
Banks, J. McM.  
Walker, J. W.  
Wood, J. E., Jr.  
Luczak, B. R.  
Cornwall, P. R.  
Vann, W. MacR.

3d COAST ARTIL-  
LERY  
Fort MacArthur, Calif.

LIEUTENANT COLONEL  
Mead, E. C.

MAJOR  
Snell, V. C.

CAPTAIN  
Tucker, G. A.

1ST LIEUTENANT  
Twyman, J. H., Jr.

Fort Rosecrans, Calif.

COLONEL  
Guthrie, R. E.

MAJOR  
Jacobs, J. P.

CAPTAIN  
Parr, W. H.

Fort Stevens, Ore.

COLONEL  
Thompson, E. H.

MAJORS  
Lofquist, F.  
Chambers, A. K.

CAPTAINS  
Gregory, P. T.  
Shaw, L. E.

1ST LIEUTENANT  
Passarella, P. F.

4th COAST ARTIL-  
LERY  
Fort Amador, C. Z.

COLONEL  
Putney, E. W.

LIEUTENANT COLONELS  
Small, H. E.  
Chapin, W. M.  
Chipman, A. D.

MAJORS  
Barnes, H. C., Jr.  
O'Connell, G. M.  
Stiley, J. F.  
Hayden, J. L.

CAPTAINS  
Davis, J. W.  
Nichols, G. P.

Dwyer, J. W.  
Harwell, M. H.  
Barker, W. L.  
Henning, W. H.  
Bullene, L. E.  
Sturman, J. F., Jr.

1ST LIEUTENANTS  
Robbins, A. D.  
Bogart, P. A.  
Liwski, P. A.  
McPoely, H. G.  
Lockhart, E. E.  
Green, C. E.

2D LIEUTENANTS  
Fitzgerald, R. H.  
Hallinger, E. E.  
DeBill, W. C.  
Cherubin, S. J.

5th COAST ARTIL-  
LERY  
Fort Hamilton, N. Y.

MAJORS  
Barrows, E. R.  
Lowder, J. R.

6th COAST ARTIL-  
LERY  
Fort Winfield Scott,  
Calif.

COLONEL  
Terry, T. A.

LIEUTENANT COLONEL  
Davis, H. C., Jr.

MAJORS  
Whittaker, L. A.  
Crowell, E. R.

CAPTAINS  
Myrah, H. H.  
Haakensen, N. T.  
Bain, J. G.  
Engelhart, E. C.  
Carcy, G. R.  
McKinney, M. J.  
Kleinman, E. A.  
Simmons, J. F.

1ST LIEUTENANTS  
McReynolds, S. McF., Jr.  
Moorman, R. R.  
Gilman, S. I.  
East, J. C.

2D LIEUTENANTS  
Brown, B. R.  
Snoko, D. R.  
Johnson, H. O.

7th COAST ARTIL-  
LERY  
Fort Hancock, N. J.

COLONEL  
Wilford, F. E.

MAJOR  
Hennessy, H. P.  
Rhein, W. W.

|   |   |  |   |   |  |
|---|---|--|---|---|--|
| CAPTAIN<br>Gilbert, O. H.<br>Fort DuPont, Del.  | 1ST LIEUTENANTS<br>Rude, W. A.<br>Pirani, J. S.<br>Powell, C. W.  | 2D LIEUTENANTS<br>Shive, D. W.<br>O'Malley, C. S., Jr.<br>Eubank, P. H.<br>Weinzig, A. J.    | 1ST LIEUTENANTS<br>Persons, H. P., Jr.<br>Ellert, L. J.<br>Dunohue, J. M.   | MAJOR<br>Lutes, LeR.  | Krueger, R. H.<br>White, T. B.<br>Pohl, M. G.<br>Dayharsh, T. J.<br>Young, G. E.   |
| LIEUTENANT COLONEL<br>Hutson, J. C.   | 2D LIEUTENANTS<br>Price, Wm. H., Jr.<br>Smith, H. T.<br>Barnett, Wm. H.<br>Roosa, J. A.<br>MacDonald, A. F. | 41st COAST ARTIL-<br>LEBY<br>Fort Kamehameha, T. H.  | 59th COAST ARTIL-<br>LEBY<br>Fort Mills, P. I.  | CAPTAINS<br>Willard, S. E.<br>Ericson, R. A.<br>Shunk, P. W.<br>Hatch, M. A.<br>Brusher, H. A.  | 1ST LIEUTENANT<br>Donnelly, H. C.  |
| CAPTAIN<br>Harris, P. A.<br>8th COAST ARTIL-<br>LEBY<br>Fort Ereble, Maine  | Key West, Fla.  | MAJOR<br>Lawrence, A. M.   | COLONEL<br>Glassburn, R. P.   | 1ST LIEUTENANTS<br>Routh, D. B.<br>Cassavant, A. F.<br>(D.S., Fort Mon-<br>mouth, N. J.)  | 2D LIEUTENANTS<br>Moomaw, O. A.<br>Madison, S. A.<br>White, C. E.<br>Olom, H. H.<br>Eaton, G. P.   |
| COLONEL<br>Schrader, O. H.  | LIEUTENANT COLONEL<br>MacMullen, J. D.  | MAJOR<br>Putnam, W. F.   | MAJORS<br>McBride, R. W.<br>Thompson, L. H.   | Drake, L. R.<br>Cory, I. W.<br>Ashman, A.<br>Skinrod, X. A.   | 69th COAST ARTIL-<br>LEBY (1st Battalion)<br>Puerto Rico   |
| MAJORS<br>Hudgins, L. A.<br>Imperatori, R. J.   | MAJOR<br>Dunn, G. W., Jr.   | Fort Moultrie, S. C.   | 51st COAST ARTIL-<br>LEBY<br>Puerto Rico  | 2D LIEUTENANTS<br>Gilchrist, M. F., Jr.<br>Newcomer, F. K., Jr.<br>Curtin, R. D.<br>Henry, Wm. J.<br>Wood, O. E.<br>Mancuso, S. J.<br>Wald, J. J.<br>Schrader, J. R., Jr.<br>Hinterhoff, Wm. A. | LIEUTENANT COLONEL<br>Pitz, O. G.  |
| CAPTAIN<br>Palmer, G. W.  | COLONEL<br>Gage, P. S.  | MAJOR<br>Cordero, M.   | LIEUTENANT COLONEL<br>Flanigan, B. L.   | (D.S. Hq. Phil. Dept.)  | MAJOR<br>Conway, E. T.   |
| 1ST LIEUTENANT<br>MacLachlan, C. L.   | Fort Crockett, Texas  | MAJOR<br>Cordero, M.   | MAJOR<br>Cordero, M.  | 1ST LIEUTENANTS<br>Lazar, A. M.<br>Yost, J. B.<br>Jordan, W. H.<br>Lind, H. D.  | CAPTAINS<br>Crim, C. H.<br>Merkle, E. A.<br>McKee, W. F.<br>Mortimer, J. E.  |
| 9th COAST ARTIL-<br>LEBY<br>Fort Banks, Mass.   | LIEUTENANT COLONEL<br>Dawson, C. A. W.  | CAPTAINS<br>Burgess, G. R.<br>Grinder, R. H.<br>Peddicord, E. D.                             | 2D LIEUTENANTS<br>Gerlich, F. J.<br>Holmes, J. R.<br>Hauck, H. H.<br>Guhik, J. McM.<br>Leist, G. F.<br>McLain, E. W.<br>Conigharo, J.               | 63d COAST ARTIL-<br>LEBY<br>Fort MacArthur, Calif.  | 1ST LIEUTENANTS<br>Totten, R.<br>Schweidel, K. R.<br>Turner, H. F.<br>Steele, P.<br>Chapman, E. A.<br>Voehl, W. E. H.  |
| COLONEL<br>Hickok, M. J.  | MAJOR<br>Powers, J. D.  | CAPTAIN<br>Dodgson, F. B. Jr.  | 1ST LIEUTENANTS<br>Simons, M. M.<br>Taylor, E. O.<br>Fritz, Wm. G.  | COLONEL<br>Stockton, E. A., Jr.   | CAPTAINS<br>Tomlin, R. F.<br>Francis, W. H.<br>Seward, J. R.   |
| LIEUTENANT COLONEL<br>Dennis, E. B.   | MAJOR<br>Cassard, H. DeV.   | 14th COAST ARTIL-<br>LEBY<br>Fort Worden, Wash.  | 2D LIEUTENANTS<br>Marshall, O. K., Jr.<br>Snow, J. R.<br>Husser, Wm. J. A.<br>Reeves, C. W.   | CAPTAINS<br>Wilson, N. B.<br>Tabbs, H. S.<br>Gallagher, R. E.   | 2D LIEUTENANTS<br>DeVille, L. B.<br>Bowman, J. A.<br>Mial, J. P.<br>Kirby, L. M.<br>Ludeman, R. F.<br>Smith, C. O.   |
| CAPTAINS<br>Cordell, B. E.<br>Congdon, N. A.  | 10th COAST ARTIL-<br>LEBY<br>Fort Adams, R. I.  | LIEUTENANT COLONEL<br>Engelhart, A. F.   | 52d COAST ARTIL-<br>LEBY<br>Fort Hancock, N. J.   | COLONEL<br>Koenig, W. C.  | Fort Crockett, Texas   |
| MAJOR<br>Jolls, E. P.   | MAJORS<br>Cook, F. W.<br>Clayton, L. L.<br>Bell, C. O.<br>Myers, C. M.                                      | CAPTAINS<br>Larison, D. D.<br>Gurley, F. K.<br>Vickers, L. T.<br>McGraw, J. E.               | LIEUTENANT COLONEL<br>Sinclair, J. L.   | MAJORS<br>Ausmus, D.<br>Marquet, W. F.<br>(D.S. Hq. Phil. Dept.)<br>Gibbreth, Joseph H.<br>Jones, A. W.<br>Amoroso, A. D.   | COLONEL<br>Longino, O. H.  |
| CAPTAINS<br>Cordell, B. E.<br>Congdon, N. A.  | 11th COAST ARTIL-<br>LEBY<br>Fort H. G. Wright, N. Y.   | 15th COAST ARTIL-<br>LEBY<br>Fort Kamehameha, T. H.  | MAJOR<br>deCamp, J. T.  | CAPTAINS<br>Carlisle, W. H.<br>Goff, J. L.<br>Jaccard, P. A.<br>Woods, F. J.<br>England, J. M.<br>Ford, G. A.<br>McGehean, C. W.<br>Woodbury, K. J.   | CAPTAINS<br>Partin, C. L.<br>Benz, H. T.   |
| MAJOR<br>Kimm, V. M.<br>Nelson, O. A.   | 1ST LIEUTENANT<br>Odenweller, C. J., Jr.<br>Fort Rodman, Mass.  | 1ST LIEUTENANTS<br>Ashworth, E. T.<br>Fairchild, F. H.<br>Berg, F. T.<br>Hoffman, T. F.      | CAPTAINS<br>Carlisle, W. H.<br>Goff, J. L.<br>Jaccard, P. A.<br>Woods, F. J.<br>England, J. M.<br>Ford, G. A.<br>McGehean, C. W.<br>Woodbury, K. J. | 64th COAST ARTIL-<br>LEBY<br>Fort Shafter, T. H.  | 1ST LIEUTENANTS<br>Williams, R. L., Jr.<br>Zeller, F. J.   |
| 1ST LIEUTENANT<br>Branham, C. N.  | 11th COAST ARTIL-<br>LEBY<br>Fort H. G. Wright, N. Y.   | 15th COAST ARTIL-<br>LEBY<br>Fort Kamehameha, T. H.  | 1ST LIEUTENANTS<br>Julian, H.<br>Beazley, L. K.<br>Sutherland, A. J.<br>Cordes, C. F., Jr.  | COLONEL<br>Wing, C. K.  | 91st COAST ARTIL-<br>LEBY<br>Fort Mills, P. I.   |
| COLONEL<br>Jones, T. H.   | LIEUTENANT COLONEL<br>Hill, I. B.   | LIEUTENANT COLONEL<br>VanVolkenburgh, R. H.  | 2D LIEUTENANTS<br>deMetropolis, H.<br>Heasty, C. F., Jr.<br>White, A. B.  | LIEUTENANT COLONEL<br>Gallagher, F. F.  | COLONEL<br>Shippam, W.   |
| MAJORS<br>Chesledon, A. C.<br>Stephens, J. C.<br>Schmidt, V. G.   | MAJORS<br>VanBuskirk, R. J.<br>Ladd, R. V.<br>White, L. A.  | MAJORS<br>VanBuskirk, R. J.<br>Ladd, R. V.<br>White, L. A.                                   | Fort Monroe   | MAJORS<br>Whipple, H. B.<br>Mattern, R. H.<br>Dice, J. B. F.<br>Rothwell, F. G.<br>Hiddleston, E. W.  | MAJOR<br>Lohmann, LeR.<br>Foster, V. P.  |
| CAPTAINS<br>Moore, J. M.<br>Dunham, C. E.<br>Ostenberg, F. T.<br>Gard, H. P.<br>Barber, J. T.<br>Samuels, A. Jr.                        | CAPTAINS<br>Henn, J. S.<br>Anderson, G.<br>Walbridge, V.<br>Ellis, H. P.                                    | CAPTAINS<br>Henn, J. S.<br>Anderson, G.<br>Walbridge, V.<br>Ellis, H. P.                     | MAJOR<br>Chamberlin, F. R., Jr.<br>(S.D.C.A. Board)   | 2D LIEUTENANTS<br>Ivy, R. G.<br>Baldwin, L. C.<br>Glade, K.<br>Shiley, E. M.<br>Abston, A. A.<br>Ames, G. R.  | CAPTAINS<br>Johnson, J. J.<br>Meyers, H. F.<br>Heaney, G. F., Jr.<br>Rothgeb, P. C. (PS)<br>Glasgow, R. I.<br>Forman, O. T.<br>Day, F. E.<br>Turibull, H. T.<br>Frederick, R. T. |
| 1ST LIEUTENANTS<br>Logan, W. B.<br>Lipscomb, L., Jr.<br>McGoldrick, F. M.<br>Weitzel, G. J.<br>Wolfe, Y. H.                             | 2D LIEUTENANTS<br>Clark, M. H.<br>Lee, E. M.<br>Nejer, T. D.<br>Bailey, W. W.<br>Hall, L. A.                | 2D LIEUTENANTS<br>Clark, M. H.<br>Lee, E. M.<br>Nejer, T. D.<br>Bailey, W. W.<br>Hall, L. A. | CAPTAIN<br>Nicholson, A. B.   | 51st COAST ARTIL-<br>LEBY<br>Fort Williams, Maine   | 1ST LIEUTENANTS<br>Metz, T. McG.<br>Russell, M. R.<br>D'Arezzo, A. J.<br>Rosenstock, E. S.<br>Davis, P. C.<br>Byrne, J. S.   |
| 13th COAST ARTIL-<br>LEBY<br>Fort Barrancas, Fla.   | 16th COAST ARTIL-<br>LEBY<br>Fort Ruger, T. H.  | 16th COAST ARTIL-<br>LEBY<br>Fort Ruger, T. H.   | MAJOR<br>Harris, C. S.  | LIEUTENANT COLONEL<br>Homer, J. L.  | 92d COAST ARTIL-<br>LEBY<br>Fort Mills, P. I.  |
| LIEUTENANT COLONEL<br>Allen, H. C.  | COLONEL<br>Frazer, W. D.  | COLONEL<br>Frazer, W. D.   | CAPTAINS<br>Schmidt, G.<br>Shutt, L. O.<br>Brady, W. I.   | MAJOR<br>Harris, C. S.  | LIEUTENANT COLONEL<br>Crawford, J. B.<br>Martin, J. B.   |
| MAJOR<br>Sweet, W. H.   | MAJORS<br>Blaney, G.<br>Bailey, B. C.<br>Dutton, D. L.<br>McCormick, W. L.<br>Ulmo, H. W.                   | MAJORS<br>Blaney, G.<br>Bailey, B. C.<br>Dutton, D. L.<br>McCormick, W. L.<br>Ulmo, H. W.    | 2D LIEUTENANTS<br>Underwood, G. V., Sr.<br>Stoely, O. B.<br>Corway, W. C.<br>Kopcsak, A. A.   | LIEUTENANT COLONEL<br>Homer, J. L.  | MAJOR<br>Bray, Wm. C.  |
| CAPTAINS<br>Gunn, C. O.<br>Shumate, J. P.<br>French, F. J.<br>Vestai, W. M.<br>Barnett, J. R.<br>Niethamer, W. F.<br>Featherston, J. H. | CAPTAINS<br>Herron, D. B.<br>Franklin, A. G., Jr.   | CAPTAINS<br>Herron, D. B.<br>Franklin, A. G., Jr.  | Fort Ruger, T. H.   | 1ST LIEUTENANTS<br>Griffin, W. E.<br>Anderson, R. L.<br>Morrow, S. H.<br>Gill, B. D.<br>Briggs, K. M.   | CAPTAINS<br>Harry, J.<br>Kyster, O. H., Jr.<br>Santos, M. M. (PS)<br>Olivares, J. E. (PS)  |
|   | 1ST LIEUTENANTS<br>Darragh, J. T.<br>Alexander, D. S.<br>Coit, W. S.<br>Warfield, B. M.                     | 1ST LIEUTENANTS<br>Darragh, J. T.<br>Alexander, D. S.<br>Coit, W. S.<br>Warfield, B. M.      | CAPTAINS<br>Tracy, M. W.<br>Carter, C. C.   | 1ST LIEUTENANTS<br>Cloud, C. C., Jr.<br>Curtis, K. I.   | 65th COAST ARTIL-<br>LEBY<br>Fort Winfield Scott,<br>Calif.  |
|   |   |  |   | 2D LIEUTENANTS<br>Young, C. G.<br>Rumph, R. W.<br>Wickham, K. G.<br>Langford, C. A.<br>Peterson, I. A.<br>Vail, W. H., Jr.  | 1ST LIEUTENANTS<br>Irvine, M. M.<br>Harvey, T. H.<br>Kessler, K. H.  |
|   |   |  |   | 62d COAST ARTIL-<br>LEBY<br>Fort Totten, N. Y.  | 2D LIEUTENANTS<br>Croker, G. W.<br>Haynes, D. F.<br>Miller, F. A.<br>Wood, J. D.<br>Kappes, G.   |
|   |   |  |   | LIEUTENANT COLONEL<br>Spiller, O. L.  |  |

# DEPARTMENT HEADQUARTERS AND UNASSIGNED

|  |  |   |   |  |   |
|--|--|---|---|--|---|
| <b>PANAMA CANAL DEPARTMENT STAFF</b><br><br>COLONEL Nichols, W. R.<br><br><b>Pacific Sector</b><br><br>COLONEL Marsh, C. T.<br><br><b>Atlantic Sector</b><br>Fort DeLesseps, C. Z.<br><br>LIEUTENANT COLONEL Seaman, E. C. | <b>PANAMA CANAL DEPARTMENT UNASSIGNED</b><br><br>LIEUTENANT COLONEL Finley, C. R.<br><br>MAJORS Jackson, A. M., Adams, N. L., Mackin, R. N., DeWilder, H. P., Bottoms, M., Scott, W. W.<br><br>CAPTAINS Thompson, M. R., Deichelmann, M. K., Bartlett, L. W., Roth, A., Elias, P., Bowman, O. D., Gregory, E. M., Bailey, D. J., Raymond, M. B., Mizer, F. F., Miller, R. L., Lepping, A. J., Holst, J. J., Duvall, H. H., Gumber, J. F., Edwards, P. W., Wilson, A. E., Wright, W. L. | 1ST LIEUTENANTS Roth, I. D., Doyle, P. V., Reybold, F. B., Patterson, C. G., Kushner, G. L., Corum, D. R., Hardy, R. M., Skidmore, W. M.<br><br>2D LIEUTENANTS Dougan, M. D., Royce, P. M., Boughton, R. W., Jr., Bailey, J. R., Jr., Kelly, J. P. A., Megica, M. G., Pavick, J. J., Krisman, M. J., Herstad, J. O., Bane, J. C., Seaver, P. R., Belardi, R. J. | <b>HAWAIIAN DEPARTMENT UNASSIGNED</b><br><br>COLONEL Walker, E. B.<br><br>LIEUTENANT COLONELS Perkins, R. M., Potts, A. E., Wolfe, S. E.<br><br>MAJORS Armstrong, M. G., Pendleton, H. E., McMorris, W. L.<br><br>CAPTAINS Dingeman, R. E., McCarthy, W. J., Lawton, W. S., Martin, D. D.<br><br>1ST LIEUTENANTS Eber, F. W., Hahn, R. W., Kauffman, R. K., Koscielniak, A. A.<br><br>2D LIEUTENANTS Nye, D. B., Evans, B. S., Jr., Yarnall, K. L., Janowski, R. A., Jordan, R. E., Weisemann, H., Simon, L. A., Gifford, J. R. | <b>HQ. HD. OF MANILA AND SUBIC BAYS</b><br><br>BRIGADIER GENERAL Wilson, W. K.<br><br>COLONEL Price, F. A.<br><br>LIEUTENANT COLONELS Dalao, E. B. (PS), Halbert, E. O., Cotter, C. E.<br><br>MAJORS Rutherford, D. J., Hafer, J. B.<br><br>CAPTAINS Smith, J. W. (PS), Martelino, P. (PS), Cole, P. W.<br><br>1ST LIEUTENANTS ROY, P. A., Moore, R. F., Murphy, F. L., Wilkins, G. R.<br><br>2D LIEUTENANT Spengler, H. M. (Aide) | <b>PHILIPPINE DEPARTMENT UNASSIGNED</b><br><br>MAJORS Campbell, A. H., Crews, L. R., Kohn, J. P., McCullough, S., Stillman, E. H.<br><br>CAPTAINS Miller, A. D., Stennis, W. K., Stubbs, G. H.<br><br>1ST LIEUTENANTS Ball, W. H., Crawford, G. H., Edison, D. D., Glassburn, R. D., Mellnik, S. M., Peterson, A. C.<br><br>2D LIEUTENANT Davis, John H., Jr. |
|--|--|---|---|--|---|

## THE COAST ARTILLERY SCHOOL

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